



Bringing Serengeti-Mara partners together for coordinated action

The Society for Serengeti Ecosystem Conservation [NGO Registration No 2069]

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Summary of Conclusions of the **8th Greater Serengeti-Mara Ecosystem Stakeholders Forum** Serengeti National Park, 9-11 January 2026

This report summarizes the outcomes of the 2026 annual meeting organized by the Greater Serengeti-Mara Conservation Society¹, a collective of dedicated Tanzanian, Kenyan, and international protected and conserved area managers, conservation professionals and scientists, who share a common passion for preserving this unique ecosystem. The annual meeting was attended by 48 delegates with equal representation from Kenya and Tanzania (Suppl. 1).

The conclusions presented here stem from integrating the evidence provided by the wider scientific community working in the Greater Serengeti-Mara Ecosystem (Fig. 1) with the management and policy insights of the meeting participants.

Several government organizations from Kenya and Tanzania took part in formulating these conclusions. While their representatives actively contributed to the discussions and recommendations presented in this report, the views expressed do not necessarily reflect the official policies or positions of their respective institutions or governments.

Seven main topics were discussed: i) Serengeti-Mara ecosystem overview plus species of special concern ii) Ecological integrity iii) Tourism; iv) Managing boundaries and human-wildlife conflict, v) River and wetland conservation, vi) Communities, livelihoods and lands Use; and vii) Emerging conservation technologies. The Summary of Conclusions for each section is divided into: a) the key scientific findings presented in the meeting and b) the updates and commitments for 2026 made by the delegates, formulated as much as possible in a SMART² way.

¹ <https://serengeti-forever.org/about-us/>

² SMART solutions refer to strategies, technologies, or interventions that are designed to be:



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Spirit of Collaboration & Partnership

The collective managers responsible for the protection of the natural resources of the Greater Serengeti-Mara Ecosystem (GSME) in the interests of the Tanzania and Kenya nations, identified the following successes and threats to the long-term integrity and well-being of the GSME. The following observations and commitments to address key issues for this ecosystem in 2026 were made:

1. Ecosystem overview and species of special concern

1.1. **Key Scientific Findings update**

- The ecological value of GSME is driven by the unique combination of [geology](#) and [rainfall](#), leading to a rich diversity of habitats
- The wildebeest mass migration is a key and [defining feature of the GSME](#) but also other [long distance animal movements](#), such as those of [vultures](#) and [fish](#)
- The abundance of the main Mara-Serengeti wildebeest migration have remained stable during the past 50 years at [around 1.36 million animals](#)
- Rainfall has increased over the past decades, especially in the Mara, leading to more extreme floods in the wet season; land use change has led to [faster river recession](#) in the dry season

Specific – Clearly defined and focused, addressing a particular issue or objective without ambiguity.

Measurable – Quantifiable so that progress and success can be tracked using clear indicators.

Achievable – Realistic and attainable within the given resources, constraints, and timeframe.

Relevant – Aligned with broader goals, priorities, or the context in which they are implemented.

Time-bound – Having a clear timeline with deadlines or milestones for implementation and evaluation.

For example: **Not-SMART formulation of a commitment:** The pressure from vehicles in the Mara will be reduced. **A SMART formulation would be:** the number of vehicle-days in MMNR in 2027 will be reduced by 10% by regulation by the Narok County Government by linking the maximum number of vehicles to the bed capacity of lodges





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- The fire regime has shown [large changes](#) over the past 20 years due to climate change and positive [management interventions](#), but some parts of Serengeti NP [burn too frequently](#) (annually) while other parts, such as Loliondo, the Mara NR and surrounding conservancies, burn too infrequently for ecologically optimal conditions
- GSME hosts a range of species of special conservation concern, some of them now severely threatened and needing conservation action. The [Southern patas monkey](#) is an endemic species with less than 100 individuals remaining in a small area of the Serengeti NP (western corridor), requiring urgent action to prevent its global extinction. GSME is a global stronghold for [secretary birds](#) that are subject to a range of challenges particularly related to chick recruitment. Nyakweri forest holds the last Kenyan population of the [endangered giant pangolin](#) now highly threatened by deforestation. Critically endangered [vultures](#) are highly threatened by poisoning associated with snaring and belief-based use, potentially including commercial trade. [Cheetah](#) populations are declining, with only seven breeding females remaining in the Mara NR. [Black rhinos](#) are increasing in both the Serengeti NP and the MMNR due to effective protection measures but concerns over genetic mixing from reintroductions remain.

1.2. Updates, conclusions and commitments by the delegates (organization giving the update between brackets)

- The delegates encourage the development, legalization and implementation of comprehensive and evidence-based **General Management Plans** (GMPs) for each of the management areas in adherence to the laws of Tanzania and Kenya that prioritize the conservation and preservation of the ecosystem for the combined benefit of our children's grandchildren.
 - GMPs must be gazetted nationally, so that they have a stronger legal status. MNRT will work on this (MNRT)
 - Development of the updated GMP for Serengeti Park in 2026 will be supported by FZS, with special attention to the inclusion of a section on the new Serengeti-Lake Victoria Corridor (SLVC), supported by University of Groningen with special attention for updating and implementing a fire management plan for Serengeti NP (TANAPA, supported by FZS). TANAPA will include tourism partners to improve the zoning for tourism facilities in Serengeti NP.
 - A fire management plan will be developed in 2026 for Mara NR (NCG)
 - A fire management plan will be developed in 2026 for Ikona WMA (TAWA)
 - GMPs for Grumeti GR and Ikorongo GR are under development (TAWA)
 - GMP for Pololeti GR under development (NCAA)
 - GMP for Maswa GR will be completed in 2026 (TAWA)
 - Support will be given in 2026 by the Mara Triangle/Mara Conservancy to implement the Mara NR GMP, the Maasai Mara Ecosystem Management Plan, and the County Spatial Plan





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- Species of special conservation concern requiring urgent action:
 - *Black rhino*: Good collaboration between Mara NR and Serengeti NP is in place, but a standardised cross-boundary monitoring system will be implemented in 2026 to avoid double-counting. Information sharing between countries will be improved through better cooperation between control rooms (Mara NR, MNRT). Staff from WMA's will be trained in black rhino monitoring (MNRT). MNRT will try to reinvigorate the Eastern Africa Rhino Management Committee in 2026 (MNRT)
 - *Roan antelope*: Population numbers are critically low across GSME. Only one individual remains in Ikorongo GR, with a small population left in Maswa GR, where the number of remaining individuals is uncertain (TAWA). Reasons for the decline of roan antelope across GSME are unclear. Mara Triangle plans to reintroduce roan antelope in March 2026 through a combination of surplus males from Ruma NP and females from South Africa. Also in Tanzania more effort will be put in 2026 for restoring roan antelope populations (GSCS). But for Grumeti Fund recovery of this species is not as high of a priority as other globally critically endangered species in the GSME (GF)
 - *Cheetah*: Only 7 breeding females reportedly remain in the Mara NR - the species needs to be better protected from tourism disturbance and individuals are also killed when moving outside to NP to conservancies. Mara NR will develop interventions in 2026 based on the Reserve MP (NCG). Research on the causes of cheetah decline will continue in 2026 (KWT). The NCG will aim for a system in 2026 to monitor cars in Mara NR, to better protect the remaining cheetah (NCG)
 - *Wild dog*: vanished from Serengeti NP and Mara NR in 1995, however small packs persisted in Loliondo. They were reintroduced back into SNP starting in 2010 and currently there are about 10 packs with 120 individuals in total. This endangered species (7000 individuals remaining worldwide) suffers from declining cross-ecosystem connections due to very large natural home ranges, plus negative impact from diseases (rabies) and other large predators.
 - *Mountain bongo*: In the Mau Forest, the species is primarily threatened by predation by domestic dogs. Finding solutions to this threat is a priority for the Mara Elephant Project, they will put resources into this in 2026 (MEP)
 - *Southern Patas monkey*: Of strong conservation concern, with <100 individuals remaining in a single population in the Serengeti NP (western corridor). Grumeti Fund will allocate resources in 2026 to explore its status and protection options, and possible interventions (GF)
 - *Giant pangolin*: The last remaining population in Kenya, located in Nyakweri Forest, will receive increased conservation attention and funding in 2026 (MMWCA, Mara Triangle)





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- *Elephant*: No issues with ivory poaching currently (Mara NR). Data sharing on elephant populations and their movement will be improved in 2026 by Mara Elephant Project (MEP). Efforts to mitigate human-elephant conflict in Kenya through deploying rangers and drones will be continued in 2026 (MEP)
- *Vultures*: Conservation of vultures requires urgent management action, primarily through articulating and disseminating results to educate and raise awareness of law enforcement interventions and conservation efforts to key policy makers (GSCS)
- *Secretary bird*: This is a globally endangered species with a stronghold in GSME. The species would benefit from more education in communities to enhance its survival outside protected areas, as committed by Kijereshi GR (TAWA). Also the current fire regimes and tourism development are a threat to this species and may need adjustments through a new fire management plan (TANAPA).
- In TZ, TAWIRI will develop in 2026 action plans for some of the above endangered species (TAWIRI)
- Monitoring and protection of the wildebeest migration, a core ecological process of GSME, needs continued effort
 - The tracking program of wildebeest, zebra and in GSME will be continued (Glasgow University)
 - In 2026, a new whole-population census of the Serengeti-Mara wildebeest migration will be conducted in the wet season (Glasgow University, TAWIRI, FZS)
 - FZS will fund the 2026 wildebeest census (FZS)
 - More lobbying is required in 2026 to protect the migration routes (Mara Conservancy/Mara Triangle)
 - TATO will support research in 2026 through funding of collars

2. Ecological Integrity

2.1. Key Scientific Findings update

- The ecological integrity of the protected areas of the GSME protected areas (half of the ecosystem) is highly interlinked with the adjacent mixed wildlife-pastoralist systems in the other half, because most current [calving grounds of the migrations are situated in areas with livestock \(NCA, Loliondo\)](#)





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- The migration from the Mara to the Loita plains (Kenya's last "own migration") of wildebeest, zebra, eland and Grant's gazelle has [fully collapsed](#)
- The ecological connectivity of GSME to its neighbouring Amboseli-West Kilimanjaro Ecosystem is highly challenged, though improvements have been made for the connection to the Lake Victoria ecosystem
 - Implementation of the Narok County Spatial Plan needs the recognition of a special zone of [Rangeland Management Collectives](#), that maintain open rangelands in areas where conservancies are not viable.. This is critical for keeping ecological corridors open and hence secure future wildlife and its potential benefits through ecotourism.
 - An especially urgent action is needed (time window less than 2 years) to keep the area to the east of the MMNR all the way up to the Loita Forest (the "[Mara-Loita corridor](#)") open to withstand the pressures resulting from the rapid progression of private land owners fencing their land.
 - The Tanzanian government has recently [reconnected Serengeti NP to Lake Victoria](#) by annexing the 50 km² Speke Gulf Game Controlled Area to the national park.
- [Invasive plants](#) are a growing threat to the GSME both to its protected areas and rangelands. [Integrated Pest Management \(IPM\)](#) is the recommended approach, and action should be taken now while costs and success rates of fighting these species are still feasible. A key limiting factor now is the legal admission of [biological control agents](#). This approach is typically considered safe when global best practices are adhered to.

2.2. Updates, conclusions and commitments by the delegates (organization giving the update in parentheses)

- Restoration of and challenges to key ecological corridors and associated ecological connectivity
 - Serengeti NP in TZ is now in the process of expanding by 70 km² to include former Nyatwali ward between Lamadi and Bunda (50 km² on land, 20 km² of the lake), giving permanent freshwater access to wildlife, securing connectivity between Serengeti NP and Lake Victoria. Patrols from TANAPA have already started, all people previously living in the area are expected to have moved out by 1 Feb 2026, with formal gazetting expected in the first session of parliament in 2026. Due to fair compensation and good communication, approximately 10,000 people left the area with minimal protest or media attention. There is a need to expand research in this area to establish good baselines and document the restoration process - successes and challenges (TANAPA, GF). An important challenge is now how to fund overpasses for the 10 km stretch of the main national road from Bunda (B19, Fig 1) to Lamadi (B21, Fig 1) (TANAPA). Research and monitoring of this area started in Jan 2025 will be continued in 2026 (University of Groningen).





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- In Kenya, the new Conservancies Bill under development by Narok County provides new mechanisms for funding of conservation and open rangeland management projects on community-managed lands. The Bill will be approved and implemented in 2026 (NCG)
- The Mara-Loita corridor (~ Olderkesi - Naikarra - Olposimoru - Ilkerin - Morijo - Entasekera area, S15 to Y18 in Fig 1) is still open but rapidly closing due to land subdivision starting in 2025. For further conclusions and interventions in this area, see section 6 below.
- The migration of wildebeest through Ikona WMA is being displaced. Attention will be put in 2026 on the Robanda Open Area to make sure that it remains open for migratory wildlife (TAWA)
- Invasive plant species are a growing concern
 - Increased effort planned in 2026 for control of *Prosopis julifloris*, *Lantana camara* and *Opuntia stricta* in the new Serengeti-Lake Victoria Corridor (TANAPA)
 - *Vachellia drepanolobium* (formerly *Acacia drepanolobium*) encroachment is of growing concern in Maswa GR, 1,500 ha was cleared in 2025, and further clearing is planned in 2026 (with an ultimate goal of 15,000 ha), supported by investors such as Bushman Safaris and the Friedkin Conservation Fund (TAWA)
 - Pololeti GR plans to invest in 2026 in restoring the area encroached by *Vachellia drepanolobium*
 - Increased effort planned in 2026 to control invasive species such as *Gutenbergia cordifolia* in NCA (NCAA)
- Conservancies in Mara under MMWCA are developing well but challenges remain
 - in 2025 there were 25 conservancies, in various stages of development, around the MMNR covering approximately 1,800 km² and 13 potential new conservancies to be explored in 2026 (MMWCA)
 - Lease payments to land owners have increased in 2025 (MMWCA)
 - Conservancies are a proven model to keep the land open through providing incentives to land owners to not fence their plots (MMWCA)
 - Collapse of USAID in early 2025 resulted in MMWCA losing 70% of its funding; successful adoption of the proposed Narok County Conservancies Bill could potentially provide some support for the outstanding current needs (MMWCA)
 - The establishment of two conservancies in the Mara-Loita corridor are in the 2026 work plan (MMWCA)





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3. Tourism

3.1. **Key Scientific Findings update**

- In 2025, tourist numbers grew [back to 2019 pre-covid levels](#)
- Scientific evidence suggest current levels of tourism pressure impair the ecological integrity of the Serengeti-Mara Ecosystem as shown by:
 - Decline in wildebeest occupancy in the MMNR, [wildebeest spend less time](#) in areas with high tourism development, and [avoid areas within 6 km of buildings](#). Evidence from tracking shows that new lodges in ecologically-critical areas, such as the site of the recent new Ritz-Carlton Masai Mara, can [displace key migration routes](#), with a negative outcome for future tourism benefits
 - Negative impacts on distribution, behaviour, and demography of some species (especially large cats, birds of prey and their nesting sites)
 - While annual tourist numbers have [remained relatively stable](#) over the last 8 years (with the exception of the COVID years), the [number of cars has](#) increased, and the number of [camps/lodges has](#) increased, suggesting a 'dilution effect' (i.e. there are fewer tourists per vehicle, and fewer tourists per room and per camp). Therefore, there are more vehicles and lodges per tourist per tourist suggesting growing pressure from vehicle use and an increasing infrastructure footprint (ie higher impact per tourist).
 - Over the last 20 years, infrastructure has grown by 783% in GSME, especially in low-use and wilderness zones which are eroding.
 - Lion densities are [negatively correlated](#) with tourist camp density
 - The current high level of tourism has a [negative impact on cheetah](#) hunting, recruitment and survivorship

3.2. **Updates, conclusions and commitments by the delegates (organization giving the update/commitment in parentheses)**

- Solutions are needed to manage the growing conflict between national goals of both Kenya and Tanzania to attract more tourists against the ecological costs of tourism. The GSME is heavily marketed and remains a top tourism attraction and this is leading to locally unsustainable tourism pressure, impairing ecological integrity and future tourism value
 - Kenya aims to raise tourist arrivals from 2 million to 5 million/year. Similarly, Tanzania aims to grow from 5.4 million tourists in 2024 to 8 million per year by 2030.





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- Instead, such goals would better focus on increasing the total economic value generated by tourism overall rather than the number of visitors (which promotes growth of tourism operators and facilities with high conservation impacts).
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- Additional regulation is needed in those parts of GSME where high tourism pressures threatens ecological integrity and hence long-term tourism benefits, such as Mara NR, the Mara Conservancies, Serengeti NP and NCA
 - Tourism operators should not be lumped into one category, there are good and bad ones. New regulations are needed to set financial performance levels and set minimum contributions expected from tourism operators. Only those high-performing, responsible and high-contributing operators should be granted continued licences to operate. Currently, there is insufficient valuation and payment for externalities (uncompensated ecological damages) of investments in tourism infrastructure. For example, a camp in a conservancy in Mara contributes 800,000 USD/year from a 26-bed camp to conservancy landowners leases. A balloon company in the Mara Triangle contributes 960,000 USD/year to the management of the Mara Triangle. By comparison, one of the balloon companies in Serengeti contributes 16,000 USD/year to Serengeti NP.
 - New metrics are needed to evaluate if there is still "ecological space" for new tourism infrastructure. For example, a critical percentage of undisturbed habitat that is more than 6 km away from any lodge or camp. This is better than a maximum number of camps as it also accounts for spatial configuration (clustered vs. evenly spaced)
 - There is large pressure imposed by the number of cars in the ecosystem at the same time and extent of illegal off-road driving. New regulations and technologies (such as LoRa vehicle tracking) are needed to support the management of vehicles. Alternatively the number of vehicles could be linked to the bednights per lodge. TATO will encourage its members to reduce the number of vehicles they are deploying in Tanzania's protected areas (TATO)
 - Mara Triangle/Mara Conservancy will deploy a tracker in every vehicle in the Mara Triangle in 2026
 - In the Serengeti NP, there is a transition of seasonal camps becoming permanent as a way for operators to retain their allocated sites and prevent other operators from using their site in the next season. A longer lease (ie 3 year lease) with a requirement of "no infrastructure" at the site for 6 months could help relieve some inter-seasonal pressure (TATO)
 - Reducing lights at night in camps and lodges could reduce wildebeest avoidance of infrastructure, and reduce the negative impacts of tourism (see experiences with this from SWRC, Seronera (M23, Fig 1). Additional analysis is needed to understand wildlife movement responses to infrastructure during daytime and nighttime.





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- The scientific information presented in the current meeting will be brought to the Mara Investors Association to raise awareness and stimulate action regarding the current and growing conservation challenges brought on by the various growing tourism impacts (Mara Investors Association)
- Improving the balance between economic gains and the ecological costs of tourism
 - Substantially raising the park entry fees for Serengeti NP could be considered, as has been done for the MMNR, where fees were doubled for international visitors during the high season. The number of visitors dropped from 420,000 to 250,000 but the revenues for NCG increased from 1.2 billion USD to 1.6 billion USD/year.
 - Tourism in Ikorongo GR is still below target levels, with plans to further develop (TAWA)
 - Tourism in Kijereshi GR remains low. Plans are in place to further develop tourism in 2026 in cooperation with Serengeti NP, also given the new developments in extending Serengeti NP into Lake Victoria (TAWA). TATO will help Kijereshi to develop its tourism business.
 - Communities next to Kijereshi will be supported through the 'SWIKA' model, supporting community development through infrastructural improvements, job creation, and sustainable economic growth. (TAWA)
 - Tourism on village lands in Loliondo will be stimulated (Ngorongoro District Council)
 - Options should be explored to create new tourism attractions outside the current main tourism circuit
 - Developing tourism in Tanzania's northwest circuit, such as Burigi-Chato, is challenging because most tourism companies are based in Arusha. The costs of accessing the northwest makes it financially more attractive for operators to focus on the traditional northern circuit (MNRT)
 - TZ government is trying to encourage investors to move to the southern circuit, with actions such as improving the airport in Iringa, the new tarmac road to Ruaha NP and new airstrips in Nyerere, Ruaha and Mikumi NPs (MNRT)
 - For Serengeti NP, new investors are sometimes granted access due to political pressure, even against the advice of the TANAPA Board (TANAPA). For Serengeti NP, the process of acquiring licenses for new camps should be reviewed to ensure compliance with the GMP.
 - Completed GMPs should be gazetted (following legal requirements to do this) so that they become legally binding and, thus, better able to halt unwanted additional developments
- Increased efforts in marketing, recognition and awareness by tourists and policy makers of conservation issues
 - East Africa media marketing strategy launched in 2025 (MMNR)
 - Serengeti NP has been crowned in 2025 as the world's leading national park





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- The Maasai Mara has been listed in the World Book of Records under the title of “World’s Greatest Annual Terrestrial Wildlife Migration”, for hosting (during part of the year) the dramatic annual movement of more than 1.5 million wildebeests, zebras, and antelopes across the greater Serengeti-Mara ecosystem — the largest event of its kind on Earth.
- A new visitors centre will be established in the Mara Triangle in 2026 to increase awareness of tourists to conservation issues, including their own impact (Mara Conservancy/Mara Triangle)
- Kenya’s annual Maa cultural week will be organised from 4-9 Nov 2026, involving investors and community members to promote tourism and celebrate the Maa language and culture (NCG)
- A policy brief will be launched in 2026 by GSCS to point out the challenges posed by growing and poorly regulated tourism (GSCS)
- Further developments in tourism infrastructure are ongoing
 - Sites for 13 new lodges assigned in NCA, to start construction in 2026 (NCAA)
 - Continued research in 2026 to identify ways to better balance tourism with nature conservation (NCAA)
 - In 2026, a new road will be opened from Lake Eyasi (R34, Fig 1) to Ndotu (O30, Fig 1), and also a new road from Engaruka (Z30, Fig 1) to Empakai Crater (X29, Fig. 1), to release pressure on the Ngorongoro crater (U32, Fig 1) (NCAA)
 - Expansion of Serengeti NP into Lake Victoria gives opportunities for new types of tourism, lake/boat-based tourism also linking to Rubundo Island NP and Burigi-Chato NP (TANAPA)
 - Challenges with road maintenance in Serengeti NP: in 2025, 1.5 billion TSH was used on this (TANAPA)
 - Challenges with road maintenance in Pololeti GR (NCAA)

4. Managing boundaries: human-wildlife conflicts, hard edges and conservation fencing

4.1. **Key Scientific Findings update**

- Increasing human encroachment and changing land-use patterns around the Greater Serengeti–Mara Ecosystem (GSME) are making protected area boundaries harder to maintain, intensifying Human–Wildlife Conflict (HWC) and pressure on both people and wildlife.
- [Hard and soft protected area boundaries](#) require different solutions





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- Clear boundary demarcation, such as the mapping and beaconing of Kijereshi Game Reserve, combined with joint patrols, intelligence sharing, and specialised enforcement units, has contributed to reducing poaching and improved compliance in several areas.
- [Conservation fencing](#) in Ikorongo has continued to deliver positive outcomes, both in [reducing HWC](#) and [protecting wildebeest migration routes](#), demonstrating that targeted fencing, as a “solution of last resort”, can be effective when integrated with enforcement and community engagement.
- Illegal grazing by livestock (especially at night) in the MMNR is a key threat to its wildlife and tourism value, and has [further increased in 2025](#)
 - For example, lions near the MMNR boundary [live only half as long](#) compared to lions living deep in the Reserve closer to the Tanzanian border, likely due to killings by herders from Talek, Sekenani and Ololaimutia illegally grazing their livestock in MMNR.
- [Snaring remains a significant threat](#) in the western Serengeti, while illegal grazing is largely controlled in Tanzania, it continues to expand in the MMNR.
- [Poisoning](#) of vultures and mammalian predators (lion, hyena) associated with retaliatory killings and bushmeat snaring, is a growing problem and requires urgent law enforcement action

4.2. Updates, conclusions and commitments by the delegates (organization giving the update/commitment between brackets)

- Mixed results in anti-poaching
 - Good progress in 2025 with joint anti-poaching patrols and information sharing between MMNR and Serengeti NP
 - Poaching remains a problem in Pololeti GR, with poachers coming from Serengeti District
- New ideas for mitigating H-W conflict
 - In 2025, a new insurance scheme is gradually being implemented for consolation of damage due to HW conflict (MMWCA)
- Mixed results regarding the control of illegal grazing in protected areas
 - Special designated units to control plus stricter rules (caught livestock is put up for auction) is working well in Serengeti NP
 - Livestock incursion remains a problem in Pololeti GR, highlighting the need for stricter land use planning in adjacent Loliondo villages (TAWA)





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- Livestock incursion is still a problem in Kijereshi GR. Stronger enforcement measures will be implemented in 2026 to address this issue (TAWA)
- Removal of illegal livestock grazing at night from the MMNR can rely on the support of the Mara Investors Association
- Research on the impact of illegal grazing on lion populations in MMNR will continue in 2026 (KWT)
- Based on the positive results of the conservation fence to cope with human-elephant conflict, more conservation fences are planned
 - National guidelines for conservation fencing will be developed and embedded in national policy in TZ (MNRT)
 - The cost of establishing a conservation fence is relatively high (10,000 USD/km) but the Ikorongo example shows that it can have very positive outcomes for mitigating human-elephant conflict (GF)
 - Maswa GR plans to ultimately install a conservation fence along 200 km of its western boundary (G34 to G24, Fig 1), with the first stretches to be completed in 2026 (TAWA)
 - Serengeti NP is exploring a conservation fence from Tabora B (M17, Fig 1) to the Kenya border (L11, Fig 1)
 - Grumeti Fund and TAWA are exploring a conservation fence from Park Nyagoti (K19, Fig 1) to near Bunda (C19, Fig 1)
 - Problematic elephant control is challenging, with fatalities reported in neighbouring communities in Kijereshi GR (C22, Fig 1) (TAWA)
 - More effort will be put into addressing human-wildlife conflict in 2026 (Bariadi district)
- Increase support of communities neighbouring or within protected areas through resources generated by these protected areas
 - Maswa GR supported a health center in neighbouring communities in 2025 along with various other community development initiatives
 - Kijereshi GR develops projects to generate revenues to support neighbouring communities, including the provision of 100 beehives to improve their livelihoods
 - Grumeti Fund will continue projects in 2026 to improve livelihoods in neighbouring communities of Grumeti GR, Ikona WMA and Ikorongo GR (GF)
 - NCAA will provide additional social services to communities within NCA, such as education and safe drinking water (NCAA)
- Intensify contributions in 2026 to land use planning of villages in TZ adjacent to protected areas
 - FZS will support the development of land use plans in 2026 for 7 villages adjacent to Serengeti Park north of Tabora B gate (L16, Fig 7) (FZS)





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- FZS will enhance engagement in 2026 with Ngorongoro District and communities in Loliondo on rangeland management, including engaging with international partners and donors such as KFW
- Land use plans will be developed for the 5 villages jointly responsible for Tanzania's Loliondo Plains (T20, Fig. 1) (NOLORAMATA, University of Groningen)

5. River and Wetland Conservation

5.1. **Key Scientific Findings update**

- Permanent rivers, such as the Mara River are [important biodiversity hotspots](#) and host characteristic [fish migrations](#)
- Rivers and water access in GSME, for people, wildlife and livestock, are increasingly under stress, as reflected by [drying rivers](#), [degraded riparian zones](#), and declining ponds such as along the Pololeti and Robana Rivers
- [Land use intensification](#) (more crop farming, higher livestock stocking rates) is increasing [erosion and runoff of sediment](#) to rivers in the Mara River catchment, both in the Mau forest (due to increased farming activities) and in the Talek river watershed (due to increasing livestock stocking rates, especially sheep and goats), and has now led to [trace metal](#) and [pesticide contamination at levels of concern](#), also with [bioaccumulation in the food web](#)
- Low river flows (due to droughts and land use change) lead to declines in water quality and large [fish kill events](#), which are becoming [more frequent](#)
- Rainfall, river level and webcam data are increasingly being stored and made available in real time through online platforms, such as [marariverresearch.org](#) and the [Earthranger platform](#).

5.2. **Updates, conclusions and commitments by the delegates (organization giving the update/commitment in parentheses)**

- Progress in hydrological monitoring
 - Water quality and quantity data will be better integrated
 - For Serengeti NP a dashboard will be developed for ecological health, starting with real-time data on groundwater levels (FZS)
 - A new program is being established in 2026 to monitor and establish baselines for water quality (GF)
- There is a need for a cross-sectoral approach to land use planning in the direct surroundings of the protected areas within the GSME, integrating solutions for challenges related to water, energy, climate change, carbon markets, agriculture and





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conservation. Water is a good "point of integration" for such a cross-sectoral approach, for example, through river basin-scale land management plans.

- Degradation of riparian areas remains an ongoing concern
 - Robana River is suffering from severe degradation due to livestock access (TAWA). In 2026, Grumeti Fund will work closely with the District Commissioners of Bunda and Serengeti District to begin restoration of the Robana River (F19, Fig 1)
 - Sand harvesting from river beds, such as along the Talek, Sand and Mara Rivers, is a growing concern, as it promotes flash floods, and should be more strongly regulated and managed (NCG)
- The discussion on promoting carbon credits as a new source of income for pastoralist communities needs a stronger link with sustainable land management and river flow and quality
- Artisanal gold mining is increasing and therefore increasingly impairing water quality, such as through the use of mercury for gold extraction, as in Park Nyigoti (K19, Fig 1), affecting the Grumeti River. This needs additional control and targeted management action (TAWA)
- Increased effort is needed to protect the 'watertower' catchment areas of the main rivers in the ecosystem, the Mau Forest for the Mara river and Ewaso Nyiro rivers, and the Loita forest for smaller streams running into the Rift Valley (WRTI)
- The CBOs in NOLORAMATA (Loliondo, TZ) and Loita RMC (KE) will jointly restore two key natural water sources in 2026: Sariani springs in Loliondo, Tanzania and Olchorro ol Luai in Loita, Kenya
- Explore organising a Pololeti River day in 2026, similar to the Mara River day (NOLORAMATA)

6. Communities, Livelihoods, and Land Use

6.1. **Key Scientific Findings update**

- Rural communities (pastoralists, crop farmers) [use more than half](#) of the Serengeti-Mara ecosystem, and their future land use is therefore critical to the future of the whole region, including the protected areas
- New solutions for sustainable land use are needed due to the [doubling to tripling of the rural populations](#) over the next 20 years
- Regional land use planning now requires clearly defined zoning with regard to the optimal [use for different zones](#)





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- In Narok county, [land subdivision followed by fencing](#) is severely restricting the movement of wildlife and livestock across the landscape, with strong negative impacts on wildlife populations, ecological connectivity and the livelihoods of local pastoral communities
 - The [Mara-Loita corridor](#) urgently needs new solutions for keeping the land open, as it is [rapidly closing](#), especially after the [subdivision in 2023](#). While most communities do not want traditional conservancies here, they are very open to establishing [Rangeland Management Collectives](#) and other forms of community land management, where neighbouring land owners collaborate to improve their rangeland quality while keeping their land unfenced.
- In Loliondo, the [Loliondo Plains](#) remain open due to strong bylaw agreement of the 5 villages that jointly manage this area, while the area is:
 - very important for wildlife, now is the [calving area for a migration](#) of 50,000 - 100,000 wildebeest
 - Locally degrading due to overstocking of livestock that has led to [bush encroachment](#), but with recent success in community-based rangeland management through [re-introduction of rotational grazing and fire](#).
- In NCA, there is still an [ongoing discussion](#) on the future land use model to be implemented. Two presidential committees are now working on their reports, advising on a choice of either zoning according to multiple priorities or the designation of the whole NCA for wildlife and tourism only (which would require the removal and resettlement of approximately 100,000 people). These reports are expected in 2026.

6.2. Updates, conclusions and commitments by the delegates (organization giving the update/commitment in parentheses)

- Reverse rangeland degradation by new approaches
 - The Mara-Loita corridor (approximately the area bounded by Olderkesi - Naikarra - Olposimoru - Ilkerin - Morijo - Entasekera, S15 to Y18 in Fig 1)) (also called 'Mara East') is still partially open but has in 2025 been rapidly closing due to land subdivision and rapid fencing of private parcels. This is a critical, currently unprotected area.
 - New initiatives will be developed in the Mara-Loita corridor in 2026, including conservancies (MMWCA), but especially Rangeland Management Collectives (RMC) through an "open rangeland-livestock first" approach. Such new policy options are needed to keep rangelands open that are not sufficiently interesting to get funding through the traditional Mara conservancies model that relies solely on tourism partners for the leasing of land. Rangeland Management Collectives (RMC's) should become fundable under the new Narok County Conservancies Bill (NCG). In 2026, the RMC model will be further developed and tested in Loita (Loita RMC, University of Groningen). RMC's should be





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- complementary to conservancies, not competing with them. Conservancies should also be established where viable, such as in parts of the Loita Forest (Y16, Fig 1, KWA, NCG, MMWCA).
- KWCA is willing to bring together, in 2026, different conservation models, open rangeland management initiatives and forest protection for the Mara-Loita corridor. These include the Loita Rangeland Management Collectives, the One Mara Carbon's Sustainable Grazing Management soil carbon project and Eden's Compassionate Carbon Afforestation and Reforestation project. This will be a regional concerted effort to promote tourism, promote open healthy rangelands for pastoralists, while enhancing conservation and promoting ecological connectivity. (KWCA, WRTI, MMWCA, Maasai Mara University, University of Groningen).
 - The development of the CBO NOLORAMATA will be further supported in 2026, with a focus on developing land-use plans to keep open rangelands and protect key natural water sources in Loliondo (University of Groningen). NOLORAMATA intends to restore 200 hectares of healthy rangelands in Loliondo in 2026 through the approach of bush clearing, cessation of grazing in the dry season, and use of controlled burning. (NOLORAMATA). More donors will be stimulated to support NOLORAMATA (Ngorongoro District Council)
 - Implementation of village land use plans in Loliondo will be stimulated in 2026, associated with better benefit sharing from revenues of protected areas (Ngorongoro District Council)
 - A landscape zonation plan will be further developed for Narok County and Ngorongoro district, separating the landscape into 7 zones with different priorities (University of Groningen), to support the implementation of the Narok County Spatial Plan, and the village land use plans now developed in Loliondo (University of Groningen)
 - Develop new revenue models for conservation and open rangeland management through carbon credits
 - Compassionate Carbon is developing a carbon project in the Loita Forest (Y16, Fig 1) with support from MEP to prevent its deforestation after subdivision (MEP)
 - One Mara Carbon Project is a soil carbon project expected to make its first payments to landowners in 2026, especially in conservancies (MMWCA).
 - We need better monitoring and reporting on the impact of conservation interventions on people in the communities within GSME and this should start with Free, Prior and Informed Consent (FPIC) processes led by communities before conservation projects are initiated.
 - In 2026, new initiatives will be undertaken to disseminate the findings of the current meeting to the regional and district commissioners in the Mara Region of Tanzania (northwest of GSME) and Arusha Region (northeast of GSME) (GF) as well as to Ngorongoro District (Ngorongoro District Council)





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- New funding mechanisms and policy instruments for sustainable rangeland management are being developed
 - Narok County Conservancies Bill is now being developed, expected implementation in 2026 as a new mechanism to fund land owners for sustainable rangeland management, both in conservancies and in rangeland management collectives (MMWCA, NCG)
- Increasing challenges due to climate change
 - The 2025 prolonged dry season caused much trouble for pastoralists (MMWCA)
 - This 2025 drought caused livestock to move to areas reserved for wildlife in NCA. Additional boreholes were established in 2025 to cope with this problem (NCAA)
 - As rivers and hippo pools dried up in Pololeti GR, hippos moved to other areas in the dry season (NCAA)
- Involvement of communities, especially women and youth, in issues of conservation and open rangeland management will be improved
 - In 2026, a youth network will be developed aimed at conserving open, sustainable rangeland management (NCG)
 - In 2026, communities will be involved more in the management and patrols of NCA (NCAA)
- The added economic value of livestock keeping will be improved
 - To keep more revenues from livestock production within Narok County, a new abattoir will be established in Narok town in 2026 (NCG)
 - Development of the Narok airport in combination with the development of feedlots will allow for improved revenue from air transport of beef to the Middle East (NCG)

7. Emerging conservation technology and data integration

7.1. **Key Scientific Findings update**

- In the Mara, [new technological solutions](#) are being explored to better inform the management of protected areas. This is shaped partially through the new Maasai [Mara Conservation Centre](#) (MMCC) near Keekorok using the Earthranger platform for data compilation, integration and analysis, leading to near-real-time monitoring. Here, data from a [LoRaWan](#) network are brought together in an [Operations Room control centre](#), allowing tracking of collared wildlife, ear-tagged rhinos, ranger patrols as well as MMNR and tourism [vehicles](#). This is combined with [ranger mobile reporting](#) through smartphones and [camera traps](#)





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- This technology is now used for [tracking 27 black](#) rhinos (out of 60-70 individuals forming the whole population) with LoRaWan ear tags, leading to a good overview of their temporal and [spatial movements](#), thus facilitating their protection in real time
- The technology is also used for [tracking giraffes in the conservancies](#), showing their quite limited local home ranges
- The LoRaWan network has now also been expanded with 4 [weather stations](#)
- The plan is for all data to be compiled, analysed and displayed in the operations control room at the MMCC.
- While large near-real-time datasets are collected, the analysis and presentation of these data for management purposes are still under development. For this purpose, the [Ecoscope analytical software](#) is now being used and further developed, to support analysis of the data collected on the Earthranger platform. This allows regular reports to be produced and dashboards to be created in support of MMNR's management needs. For example, a quick spatial overview of [patrol efforts](#) is easily produced through an automated process.
- In Serengeti NP and NCA, a [network of LoRa Gateways](#) has also been developed to facilitate tracking, especially of wildebeest, black rhino and elephant. But for legal and security reasons, the data are not collected in an Earthranger environment, because of fears that this would place sensitive data on servers outside Tanzania. Instead, the data is stored on a platform developed by TAWIRI. This technology allows the [behavioural classification of tracked animals](#), which is not possible with standard satellite collars.

7.2. Updates, conclusions and planned actions by the delegates

- Data integration between organizations, platforms, and countries will be improved
 - In 2026, new efforts will be undertaken to synchronize data on elephant movements between KE and TZ, given the use of different technologies/platforms (MEP), ensuring that the various control rooms monitoring vehicles, patrols and animal sightings are shared where appropriate.
 - Security and legal aspects of emerging conservation technologies will be reviewed in 2026, especially with the aspect of critical data being hosted outside the country (MNRT)
 - Earth Ranger data platform will be further developed in Kenya in 2026, with additional protocols to ensure that the data are protected and safe
 - WRTI in Kenya will launch a National Wildlife Data Center in 2026 (WRTI)
 - A "One Health" approach will be explored in 2026 as an integration mechanism, linking animal health, human health, and healthy rangelands (WRTI)





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- In March/April and October/November 2026 meetings will be held to help compile data and integrate research findings in the Mara (WRTI)

8. Suggestions by delegates for the next (2027, 9th) edition of this GSCS forum

- The current time slot (early January) is suitable
- Have more time for more stakeholders on the 2nd day of the meeting (MNRT)
- Extending the meeting to two full days, 1.5 days was considered too short. This would mean arrival on the evening of day 1, meeting on days 2 and 3 and departure on day 4. So spending 3 nights instead of the current 2 nights will be required. The Mara Conservancy is potentially willing to cover additional costs of this extension of the meeting duration.
- Use the results of this meeting to work with policymakers to make sure that the decisions made are accurate and evidence-based (TANAPA, MNRT, GF)
- Develop innovative partnerships to make sure that the conclusions of this meeting are also implemented (MNRT)
- Make sure that these GSCS meetings are better aligned with the annual budget cycle, to make sure that commitments are also included in the new annual budgets - financial year in TZ starts on 1 July (MNRT)
- Invite key delegates from the water management sector to participate in the next GSCS meeting (TAWIRI)
- Make an inventory prior to the next to determine to what degree the conservation managers of GSME actually have the resources required to implement the conservation actions called for in their management plans (KWCA)





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Fig. 1 Overview of the Greater Serengeti-Mara Ecosystem with its different protected areas. References in the text to this fig. refer to row and column labels (download [high-res version](#))

