



STRATEGY PAPER

Joint Co-operation Strategy on Climate Change and Security in Northern Armenia and Southern Georgia

Strengthening climate resilience in the South Caucasus
through fire risk reduction

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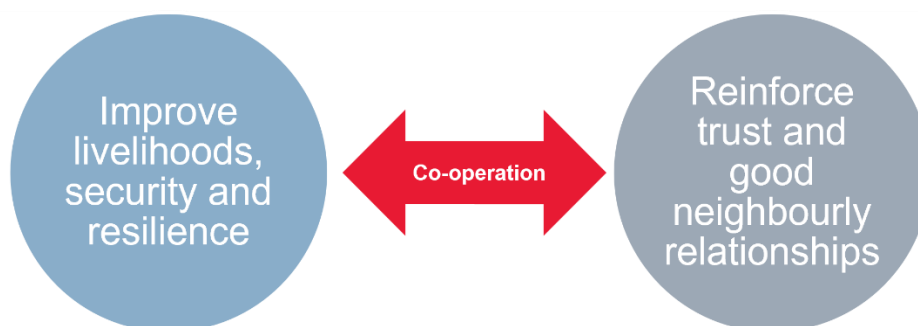
1. Introduction

Fires pose a major risk to the cultural and natural landscapes of the South Caucasus (including northern Armenia and southern Georgia), which is home to ecologically and socio-economically important forest and alpine ecosystems. Historically, most fires in the region have been caused by human activities, particularly in connection with the use of agricultural and pastoral lands. This continues to be the case today. However, as a result of climate change, the frequency, intensity and severity of fires could increase as temperatures rise, precipitation levels change, and heatwaves and droughts become more frequent and intense – conditions that are conducive to the occurrence and spread of fires.

Uncontrolled and undesired landscape fires and wildfires – referred to here as “fires” for short – pose environmental, economic, social and health risks and, therefore, undermine human security. Moreover, post-fire hazards, such as landslides, mudflows and floods, may create an additional burden for people, especially those whose access to resources is already limited on account of gender, ethnicity, socio-economic status or other factors. In this way, fires have a negative impact on socio-economic stability and livelihood security, thereby putting further pressure on societies. In situations where these security challenges are shared across multiple jurisdictions in border regions, such as in northern Armenia and southern Georgia, joint co-operative efforts are required to find appropriate solutions.¹

Strengthened and targeted co-operation between the two countries, in particular between municipalities in border regions, is of paramount importance as it makes it possible to address these risks in a holistic and sustainable manner. On the one hand, co-operation activities would help to improve the livelihoods, security and resilience of communities in the context of a changing climate. On the other hand, they would reinforce trust and good-neighbourly relations in the region.² Armenia and Georgia have a long-standing history of co-operation on fire management and capacity-building, including activities facilitated by the OSCE in close partnership with the Global Fire Monitoring Center (GFMC). This strategy paper is aimed at identifying areas of intervention and specific activities to strengthen co-operation between the two countries, and in particular between the selected pilot municipalities of Bolnisi (Georgia) and Sarchapet (Armenia), to address risks related to landscape fires and wildfires.

Purpose of co-operation addressing climate-related security risks



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¹ For more information, see Lukas Rüttinger, Pia van Ackern and Adrian Foong, *Regional Consultation for the South Caucasus – Armenia and Georgia: Co-operation Opportunities for Addressing the Security Implications of Climate Change* (OSCE, 2021).

² For more information, see Beatrice Mosello, Adrian Foong, Lukas Rüttinger and Pia van Ackern, *Co-operation in Northern Armenia and Southern Georgia: Scoping Study on Addressing Shared Climate-Related Security Challenges and Strengthening Resilience in the South Caucasus through Fire Risk Reduction* (OSCE, 2023).

1.1. Project background

This document outlines a joint co-operation strategy for addressing climate-related security risks in northern Armenia and southern Georgia. It is an output of the extrabudgetary project “[Strengthening responses to security risks from climate change in South-Eastern Europe, Eastern Europe, the South Caucasus and Central Asia](#)” implemented by the OSCE in partnership with the Berlin-based think tank adelphi.³

The project seeks to:

1. Enhance understanding of how climate-related security risks are impacting South-Eastern Europe, the South Caucasus, Central Asia and Eastern Europe.
2. Increase co-operation among regional stakeholders with a view to jointly addressing climate-related security risks.
3. Raise awareness and build capacities for an integrated approach to climate change and security among the main stakeholders.

The municipality of Bolnisi (Georgia) and the community of Sarchapet (Armenia) are the central focus of the Armenia-Georgia component of the project’s activities in the South Caucasus.

1.2. Development of the strategy

This strategy presents a set of ideas for co-operation to jointly address climate-related security risks in northern Armenia and southern Georgia. The following activities were undertaken as part of its development:

1. The strategy is primarily based on the outcomes of the **workshop** entitled “Climate change and security in northern Armenia and southern Georgia: Developing a joint co-operation strategy and an implementation plan for fire risk reduction” that was organized by the OSCE in partnership with adelphi and the GFMC in Tbilisi on 24 and 25 October 2023. Representatives of relevant ministries and the municipalities involved, along with experts from the region and international partners, attended the workshop. The participants **identified priority topics for co-operation, developed project concepts** for joint risk reduction measures in synergy with other local, regional and international initiatives, and **explored ways of strengthening co-operation** between the municipalities.⁴ In order to discuss, validate and build on the outcomes of the workshop, the OSCE and adelphi conducted a further round of **municipal consultations** in Sarchapet on 9 April 2024 and in Bolnisi on 10 April 2024. National and local stakeholders participated in these consultations, including forestry agencies, emergency services, local fire rescue units, municipality representatives and civil society organizations involving women and young people.
2. The workshop and subsequent consultations were informed by the findings of a **scoping study** presented in the OSCE-adelphi report [Co-operation in Northern Armenia and Southern Georgia: Scoping Study on Addressing Shared Climate-Related Security Challenges and Strengthening Resilience in the South Caucasus through Fire Risk Reduction](#), which draws heavily on insights from previous stakeholder consultations conducted through online meetings, surveys and interviews. During the workshop and consultations, participants validated and refined the areas for co-operation identified in the study.
3. The scoping study, in turn, was based on **stakeholder consultations** conducted in 2021 and the OSCE-adelphi report [Regional Consultation for the South Caucasus – Armenia and Georgia: Co-operation for Addressing the Security Implications of Climate Change](#), which identified northern Armenia and southern Georgia as a priority hotspot for co-operation given

³ For more information, see the OSCE landing page for the project, <https://www.osce.org/node/521965>.

⁴ The most promising ideas presented at the workshop were selected and elaborated as potential design concepts for pilot projects.

that the region houses several transboundary river and forest ecosystems along with important cross-border infrastructure networks.

1.3. Objectives and content of the strategy

The main objective of this joint co-operation strategy is to strengthen co-operation between the municipalities of Bolnisi (Georgia) and Sarchapet (Armenia) with a view to addressing climate-related security risks arising from landscape fires and wildfires (see Box below). The strategy consists of three main parts:

First, it outlines **priorities for co-operation** on:

- Community fire management and joint training;
- Awareness-raising in support of fire prevention, preparedness and response;
- Government-level co-ordination.

Second, it presents ways of **strengthening co-operation among the municipalities**.

Third, it sets out an **implementation plan** in the form of four preliminary concepts for joint projects involving stakeholders across both municipalities. These can serve as a starting point for the development and implementation of pilot activities.

It is worth noting that the ideas for projects presented in this strategy are envisioned as a blueprint for collaboration – that is, they are meant to invite engagement and consideration by a diverse range of organizations and partners, including beyond the OSCE. This approach highlights the importance of co-operative efforts and of pooling resources and expertise so as to address complex challenges effectively. Based on an inclusive and adaptable framework, the proposed projects encourage other entities to participate in, contribute to, and possibly lead initiatives that are aligned with their own goals and capacities. This strategy is aimed at facilitating co-operation among various stakeholders so that they can share responsibilities and amplify the impact of their activities through joint efforts.

Definitions

Three key terms are defined as follows by the Global Fire Monitoring Center:

Landscape fire: A fire burning in vegetation of natural and cultural landscapes – including natural and planted forests, organic terrain (such as peatlands), shrubs, grass, pastures, agricultural lands and peri-urban areas – regardless of ignition sources, damages or benefits.

Wildfire: Any unplanned or uncontrolled fire burning in vegetation of natural, cultural, industrial and residential landscapes that, regardless of ignition source, may require (a) suppression response or (b) other action according to agency policy, such as allowing the fire to freely burn as long as this meets land management objectives.

(In this strategy paper, the term “fire” is used to refer to both wildfires and landscape fires.)

Fire management: All activities required for the protection of burnable forest and other vegetation resources from fire and the use of fire to meet land management goals and objectives. It involves the strategic integration of such factors as a knowledge of fire regimes, likely fire effects, valuable resources at risk, level of forest protection required, cost of fire-related activities, and prescribed fire technology into multiple-use planning, decision-making and day-to-day activities to achieve the stated resource management objectives.

2. Priorities for co-operation

During the consultations, stakeholders from Armenia and Georgia identified the following challenges related to fire management both within and across the two countries: (a) a lack of well-trained voluntary personnel, firefighting equipment, water sources and related infrastructure to navigate the rough terrain and dense vegetation in border areas; (b) a low level of knowledge and awareness of fire risks and correct behaviour among local communities, in particular a strong misconception among farmers that agricultural burning is beneficial for crop growth and pest control; and (c) limited systematic co-operation between the two countries due to a lack of protocols, language barriers, the absence of cross-border communication mechanisms at the municipal level and complicated border-crossing procedures.⁵ Taking these challenges into account, the stakeholders identified priority areas in which improved co-operation between the municipalities of Bolnisi (Georgia) and Sarchapet (Armenia) would help to address climate-related security risks – specifically those pertaining to fire management.

2.1 Community fire management and joint training



There are several challenges related to fire management and training, both within and between the two municipalities across their shared border. Both municipalities face similar problems in preventing and responding to fires. These include underdeveloped plans and procedures, but also a high degree of dependence on the central government at the municipal level. In addition, arrangements for collecting and analysing the information and data needed for prevention, preparedness and response, such as landscape and vegetation mapping of fire hotspots, are absent or underdeveloped. The lack of firebreaks and protection corridors (narrow to wide “fuel breaks” in which easily burnable vegetation is removed to reduce fire intensity and spread, and to facilitate fire suppression) between and within agricultural lands and forest areas is conducive to the rapid expansion of fires. Limited access to water sources equipped with hydrants and pumps hampers firefighting efforts, as does the absence or poor condition of road infrastructure and mobile phone coverage in the border area. The challenges are compounded by the lack of well-trained (voluntary) personnel, volunteer systems, financial resources and technical equipment for firefighting.

Opportunities for co-operation to jointly tackle these challenges include:

- Strengthening municipal-level prevention and preparedness to reduce disaster risks, for example by:
 - Conducting hotspot and risk mapping⁶, building on existing efforts by the emergency services, establishing shared early warning systems⁷, and setting up local and cross-border councils to develop joint plans for preparedness. Central governments can assist with these tasks by providing GIS (geographic information system) data and expert inputs and intensifying co-operation at the intergovernmental level;
 - Conducting joint assessments of fires in border regions in order to review fire management and response capabilities and improve processes for future emergencies, building on existing national forest inventories while filling data gaps at the local level;
 - Exploring and expanding nature-based solutions for fire prevention, such as the ecologically benign and safe use of prescribed fire, controlled grazing and targeted vegetation treatments as an alternative to burning (e.g., using organic matter or charcoal [biochar] for soil improvement or as a source of renewable energy), together with

⁵ For more details, see *Co-operation in Northern Armenia and Southern Georgia: Scoping Study on Addressing Shared Climate-Related Security Challenges and Strengthening Resilience in the South Caucasus through Fire Risk Reduction* (OSCE and adelphi, 2023).

⁶ For example, the Caucasus Environmental NGO Network (CENN) conducted a study on wildland fire hazard modelling for Georgia in 2011 within the framework of the MATRA Project in order to better understand the spatial and temporal patterns of wildland fires and establish risk zones in Georgia to support strategic fire defence planning. The data from this study could be updated and expanded to Armenia when mapping fire hotspots and risks there. Working with available data saves time and financial resources, in addition to providing tried-and-tested methodologies for such assessments. For more information, see Irvin T. Feliciano Santiago and Nino Kheladze, “GIS Wildland Fire Hazard Modeling in Georgia” (CENN, 2011).

⁷ Governments should consider whether initiatives such as *Early Warnings for All*, co-led by the World Meteorological Organization and the United Nations Office for Disaster Risk Reduction, can be leveraged to strengthen regional co-operation on providing early warning of fire risks. More information on how countries in the South Caucasus are already engaging with the Early Warnings for All initiative is available at: <https://community.wmo.int/en/news/south-caucasus-and-kazakhstan-unite-safer-tomorrow-advancing-regional-early-warning-systems>.

municipal, agricultural and forestry stakeholders in order to jointly develop firebreaks and protection corridors in border areas while learning about the related concerns and problems faced by the various stakeholders and how to address them;

- Working with border guards from border communities on all aspects of fire prevention, preparedness and response to increase familiarity among them and the emergency services with regard to common legal and logistic processes;
- Setting up response headquarters in fire emergency situations so as to centralize information in one place and organize a more effective response. Georgia has done this domestically, and its experience could inform the creation of a joint headquarters in the event of fires in border regions;
- Strengthening municipal-level response by preparing evacuation plans and setting up a response committee with clear roles and responsibilities for the various stakeholders involved at the local and national levels, such as emergency services, forestry and health ministries and border security agencies. During evacuation, special attention should be paid to the most vulnerable population groups such as older people and people with disabilities;
- Improving the quality and availability of infrastructure related to fire management, including:
 - Building, maintaining and cleaning the roads and paths needed to access fire hotspots in rough terrain and thick vegetation in the border areas, including taking care of potholes and trees or branches that could block access and hinder firefighting operations;
 - Developing and expanding water resources along the border, such as reservoirs, ponds and tanks that are accessible by helicopter, and, where possible, installing equipment such as hydrants and high-capacity pumps;
- Investing in the updating or procurement of firefighting equipment and protective gear. The types of tools and machinery used are likely to be different in each country, so municipalities should exchange lessons and good practices on how to upgrade and procure equipment⁸, particularly in the light of co-operation on fire management;
- Increasing the human resources pool by recruiting, training and equipping additional firefighters and enhancing and expanding volunteer systems (see also subsection 2.2) under the direction of the responsible and competent local authorities;
- Conducting awareness-raising campaigns among local communities on fire risks, and on the fire prevention and management activities which they can become involved in (see also subsection 2.2);
- Supporting training events and capacity-building on fire management for the municipalities and exploring synergies with existing efforts, such as those being undertaken as part of the regional engagement of the GFMC⁹, including:
 - Conducting regular joint training activities on fire prevention, preparedness and response along with exercises on response protocols, equipment handling and the mapping of regional landscapes to familiarize personnel on both sides of the border with each other's work and develop joint co-ordination procedures;
 - Organizing joint study trips to both municipalities, but also to other countries with a long history of cross-border fire management;
 - Engaging a broad range of stakeholders involved in fire prevention, preparedness and response in the joint training activities, including personnel working for protected areas, forest personnel, rescue personnel and volunteer fire brigades;

⁸ For example, co-operation with the Bolnisi-based mining company RMG, which operates with heavy machinery (e.g., trucks) of the kind needed for firefighting, could be explored. For more information, see: <https://richmetalsgroup.com/en/>.

⁹ The GFMC has been supporting the development of landscape fire management capabilities in the South Caucasus since 2004 through the Regional Fire Monitoring Center (based in Skopje) and the Regional South East Europe / Caucasus Wildland Fire Network. For more information, see: https://gfmc.online/globalnetworks/seeurope/SEEurope_1.html.

- Leveraging existing initiatives – such as regional fire exercises conducted under the PPRD East 3 programme¹⁰ but also, more broadly, initiatives dealing with disaster response, such as [Armenian-Georgian inter-agency simulation exercises on humanitarian relief and disaster preparedness](#) and joint earthquake drills – to strengthen co-operation on fire prevention, preparedness and response.

Find the corresponding project concepts “Community fire management for a safe environment” and “Building fire prevention and response infrastructure in border areas” in the implementation plan (see subsections 4.1 and 4.2).

2.2 Awareness-raising in support of fire prevention, preparedness and response



As confirmed during the stakeholder consultations, most wildfires in the South Caucasus are caused by human action or negligence. This is often due to the limited knowledge and awareness of various population groups and tourists regarding fire risks and hazards, preventive measures and the correct behaviour to adopt in the event of a fire. In addition to the fire hazard posed by flammable waste and campfires, there is a strong misconception among farmers that agricultural burning – a common practice in the region – is beneficial for crop growth and pest control. Raising awareness of fire management among the local population and tourists should therefore be a priority for both municipalities.

Opportunities for co-operation to jointly tackle these challenges include:

- Sharing knowledge and raising awareness among local communities about fires and the measures they can engage in to prevent them¹¹, building on existing awareness-raising efforts¹², including by:
 - Producing multilingual information materials, such as booklets, posters, signs and information boards, and distributing these in local communities and touristic areas;
 - Conducting educational activities, such as games or drills, in schools, businesses, local government units, and youth camps with participants from both countries;
 - Conducting television and social media campaigns targeting different social groups, such as farmers, local communities and young people;
 - Engaging young people in information campaigns;
 - Informing farmers about methods for the disposal of agricultural waste that are more sustainable than burning. Any alternatives should be viable and, therefore, depend on locally available options. To increase acceptance, they should ideally generate tangible co-benefits for farmers, such as the opportunity to sell waste as biomass for energy or plastic production, or to produce compost for the restoration of degraded soil;
 - Raising awareness of the existing regulations and law enforcement mechanisms to deal with the accidental or deliberate setting of fires, such as fines and criminal prosecution;

¹⁰ The third phase of the EU-funded programme “Prevention, Preparedness and Response to Natural and Man-Made Disasters in Eastern Partnership Countries” (PPRD East 3) began on 1 October 2020. The PPRD East programme was launched in 2010 with a view to strengthening disaster risk reduction and crisis management in Armenia, Azerbaijan, Georgia, Moldova and Ukraine and to promote regional co-operation with the EU Civil Protection Mechanism. For more information, see: <https://www.pprdeast3.eu/>.

¹¹ The Foundation for the Preservation of Wildlife and Cultural Assets (FPWC) may have some valuable lessons to share in this regard. The FPWC has been implementing forest fire prevention, capacity-building and public awareness campaigns and events in and around the Caucasus Wildlife Refuge protected area since 2020. For more information, see: <https://fpwc.org/contents/newsPress/representatives-of-the-us-forest-service-visited-the-caucasus-wildlife-refuge>.

¹² For example, the National Forestry Agency is planning similar public awareness campaigns in Georgia. To create synergies, the envisaged campaigns should be aligned with existing awareness-raising activities, in particular with their messages and approaches.

- Making use of existing local information platforms¹³ and campaigns¹⁴ that can put fire management topics and co-operation on their agenda, in particular by involving agricultural extension centres¹⁵;
- Improving the enforcement of fire safety regulations and laws;
- Conducting activities to increase the motivation of young people to become involved in fire monitoring and in volunteer fire brigades, thereby closing capacity gaps. Such activities include:
 - Information campaigns in schools and universities and on social media about fire risks and the active role that young people can play in fire management;
 - Boosting recruitment through incentives such as competitions offering prizes. Armenia has had positive experiences conducting such competitions among young rescuers, both girls and boys, seeking to improve their skills in such areas as first aid, physical preparedness and firefighting;
 - Liaising with national governments to create further incentives for youth engagement, for example certificates, scholarships or improved career prospects;
- Encouraging and promoting the involvement of women in fire management activities such as preventive and response measures, awareness-raising campaigns and co-ordination committees, while taking into account the different realities faced by women living in the municipalities.

Find the corresponding project concept “Fostering awareness of fire risks and building capacity for prevention and response” in the implementation plan (see subsection 4.3).

2.3 Government-level co-ordination



Co-operation between Armenia and Georgia on fire management at the national level is already taking place, as evidenced by the joint efforts to combat large fires in the Borjomi Gorge in [2017](#) and [2022](#).¹⁶ However, such instances of co-operation are mostly informal rather than systematic. Improving protocols and mechanisms for communication within and between the countries at different governmental levels, and addressing language barriers, could result in a more systematic approach to co-operation. Furthermore, complicated border-crossing procedures requiring permission from the national security services take up valuable response time in the event of an emergency.

Opportunities for co-operation to jointly tackle these challenges include:

- Enhancing or establishing communication and co-ordination mechanisms for joint fire management at the municipality level, building on existing cross-border co-operation activities for the local authorities in the bordering regions of Armenia and Georgia;¹⁷
- Addressing language barriers between countries but also within communities, for example by identifying language skills in teams and using modern translation software;

¹³ Within the Ministry of Environmental Protection and Agriculture of Georgia, for example, the Environmental Information and Education Centre is tasked with disseminating information on forest-related matters, which includes awareness-raising on forest fires and the importance of countermeasures. Furthermore, the Emergency Management Service and the Ministry of Internal Affairs of Georgia are conducting an information campaign for children on fire management, prevention and preparedness.

¹⁴ For example, the awareness-raising campaign “Befriend the Police” run by the Ministry of Internal Affairs of Georgia has the potential to incorporate and disseminate knowledge on topics related to fire management. For more information, see <https://police.ge/en/shinagan-saqmeta-saministrom-qalaq-batumidan-sainformatsio-shemetsnebit%C2%A0%C2%A0kampania-/15455>.

¹⁵ The Ministry of Environmental Protection and Agriculture of Georgia operates several agricultural extension centres, which are intended to equip local farmers with essential knowledge and information for the sustainable use of agricultural land.

¹⁶ See <https://georgianjournal.ge/society/33727-day-four-fire-stops-spreading-in-borjomi-gorge.html> and <https://www.1lurer.am/en/2022/08/25/The-Georgian-Interior-Minister-thanks-Armenia-for-offering-help-in-the-fight-against-forest-fires/782980>.

¹⁷ The Council of Europe seeks to enhance cross-border co-operation by building relationships based on common principles and heritage. To that end, the Council’s Centre of Expertise for Good Governance facilitates joint interactive training courses and the development of memoranda of understanding on co-operation as part of its “Democratic Development, Decentralisation and Good Governance in Armenia” project. For more information, see: <https://www.coe.int/en/web/centre-of-expertise-for-multilevel-governance/-armenia-georgia-cross-border-cooperation-a-promising-start>.

- Developing a joint fire management co-operation strategy – based on mutual trust and agreements within and between countries defining clear roles and responsibilities and tested through joint training and simulations (see also subsection 2.1) – together with frameworks for information-sharing, with a focus on prevention;¹⁸
- Building a shared central knowledge repository and database on fire risks and other relevant information such as equipment types and availability across the countries; developing detailed landscape maps that show roads and water resources; and drawing up a list of stakeholders indicating their roles and responsibilities;
- Bringing together local emergency services and border security personnel in transboundary co-operation processes, for example through mutual study visits, to ensure that border guards are aware of emergency plans involving border crossings and are well informed about logistical aspects, critical response actors, etc. This is to ensure that fire management and other emergency personnel are not stopped at borders or perceived as illegal border crossers, which can delay the response and exacerbate fire damage.

Find the corresponding project concept “Developing road maps for intergovernmental co-ordination on fire management” in the implementation plan (see subsection 4.4).

¹⁸ The United Nations Sustainable Development Cooperation Framework for Armenia 2021–2025 can serve as a model of how a joint strategy between Armenia and Georgia could be structured, outlining key points such as the setting of priorities, the development of a “theory of change” and the need to focus on groups at risk. For more information, see: <https://unsdg.un.org/sites/default/files/2021-10/UN-Armenia-Cooperation-Framework-2021-2025.pdf>.

3. Improving the formats for co-operation between stakeholder groups

In addition to the areas for co-operation outlined in Section 2, stakeholders who took part in the consultation process identified a number of ways to foster co-operation on fire management between both countries and at the municipality level. The suggestions below are intended to serve as guidance on how to develop more concrete actions for co-operation between the stakeholders concerned.

Improving direct communication and maintaining good-neighbourly relations

- Establishing mechanisms for regular communication between relevant stakeholders from both countries, such as a WhatsApp group. Some aspects to consider are as follows:
 - The ministries responsible for fire management in Armenia and Georgia should decide which stakeholders to include in the communication channel, and for what it should be used (e.g., only for emergencies or also for information exchange);
 - Ideally, stakeholders from such areas as disaster risk response, emergency services, border security and forestry, as well as the heads of municipalities, should be included in the communication channel;
 - Both sides should agree on a common language (if available) or use free translation software to overcome language barriers;
 - Designating one or more persons to manage and monitor the channel and ensure that the list of users is up to date and that the channel is used properly;
 - A protocol should be developed for special situations, such as changes in critical personnel or in government, e.g., after an election;
 - Georgia has been successfully using WhatsApp for certain internal communications, and it could share best practices and potentially extend its existing systems to include stakeholders from Armenia;
- Establishing direct communication at the institutional level between relevant government bodies with regular meetings to assess risks, exchange information, look into the need for policy development and updates, develop joint strategies, etc. Such exchanges can be based on a memorandum of understanding between the national governments that establishes the frameworks for co-operation. Maintaining such a regular exchange, including on logistical matters and documentation, requires organizational support. To that end, the governments should look into bringing in new and dedicated personnel, or consider whether organizational tasks can be distributed among stakeholders from the relevant government bodies;
- Assessing existing national response plans, including protocols for communication between national agencies and subnational authorities in different emergency scenarios, and exploring whether and how these plans can be leveraged for fire management and response at the transboundary level.

Investing in training and trust-building

- Conducting joint training activities, workshops and study trips for stakeholders from both countries and in both countries. These joint events can take different formats and serve a variety of purposes:
 - *Workshops* provide the basis for national and local representatives to outline common goals and plans, and agree on training methodologies, firefighting methods and on the stakeholders to be targeted by capacity-building and communication/awareness-raising activities;
 - *Training activities* are designed to strengthen preparedness through mutual familiarization with equipment and practices, the development of action plans, the conduct of exercises and simulations, etc.;
 - *Study trips* allow stakeholders to familiarize themselves with cross-border landscapes, vegetation, water bodies and fire risk zones, and also to meet community members and build trust among all parties;

- Establishing a task force to organize capacity-building events, including the recruitment of volunteers and speakers/trainers with the necessary knowledge and expertise for each event. The task force can be set up by the national governments and comprise government representatives, with academic experts brought in to develop training curricula and consult with relevant ministries. This will require advance planning and communication with relevant ministries on a regular basis. The task force should also be in charge of development training materials in both the Armenian and Georgian languages, ideally building on existing materials. For example, the GFMC provides a broad range of materials, including those that are specific to the South Caucasus and are written in regional languages. These materials also cover topics such as promoting the participation of women and youth engagement.¹⁹

¹⁹ A few specific examples are the [Rationale and Proposal for a Fire Management Concept for the Shikari Valley in Georgia](#) (2015) and a [manual on the conversion of farming vehicles for firefighting purposes](#). The GFMC landing page on [community-based fire management](#) contains links to content on gender, young people, indigenous and religious communities, tourism, migrants/refugees, and much more besides. The [EuroFire international fire management competency standards and training materials](#) also offer a range of multilingual online training resources.

4. Implementation plan

The main objective of the present strategy is to strengthen co-operation between the municipalities of Bolnisi (Georgia) and Sarchapet (Armenia) with a view to addressing climate-related security risks. This objective is supported by the strategy's implementation plan, which includes **four preliminary joint project concepts involving stakeholders across both municipalities**. These project concepts emerged from the OSCE-adelphi workshop held in Tbilisi in October 2023 and from the follow-up consultations in Bolnisi and Sarchapet in April 2024, during which participants used the identified priorities for co-operation (see Section 3) as a basis for defining the outlines of projects on joint risk reduction measures.

In this section, each project concept is structured as follows: (a) a working title; (b) expected results; (c) main activities; (d) target groups; (e) envisaged benefits of co-operation, including how such co-operation could help to address climate-related security risks; and (f) considerations regarding the inclusion of women and young people. The descriptions are kept at a general level, as they are intended as **starting points for more detailed project concept notes** to be developed for bilateral, regional and international donors and organizations that will set out how the projects are to be funded and implemented. In addition, each project concept includes a rough estimate of the time frames and costs involved, and the key sectors to be included, the details of which could be further elaborated and fine-tuned depending on donors' interests and the availability of resources.

Overview of project concepts:

1. "Community fire management for a safe environment"
(community fire management and joint training)
2. "Building fire prevention and response infrastructure in border areas"
(community fire management and joint training)
3. "Fostering awareness of fire risks and building capacity for prevention and response"
(awareness-raising in support of fire prevention, preparedness and response)
4. "Developing road maps for intergovernmental co-ordination on fire management"
(government-level co-ordination)

4.1 Project concept: “Community fire management for a safe environment”

fire management

landscape mapping

community-based solutions

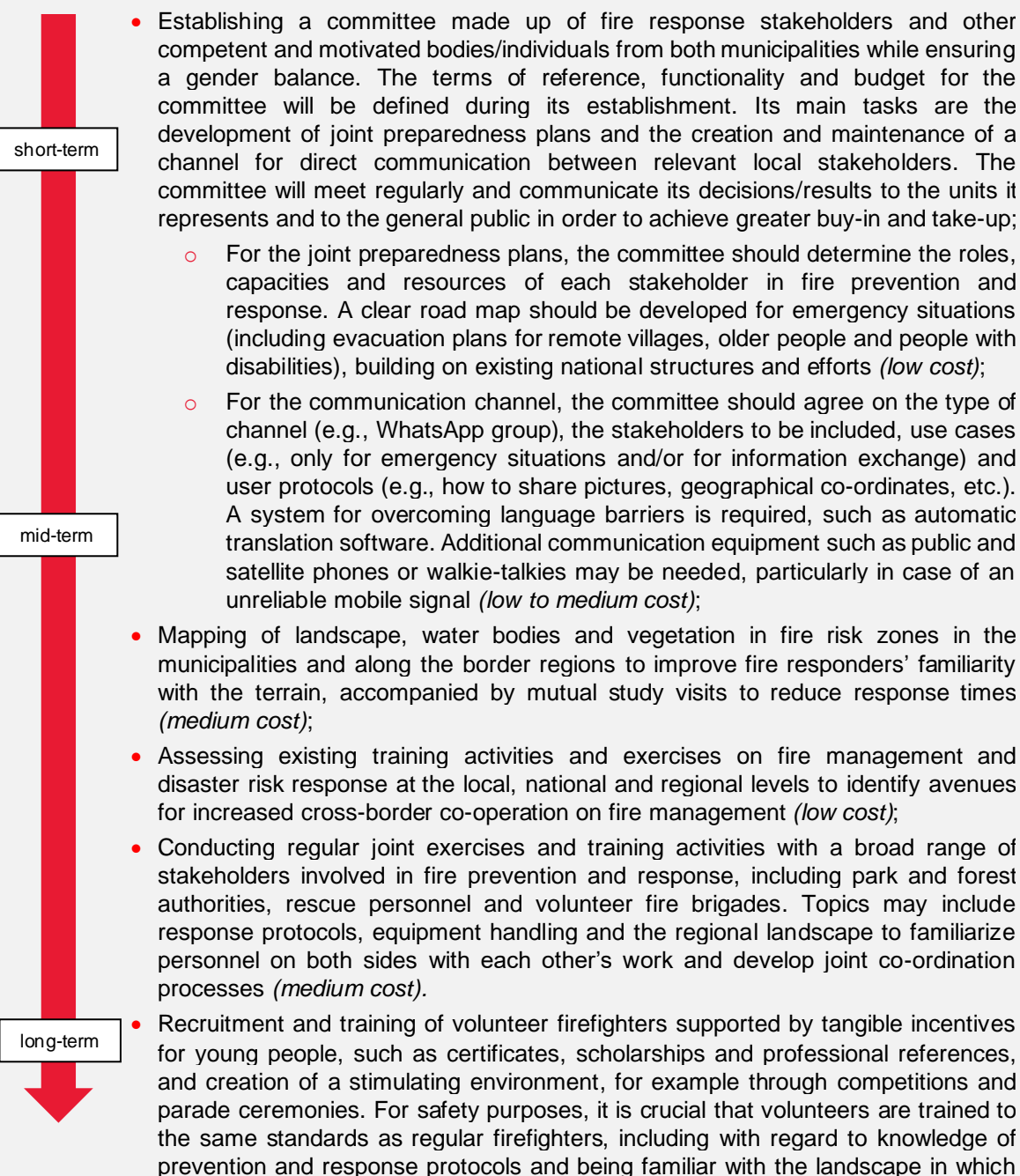
communication

capacity-building

Expected results:

1. Improved direct communication across borders through local firefighting committees;
2. Fire responders are familiar with landscapes and available resources in transboundary fire risk areas;
3. Fire responders in both countries and communities are better prepared to co-operate in emergency situations;
4. Increased pool of well-trained and well-equipped volunteer firefighters.

Main activities:



they are to operate. Training materials should be available in both languages (*medium to high cost*).

Target groups:

The target groups include firefighters, park and forest administration, border guards, municipal officials, law enforcement bodies, such as inspectorates and police at the local level, community members and volunteers.

Co-operation:

The project will improve co-operation by establishing regular contact and increasing knowledge exchange and joint action among local stakeholders on both sides of the border. The focus on shared problems is an important driver of co-operation, as it highlights the importance of shared solutions and the ongoing collaboration needed for these to be successful.

Women and young people:

The project envisages a key role for women in the aforementioned committee and in fire management activities, especially in remote areas and villages. This involves conducting prevention awareness activities in schools and promoting the recruitment of volunteers, including by encouraging future volunteerism in schools and/or engaging young adults as volunteer firefighters. The involvement of young people as volunteers is an essential element of the project in terms of boosting community response capabilities, while offering career and development opportunities to younger members of local communities.

Project synergies:

The project will respect established emergency response structures and build on existing mapping and planning activities related to fire management at the national level.

There are several projects that cover the training of firefighters, but also of emergency and disaster risk reduction personnel. The **EU Module Exercises** (MODEX) consortium organizes preparedness workshops on behalf of the European Commission's Directorate-General for European Civil Protection and Humanitarian Aid Operations. Workshops on forest fire management have been conducted under the MODEX programme for staff from the Emergency Situations Management Department in the province of Kvemo Kartli in Georgia. Similarly, under the EU-funded programme **Prevention, Preparedness and Response to Natural and Man-Made Disasters in Eastern Partnership Countries – Phase 3 (PPRD East 3)**, a full-scale exercise on forest fires was conducted in Tbilisi in 2023. The PPRD East 3 programme also works with partner countries to identify gaps and priorities related to fire management and response. The **United States Forest Service** has likewise conducted training activities on sustainable fire management for government agencies and non-governmental organizations in both Armenia and Georgia. The lessons learned from these training events, workshops and exercises can feed into further capacity-building activities involving fire management personnel and volunteers from Armenia and Georgia to promote learning continuity and close knowledge gaps.

Efforts to recruit and train volunteer firefighters could complement the **voluntary reservist brigade for emergency situations** that is currently being established by the Ministry of Internal Affairs and the Ministry of Defence of Georgia. Furthermore, the Kvemo Kartli Forestry Service has been hiring **"firefighter rangers"** to patrol forest areas during the fire seasons and report any signs of fire to the emergency services. Their experiences can inform the recruitment of volunteer firefighters, and at the same time this recruitment drive can increase the number of Forestry Service rangers skilled in firefighting. Similarly, the implementation of Armenia's Disaster Risk Management Strategy for 2023–2030 and Disaster Risk Management Strategy Action Plan for 2023–2026 can result in synergies as both policy documents provide for the formation of **rescue volunteer community squads** in Yerevan and across the Armenian regions.

4.2 Project concept: “Building fire prevention and response infrastructure in border areas”

fire response

disaster risk management

fire monitoring

water resource management

Expected results:

1. Increased access to water resources in border areas, supported by bilateral agreements and management mechanisms;
2. Establishment of firebreaks and protection corridors to prevent the rapid expansion of fires;
3. Faster detection and warning of fires and more effective response through the use of real-time information and comprehensive fire data, which can inform research and fire management strategies;
4. Overall, reduced risk to the security of humans, the environment and livelihoods through timely alerts, reduced response times and prevention or restriction of the spread of fire.

Main activities:

short-term

mid-term

long-term

- Assessing fire risk areas to identify and prioritize implementation sites, considering, *inter alia*, the availability of natural water, the type and size of possible water resources (ponds, reservoirs, etc.), the hydrological implications of construction, the implications for local communities, accessibility by foot, vehicle or helicopter, proximity to the border, proximity to the next water resource to ensure area-wide coverage (*low cost*);
- Establishing a co-ordination and decision-making committee made up of relevant local and national authorities from both countries that will meet regularly to:
 - Decide on the locations for water resources based on the prioritization of risk areas;
 - Identify stakeholders for implementation and maintenance in accordance with official construction and environmental protection guidelines;
 - Draw up a formal agreement or memorandum of understanding in and between municipalities and countries defining principles for the management of old and new water resources along border areas, taking into account the impact of climate change, and establishing conflict resolution mechanisms;
 - Raise awareness among the population, especially farmers, about the use of water resources, but also about fire prevention more generally (*low to medium cost*);
- Building and maintaining water resources guided by decisions of the aforementioned committee. This includes monitoring and adapting water use regulations in view of seasonal and long-term climatic changes in the region (*high cost*);
- Expanding nature-based solutions for fire prevention, such as the ecologically benign and safe use of prescribed fire, controlled grazing and targeted vegetation treatments as an alternative to burning (e.g., using organic matter or charcoal [biochar] for soil improvement or as a source of renewable energy), together with municipal, agricultural and forestry stakeholders in order to jointly develop firebreaks and protection corridors in border areas while learning about the related concerns and problems faced by the various stakeholders and how to address them (*medium to high cost*);
- Conducting assessments of existing fire detection systems and how these can be expanded in border areas to support early warning and the co-ordination of response measures. Detection systems such as cameras and thermal sensors can be installed locally in fire risk areas. Moreover, the use of smartphone apps would allow the local population to actively engage in fire monitoring and warning. Satellites and other remote sensing technologies can be used to cover the wider

border region, requiring a continuous information exchange between the countries. In addition, the data collected can support research on fire behaviour and the improvement of fire management strategies (*high cost*).

Target groups:

The target groups include firefighters, park and forest administration, border guards, municipal officials, community members, volunteers, and civil society organizations engaged in environmental and biodiversity protection.

Co-operation:

The project will strengthen co-operation and information exchange between countries with regard to fire monitoring and early warning, including through the establishment of joint committees and the conclusion of framework agreements on water management along the border. Given that climate change is expected to create conditions that are more conducive to the spread and severity of fires, the project also addresses the growing and shared security risks posed by fires to local communities and ecosystems across borders.

Women and young people:

Women will be encouraged to have an active role in all areas of the project. Women and youth groups can raise awareness in border region communities about the purposes and functions of water resources and, in so doing, promote a sense of unity in these communities by highlighting the roles of individuals in addressing the shared risk posed by fires.

Project synergies:

In Armenia, the Tashir Forestry Branch has recently piloted a **project using sensors to detect sounds related to illegal logging activities**. The first sensors are planned to be tested in the town of Tashir. If the project is successful, the possibility of using the same sensors also for the early detection of fires should be explored as an efficient and cost-saving way to strengthen fire warning systems.

In the context of the [PPRD East 3](#) programme, increasing capacities for the use of early warning technologies is a key objective.

4.3 Project concept: “Fostering awareness of fire risks and building capacity for prevention and response”

awareness-raising

capacity-building

women and youth

Expected results:

1. Local governments are aware of their roles and responsibilities, and actively engage in fire prevention, preparedness and response;
2. Local communities know how to prevent fires as a result of having gained, and being able to apply, knowledge of fire hazards and measures to avoid fires;
3. Farmers and young people are well informed about fire management and willing to actively engage in fire prevention.

Main activities:

short-term

mid-term

long-term

- Raising awareness among local government bodies regarding their roles and responsibilities in fire management, for example by organizing workshops or conferences. To reduce financial and personnel costs, existing intragovernmental exchange forums can take up this topic (*low cost*);
- Conducting multilingual information campaigns on fire prevention, fire hazards and when/ how to report fires to the authorities for local population groups in the border municipalities, in particular farmers and tourists, through diverse channels and using different formats, such as banners, information boards, warning signs, leaflets, videos and workshops (*low cost*);
- Conducting engaging educational activities and events targeting young people to build knowledge and raise awareness of fire prevention in communities, nurseries and schools, and to recruit volunteers. Women can take a leading role in these activities, highlighting the many ways in which women can become actively involved in fire management (*low to medium cost*);
- Establishing a “guardians of the forest” youth community to monitor and report fires, e.g., via a mobile app, and to educate communities and tourists about fire risks. Motivational campaigns and benefits will attract youth engagement (*medium cost*);
- Raising awareness among farmers about the fire risks of agricultural burning, with specialized material in local languages and dialogue formats such as workshops and community meetings. These will also provide a space for listening to farmers’ needs and concerns and identifying viable and approved alternative solutions for the disposal of agricultural waste (*low to medium cost*);
- Setting up a mobile task force to raise awareness in remote villages in high mountain regions that are difficult to reach owing to limited phone and Internet services (*low to medium cost*);

Target groups:

The target groups are border communities, local government bodies, including bodies responsible for emergency situations, park and forest staff, and tourists. In view of local traditions of burning agricultural waste and the fire hazard potential of such activities, farmers are also a key target group. The inclusion of stakeholders from the energy sector could help in finding viable alternatives to that practice.

Co-operation:

Joint multilingual awareness campaigns require local and national governments to co-ordinate awareness-raising activities and their content. Such exchanges, particularly for the preparation of joint events, would also be useful to highlight gaps and issues that need to be tackled to improve co-operation at all levels more broadly. The actual events and activities will help people to get to know one another and build relationships across borders.

Women and young people:

The project will focus on empowering women to engage in fire management activities, overcoming the traditional notion that firefighting is a purely male domain. Involving young people as volunteers can have a positive effect on their future careers through tangible benefits such as certificates, scholarships and enhanced social and professional status.

Project synergies:

Armenian and Georgian secondary school students have created an online information platform for exchange between border communities, which could also be used for awareness-raising regarding municipal fire management. In addition, synergies with existing awareness-raising campaigns can be explored. For example, the “**Befriend the Police**” campaign of the Georgian Ministry of Internal Affairs presents an opportunity to incorporate and disseminate knowledge of topics related to fire management.

The National Forestry Agency of Georgia has produced a booklet (forthcoming) with **guidelines on correct behaviours and measures to prevent fires**, including guidance for community work. The information it contains can be used for the awareness-raising activities under the project, and the booklet could also be translated and adapted to the Armenian context.

4.4 Project concept: “Developing road maps for intergovernmental co-ordination on fire management”

transboundary co-operation

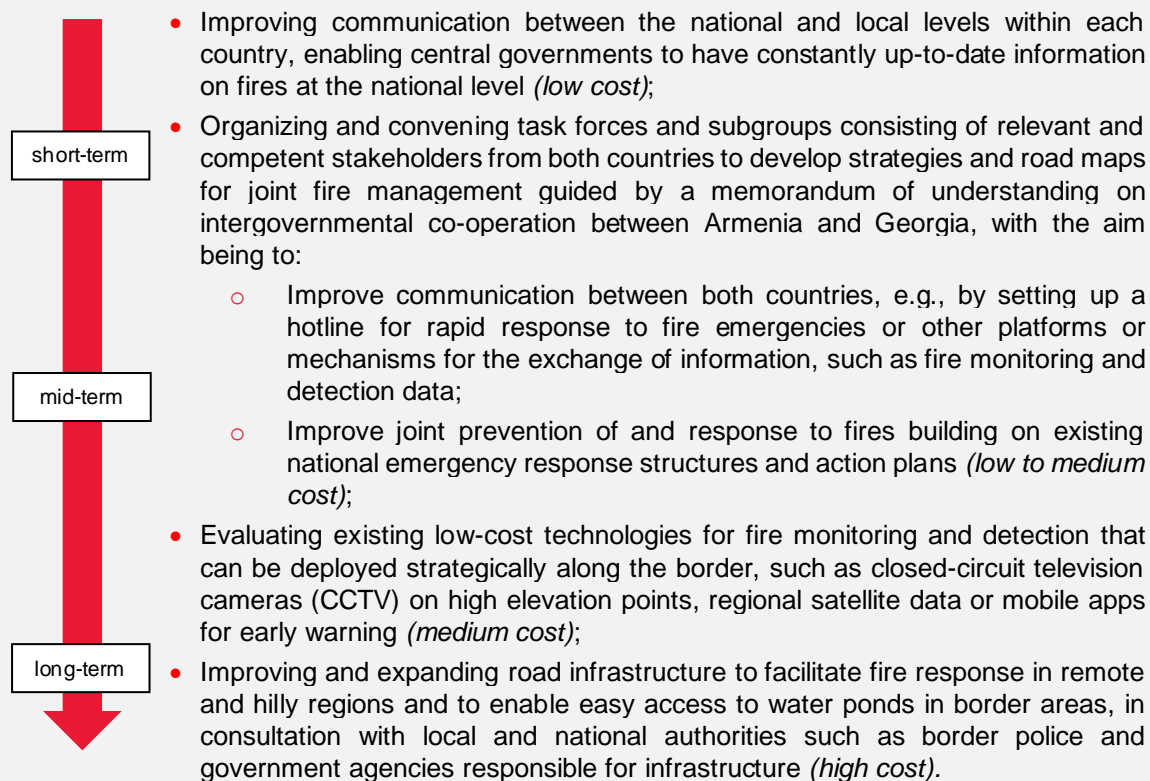
intergovernmental
communicationintragovernmental
communication

intergenerational exchange

Expected results:

1. The national governments have a framework in place for efficient joint fire management and rapid response to fires;
2. Communication within countries between the national and local levels, and between countries, is improved;
3. Already available low-cost technologies for fire monitoring and detection are deployed to enhance early warning across borders;
4. Road infrastructure relevant for fire management in border areas is improved.

Main activities:



Target groups:

The target groups include ministries and government agencies responsible for fire management, disaster reduction and infrastructure, and also the border police.

Co-operation:

The project will formalize fire management and response co-operation between the Governments of Armenia and Georgia and help to jointly overcome individual challenges as both countries can benefit from each other's strengths: while Armenia is strong on fire response, Georgia is strong on early fire detection. A framework for co-operation would therefore create a stronger regional front against the common threat of fires.

Women and young people:

The project will seek to achieve a balanced gender representation in the working groups responsible for the development of strategies and road maps for joint fire management. Whenever possible, the engagement of young staff will be encouraged.

Project synergies:

Armenia and Georgia do not have a formal arrangement in place for co-operation on fighting landscape fires and wildfires, but the existing [bilateral agreement](#) on the prevention of natural and human-made emergency situations and the elimination of their consequences, signed in 2000, offers an opportunity to incorporate joint fire management. Under this agreement, the countries have an obligation to exchange, in a timely manner, information about emergency situations occurring on their territory. The agreement also stipulates that Armenia and Georgia should encourage effective co-operation between relevant authorities in both countries. In addition, there have been several policy developments in recent years that can form the basis for a co-operation framework for fire management and response:

- The development of Armenia's national fire management policy was supported by round tables organized in 2013 as part of the [OSCE-GFMC project "Enhancing National Capacity on Fire Management and Wildfire Disaster Risk Reduction in the South Caucasus"](#). Armenia has recently revised and updated its policy and legislative documents on fire management under a [Russian Federation-United Nations Development Programme joint project](#), incorporating fire management, risk analysis and modelling as components of its national plan for climate change adaptation;
- Georgia's Forest Code was revised in 2020 to ensure compliance with fire safety rules and the implementation of fire prevention measures. In 2022, the Government adopted the [Fourth National Environmental Action Programme of Georgia for 2022–2026](#), which calls upon fire management authorities to adopt a comprehensive approach covering prevention, readiness and response. It also includes activities aimed at strengthening infrastructure and the technical capabilities of emergency services, and sets a target of achieving a pool of 2,000 registered volunteers by the end of 2026.