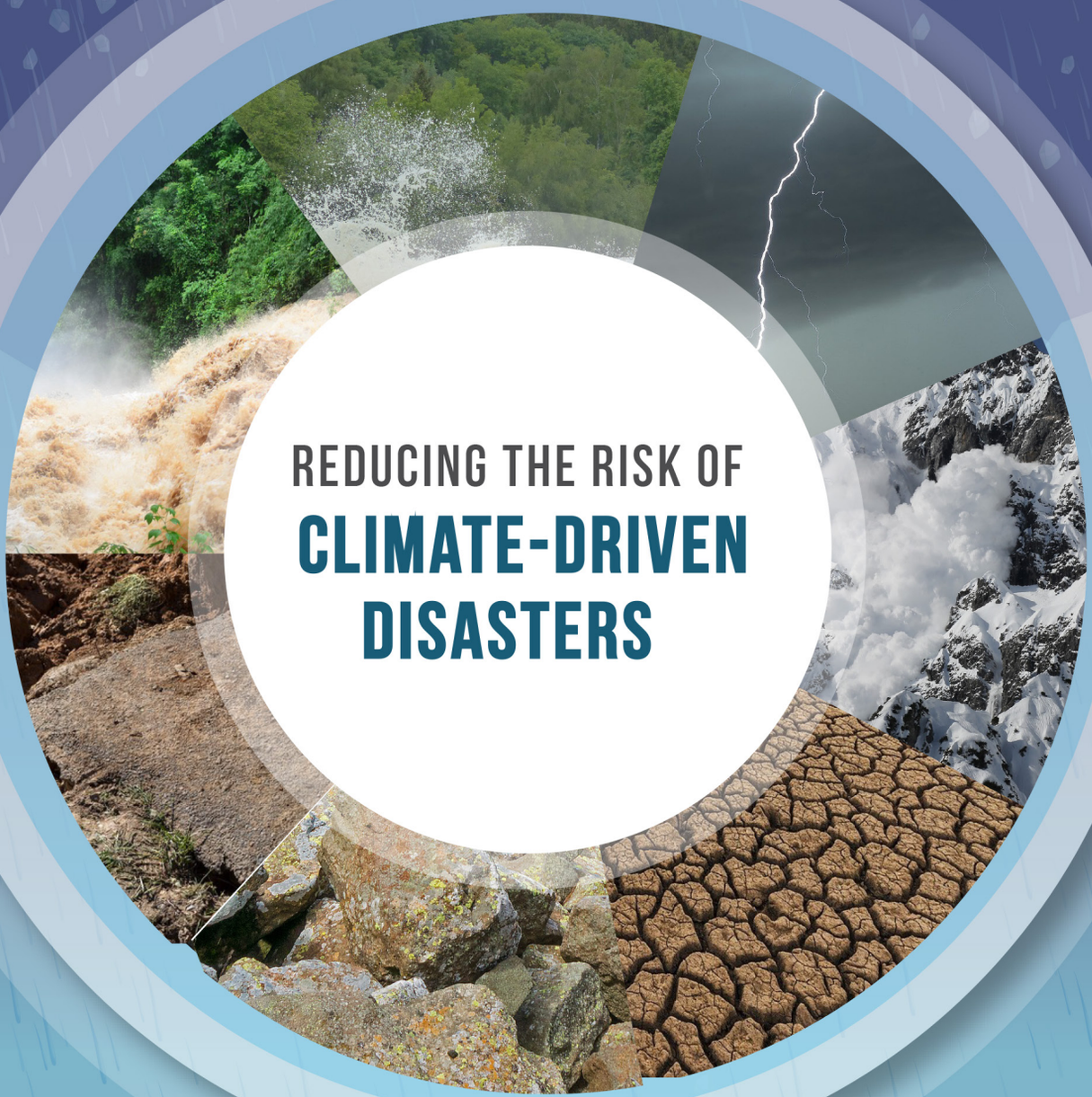

REDUCING THE RISK OF CLIMATE-DRIVEN DISASTERS

FOR PRESCHOOL INSTITUTIONS

TBILISI

2020

The information publication has been developed by the LEPL Environmental Information and Education Centre (EIEC) under the Ministry of Environmental Protection and Agriculture of Georgia (MEPA) with the support of UNDP.)

The information comprised by the publication reflects seven main hazards, containing particular risks for Georgia, caused by the climate change – floods, hail, drought, landslide, strong wind, avalanche and mudflo ws.

The publication has been prepared within the confines of large scale initiative of the government of Georgia and UNDP, which aims at protecting the population against disasters, produced by the climate change, including the above mentioned hazards, which take place within the basins of 11 rivers of Georgia - Enguri, Chorokhi-AcharaTskhali, Supsa, Natanebi, Khobi, Kintrishi, Mtkvari, Aragvi, Khrami-Ktsia, Alazani and Iori.

Resistance of population of Georgia towards the climate hazards will be increased as a result of implementation of this seven year program. Impact of climate disasters on infrastructure and living environment will be reduced and 1.7 million people will be better protected against floods, flash floods, drought and other climate hazards.

The seven year initiative **"Reducing the Risk of Climate-Driven Disasters in Georgia"** is being implemented under the financial support of GCF, SDS, Governments of Sweden and Georgia.

Education, with its specificity and essence, is based on the principle of continuous teaching and learning. After the family, the preschool institution is the first stage of continuity. That is why within the framework of the project, a kind of information publication on issues of disaster risk reduction in Georgia has been elaborated for pre-school institutions personnel.

The primary purpose of this publication is to provide the preschool decision makers with basic knowledge and skills for disaster risk reduction in order to ensure the safety of children attending their facilities.

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TABLE OF CONTENTS

CLIMATE CHANGE AND GEORGIA 5

HISTORICAL CONTEXT 6

DISASTERS CAUSED BY THE NATURAL HAZARDS AND RISK REDUCTION..... 7

WHAT WE NEED TO KNOW AND HOW TO ACT IN CASE OF DANGERS 8

DISASTER MANAGEMENT PHASES AND KEY TERMS 24

ACTIVITIES..... 28

CLIMATE CHANGE AND GEORGIA

Presently globalization process is taking place throughout the world; and in the given reality global challenges have significant role and impact on development of particular countries, mostly causing adverse implications. The climate change is exactly this kind of global challenge, causing various extreme natural events and even disasters, having negative impact on the countries and undermining stable social-economic lives of their populations.

Strictly speaking, obviously, the climate change, is a natural process, though in 95 % of cases it is caused by the human activates; as a conceptually new challenge, it was identified in the mid of the last century, when inadequate and irrelevant increases of global average annual temperatures were recorded. The impact of climate change on the environment is reflected in melting the layers of glaciers and ice, increase of the world ocean level, inundations, floods, mudflows, landslides, avalanches, tsunamis, growth of strength and frequency of various storms.

As a result of the climate change, we witness the alteration of the nature and ecosystems, increased risks of human diseases. It is noteworthy, that intensity of the adverse outcomes of the global warming increases every year, which indicates the vital importance of solving the above problem.

It is obvious, that Georgia is not an exception here and our country is also experiencing painful impact of undesirable outcomes of the climate change.

Due to its specific and complex physical-geographic characteristics, Georgia can be considered to be a poly-climatic country. Therefore, climatic changes taking place in a small country, like Georgia, are felt more painfully compared with large countries with insignificant diversity of climatic types, or so called mono-climatic countries.

It is obvious that economic-social wellbeing of the population of Georgia largely depends on its climate fluctuations, if we consider the number of casualties and victims of floods, avalanches, landslides and other natural disasters, which is increasing on annual basis. Intensity and nature of geographic-biological processes, as well as human activities (food production, development of energy sector, transportation networks, construction etc.) is closely related to the climate change and therefore increases sensitivity and vulnerability of social-economic behavior and state of the population.

Based on the climate change there is a forecast that by 2050 average increase of the temperature in Georgia will be 0.9-1.9 Celsius, and by 2010 it may reach 5.5 Celsius. Frequency and number of heat waves will also grow, sediments regime will change, desertification process will become more intensive, causing scarcity of land resources, sea level will increase, various natural disasters will become more frequent, number and scale of disasters will grow.

Based on the data of the National Environmental Agency of Georgia, it can be said that frequency and geography of various natural disasters has significantly grown in Georgia during the recent years.

Another important message is reflected in Georgia’s Second National Communication under the United Nations Framework Convention on climate change, which implies that frequency and duration of droughts will significantly grow in Eastern Georgia, being a

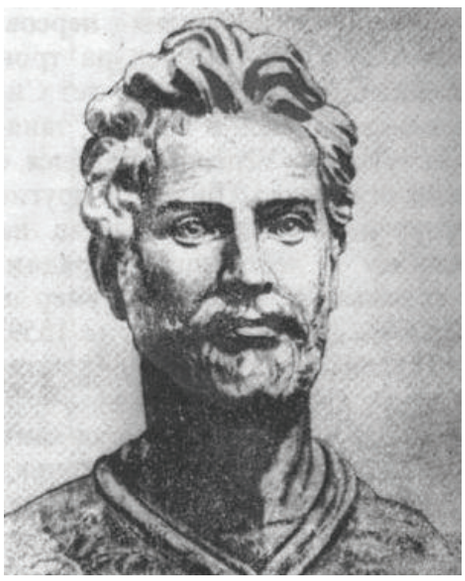
significant precondition for increase in the demand on water resources. Concurrently there is anticipation for decrease of water resources in Eastern, particularly in so called transit rivers, such as Mtkvari, Alazani and Khrami. E.g. in Mtkvari, water level reduction is 26-35 %.

It should be noted that by 2100 need for artificial irrigation of agricultural lands will significantly grow in Eastern Georgia.

Therefore it is absolutely essential that tangible or intangible activities adapted to the given certainty of climate change are implemented in all possible ways, with the involvement of local population and target audiences, including educational institutions.

Education and awareness are so called intangible or intellectual assets, which may be considered to be the most important resource at the first stage of problem resolution.

HISTORICAL CONTEXT

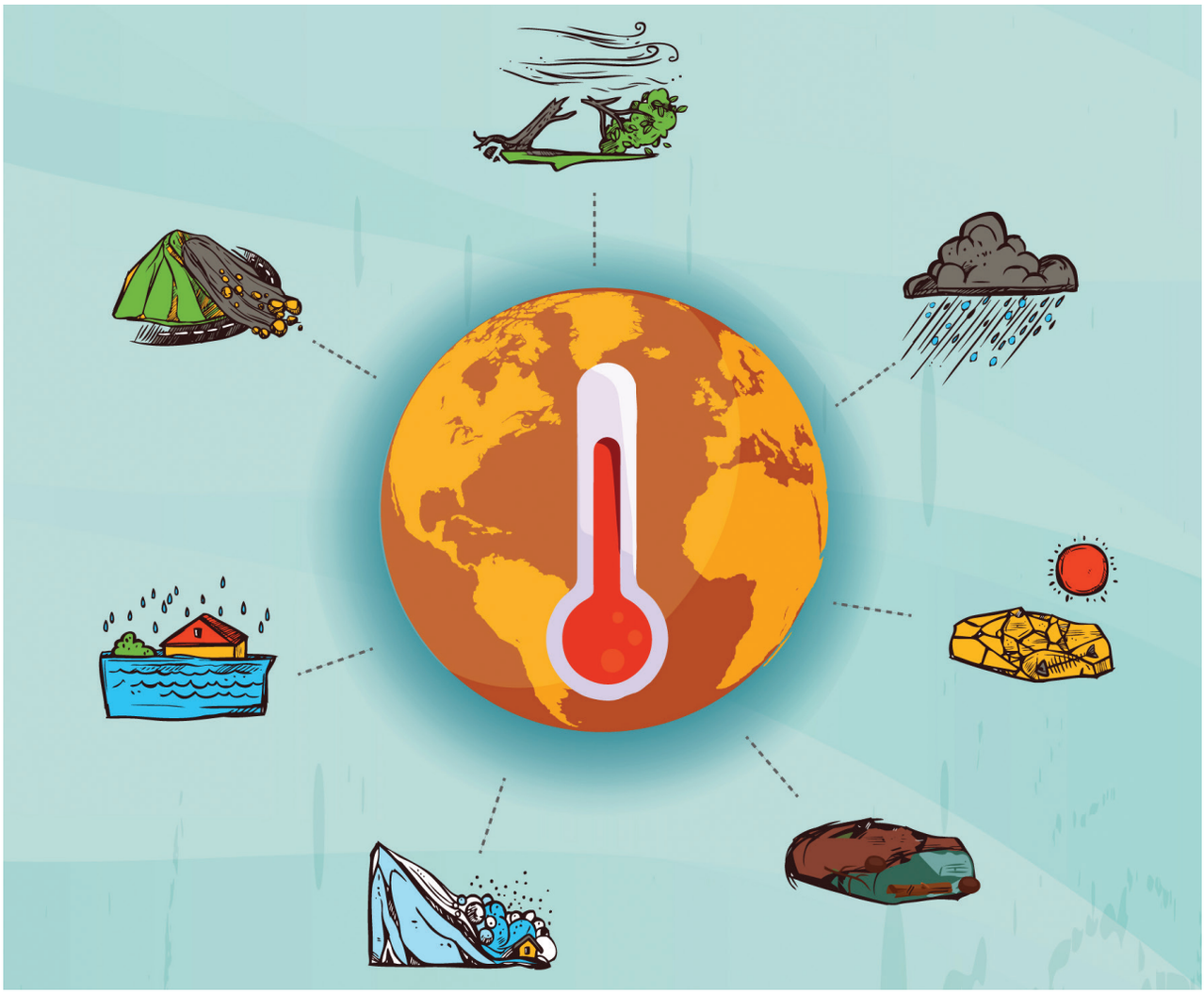


Vakhushti Bagrationi, a great geographer and historian, was the first to describe and evaluate the complex climate of Georgia. About 300 years ago, he described and characterized the nature of Georgia, including all its components and climate.

It is important to note that at that period it was not feasible to carry out instrumental monitoring over the climate. The monitoring processes were not implemented even in Europe; but in Georgia they started since 1844. Though no technical equipment needed for monitoring the climate was available, Vakhushti still managed to provide extremely accurate characteristics of the climate of Georgia. The description was based on sensor method, in other words, personal senses and perceptions. Vakhushti Bagrationi, living in Russia, managed to carry out comprehensive characterization of the climate of Georgia back in 1742 on the basis of factual data and personal observations, provided in his work - “Geography of Georgia”. Terms, applied by Vakhushti while describing the climate of Georgia, are rather interesting: “unbearable”, “kind”, “beautiful”, “wonderful”, “hot”, “breezy”, merry”, “cool”, “rainy” and “snowy”. He was the first one to provide holistic characteristics of diverse climate of Georgia, which later became the basis for the regional climatology of the country and ensured its scientific development to present day. Anthropological irrational activities, carried out in relation to the environment, which are the warrant of material wellbeing, on the other hand cause substantial and most regrettably undesirable changes in the environment, supporting development of negative processes. These processes on their own, with domino effect destroy social-economic systems.

It should be noted that the global climate change is the main and the most important reason for increased frequency of natural disasters. Climate change, which usually takes decades or even longer periods.

DISASTERS CAUSED BY THE NATURAL HAZARDS AND RISK REDUCTION



Proper management of disasters which requires knowledge of primary importance issues is essential for reduction of disaster risks.

The following is a list of major components that guarantee the safe environment of facility.

- General knowledge on extreme natural events and rules of behavioral actions on your part;
- Vocal alarm signal;
- Evacuation plan and relevant movement ways;
- Safe space after evacuation;
- Permanent talks with colleagues on these issues; if possible, practical simulation evacuation or tabletop games.

WHAT WE NEED TO KNOW AND HOW TO ACT IN CASE OF DANGERS

FLOOD

The flood is an overflow and overspill of water from the permanent river bed with subsequent submersion of surrounding area, caused by seasonal heavy and intense rainfall which entails abundant precipitation and snowmelt.

There are almost 26,000 rivers in Georgia; most of them originate in the Caucasus Mountains. Most rivers are characterized by spring floods. For example, the Rioni River basin is most vulnerable to flood risk as well as the Mtkvari, Alazani, Aragvi, Tskhenistskali Rivers.

WHAT WE NEED TO KNOW AND HOW TO ACT AT 3 IMPORTANT STAGES RELATED TO FLOOD

BEFORE THE FLOOD - PREPARATION PHASE

It is important for ensuring proper response

- It is important to make a list of risks and dangers related to kindergarten location;
- Evacuation plan of building drafted by the specialized service, which will be posted in a visible place[1];
- Pre-determined elevated flood evacuation site (if you have received an early warning and there is a relevant place within your perimeter);
- The space allocated within the building itself, such as its roof, or a high building nearby might be an alternative;
- Previously prepared so called first aid kit containing basic medicines to be taken in case of evacuation (keep the bag in the easily and quickly accessible place);
- It is important to constantly clean the area from debris to prevent the accumulation of leaves and other waste material.

DURING THE FLOOD - RESPONSE PHASE

Effectiveness depends on readiness phase. In addition to relevant awareness, knowledge and skills, psychological resilience is important as well

- First of all, it is important to call 112 and use a pre-designed internal alarm signal;
- All doors and windows of kindergarten must be closed;
- Electricity, water and natural gas must be turned off centrally;

1. Depending on severity of a particular extreme natural event, the use of evacuation plan i.e. conduct of evacuation is determined. However, it is unequivocally necessary to post the detailed evacuation plan of building at the permanently visible places within the building.

- If evacuation is not possible, it is necessary to climb on a pre-selected elevated place, and if such a place does not exist, then on the roof of building or ancillary building;

- When on the roof or in any elevated place, it is necessary to use the so-called rescue signal for rescuers, which in daylight would be a colored piece attached to a stick, and any light signal (which is obviously placed in the rescue bag in advance) in the dark. Wait for the rescuers.

AFTER THE FLOOD - RECOVERY PHASE

Local self-government bodies carry out the major functions, you are involved within your relevant competence

- Return to the building is recommended upon full termination of danger;

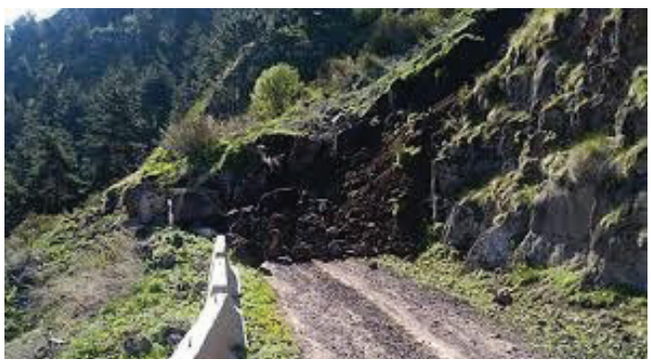
- Ventilation of building is required. Use of electrical appliances and gas is prohibited until ventilating the building;

- Discard the wetted food and drink only the bottled water.

LANDSLIDE

Landslide is a process of sudden soil break-off due to the force of gravity, its movement in the direction of slope inclination and subsequent subsidence/accumulation. It may be said that there are natural and man-made factors contributing to landslide development. For example, abundant precipitation accumulated after heavy rains can cause the landslide subsidence; earthquakes might also become a precondition for the landslides; as for the landslides induced by human activities, the action such as deforestation is the primary cause. Thus, there is a causality between various extreme natural events, which, due to their geographical distribution and nature, might turn into a natural catastrophe.

2 sections of Kakheti - Eastern Caucasus and Gombori ridge are the landslide-prone areas. Aragvi gorge as well as Racha-Lechkhumi, Kvemo Svaneti, part of Samegrelo - hilly stripe, some part of Samtskhe are completely characterized by mudflows and landslides; from this viewpoint, Adjara is one of the most important regions in western Georgia.



WHAT WE NEED TO KNOW AND HOW TO ACT AT 2 IMPORTANT STAGES RELATED TO LANDSLIDES

BEFORE THE LANDSLIDE - PREPARATION PHASE

It is important for ensuring proper response

- Identify the landslide prone zone near the garden and plant trees;
- An evacuation plan that will be posted in a conspicuous place;
- Prepared evacuation bag;
- Awareness of landslide signs such as door and window clogging, cracks in roads.

DURING THE LANDSLIDE - RESPONSE PHASE

Effectiveness depends on readiness phase. In addition to relevant awareness, knowledge and skills, psychological resilience is important as well

- Call 112;
- Prepare for evacuation and leave the building immediately if rapid movement is possible;
- It is necessary to turn off electricity, water and natural gas at central level and close the doors and windows tightly;
- In case of evacuation, take a rescue bag with you.

AFTER THE LANDSLIDE - RECOVERY PHASE

Local self-government bodies carry out the major functions, you are involved within your relevant competence

- There is a risk of flooding after the landslide, so it is important to listen carefully to the warning and be prepared;
- Prior to resumption of operation, it is necessary to conduct a complex inspection of building with the assistance of local self-government bodies.

AVALANCHE

An avalanche is a mass of snow that falls rapidly down from a mountain slope. There are two types of avalanches: wet and dry ones, i.e. avalanches originating from dry/loose and wet snow. In a way, its strength and the corresponding destructive effect depend on this aspect. Avalanches can also result from certain natural or anthropogenic causative factors such as, for example, combination of natural conditions such as terrain, vegetation, solid atmospheric precipitation on the slopes, accumulated mass of snow, etc.

There are various avalanche forming/triggering factors, for example explosions or human movement.

It is known that Georgia is a mountainous country and therefore the geography of avalanche spreading is wide. In this regard, the highlands of Adjara; Svaneti etc. are the most vulnerable areas.

WHAT WE NEED TO KNOW AND HOW TO ACT AT THREE IMPORTANT STAGES RELATED TO AVALANCHES

BEFORE THE AVALANCHE - PREPARATION PHASE

It is important for ensuring proper response

- If the kindergarten building is located near the avalanche-prone area, be on the lookout for weather components such as abundant precipitation, strong winds, rapid rise in temperature ... The major active periods are spring and summer;
- Keep a rescue/evacuation bag prepared.

DURING THE AVALANCHE - RESPONSE PHASE

Effectiveness depends on readiness phase. In addition to relevant awareness, knowledge and skills, psychological resilience is important as well.

- Call 112;
- Immediately leave the dangerous place and move to a safer area;
- If you cannot escape the avalanche, take a horizontal position with head located in the direction of avalanche movement;
- Bend, bring your knees to your abdomen and hold your legs tightly, do not move unnecessarily and do not shout (take the form of a snowball).

AFTER THE AVALANCHE - RECOVERY PHASE

Local self-government bodies carry out the major functions, you are involved within your relevant competence

- In all cases, after the avalanche you should consult a doctor;
- Prior to resumption of operation, it is necessary to carry out the complex inspection of building with the help of special services;
- It is advisable to plant many trees in the surrounding area.

STRONG WIND

Wind is the movement of air masses, it has some speed and direction. The strength of wind and consequently - its destructive effect depend on the amplitude of atmospheric pressure, which contributes to forming a strong wind (storm, snowstorm, whirlwind).

Western and eastern parts of Georgia are characterized by strong winds which can cause significant material damage to population, cut down trees, take away things, damage houses, destroy harvest, generate big waves at sea and cause plenty of other undesirable effects.

WHAT WE NEED TO KNOW AND HOW TO ACT AT THREE IMPORTANT STAGES RELATED TO STRONG WIND

BEFORE THE STRONG WIND - PREPARATION PHASE

It is important for ensuring proper response

- At the beginning of working week, read the weather forecast for week to see if any strong winds are expected;
- In the kindergarten yard, carefully attach all the items or take them into the building;
- Reinforce the doors and windows;
- Pre-select your protection area (basement of building or middle/windowless room).

DURING THE STRONG WIND - RESPONSE PHASE

Effectiveness depends on readiness phase. In addition to relevant awareness, knowledge and skills, psychological resilience is important as well

- Turn off electricity and natural gas in the building;
- Lock the doors and windows tightly and move away from them;
- Enter a pre-selected location (basement or windowless room) and wait for the wind to end there;
- Carry a rescue bag with you.

AFTER THE STRONG WIND - RECOVERY PHASE

Local self-government bodies carry out the major functions, you are involved within your relevant competence

- In case of evacuation, take the evacuation bag with you and go to the shelter in observance of rules;
- It is necessary to enter the building only after checking it (including doors and windows) for strength by you or preferably by the specialists;
- Avoid trees, electric poles and various dangerous objects located in the yard and along the outside perimeter.

DROUGHT

Drought is a prolonged decrease in precipitation in certain particular area. At such times the air temperature is usually very high and therefore it is unbearably hot.

It should be noted that drought can occur throughout almost the entire territory of Georgia, although in this regard the eastern part (and in particular Kakheti region) stands out. Drought primarily damages plants and various agricultural crops, endangering the lives of animals and birds. It is also dangerous for human beings who do not take appropriate measures to avoid its negative impact. Heat stroke poses a threat to human health.

WHAT WE NEED TO KNOW AND HOW TO ACT ON THREE IMPORTANT STAGES RELATED TO DROUGHT

BEFORE THE DROUGHT - PREPARATION PHASE

It is important for ensuring proper response

- Keep some water reserve in the building and renew it permanently, use water rationally;
- Prepare the building appropriately for expected heat conditions, keep additional sunshades for the windows or make special shutters;
- Equip the building with cooling equipment.

DURING THE DROUGHT - RESPONSE PHASE

Effectiveness depends on readiness phase. In addition to relevant awareness, knowledge and skills, psychological resilience is important as well.

- Drink plenty of water slowly;
- Wear light-colored clothing and if you go out, be sure to wear a hat;
- The best option is staying indoors in cool conditions;
- In case of very strong drought, it is possible to temporarily close the garden in agreement with local authorities.

AFTER THE DROUGHT - RECOVERY PHASE

Local self-government bodies carry out the major functions, you are involved within your relevant competence

- In case of sunburn, call the ambulance and provide first aid before the ambulance arrives;
- If necessary, contact the local government which will assist you with technical recovery works or in some other ways.

HAIL

Hail is a solid atmospheric precipitate composed of ice chunks of different sizes. Hail mostly falls in warm periods, it is formed in cumulonimbus clouds. It should be noted that hail is a very typical phenomenon in Georgia, it damages agricultural lands and creates serious economic problems for the population. Kakheti region is especially vulnerable to hail.

WHAT WE NEED TO KNOW AND HOW TO ACT AT THREE IMPORTANT STAGES RELATED TO HAIL

BEFORE THE HAIL - PREPARATION PHASE

It is important for ensuring proper response

- Define hail risks in advance and get prepared accordingly;
- It is possible to use additional protective equipment for building, blinds etc.;
- In the yard, you can construct in advance some kind of additional roofed building to be used as a shelter;
- Have a rescue bag prepared.

DURING THE HAIL - RESPONSE PHASE

Effectiveness depends on readiness phase. In addition to relevant awareness, knowledge and skills, psychological resilience is important as well

- Do not leave the building, properly lock the doors and windows and wait through the end;
- It is advisable to remain in the middle/ windowless room while staying in the building in order keep clear of the hail which might breaking windows in case if you do not have the so-called blinds ;
- If it starts hailing while you are in the yard, immediately enter any kind of building or place any solid object on your head, avoiding electric poles and trees

AFTER THE HAIL - RECOVERY PHASE

Local self-government bodies carry out the major functions, you are involved within your relevant competence

- If you have to evacuate, take a rescue bag with you;
- Carefully inspect the building for proper functioning of electricity or natural gas supply sources;
- If required, ask 112 and local authorities to help you with the recovery phase.

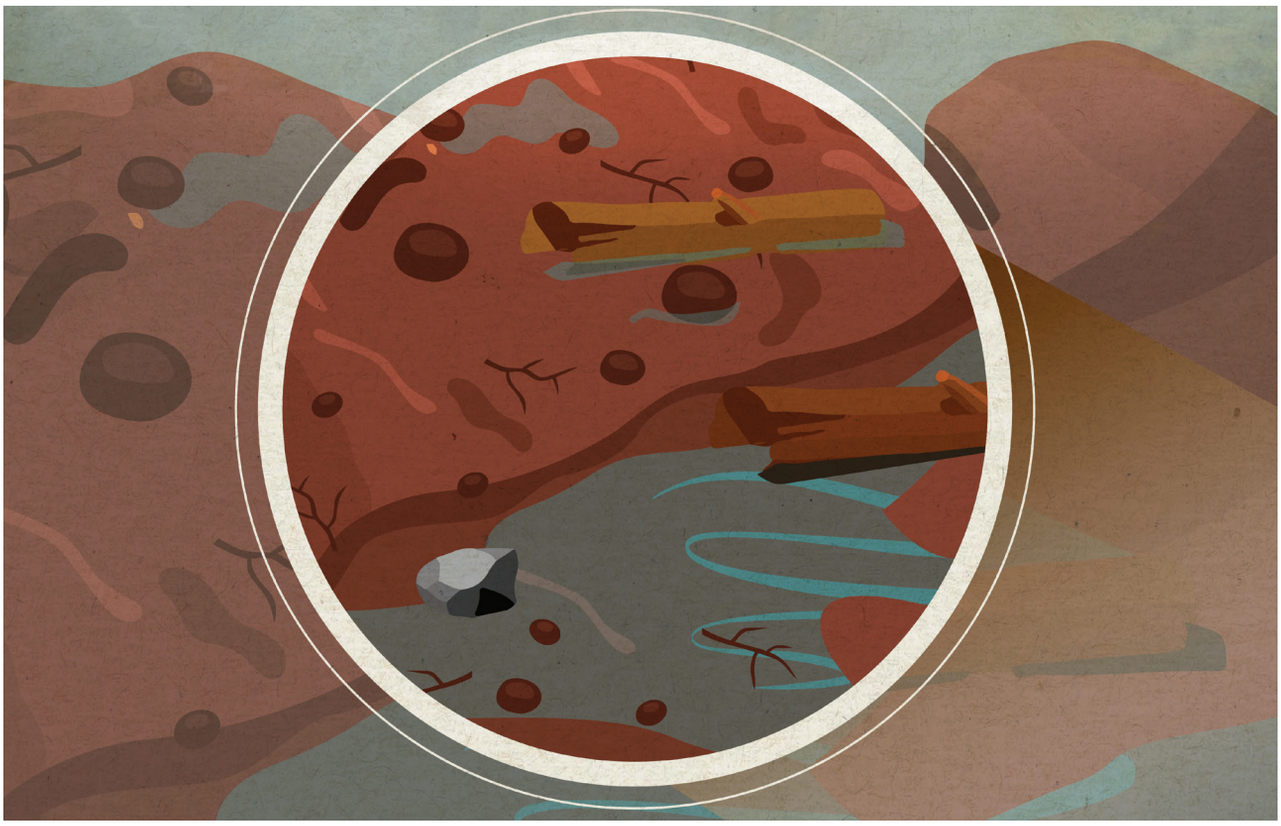
MUDFLOW

Mudflow is a process of formation in the riverbed and subsequent movement of large stone/rubble and stone/mud masses that suddenly originates within the mountain rivers. Although normally resulting from intense rains, it can also be caused by the short-term downpour.

During the mudflow, the stones, rubble, trees, various solid materials and mountain debris fall into the river. (if the flood and landslide are developed within the same time and space and the landslide mass reaches the river bed, a mudflow might occur).

As a rule, mudflow-prone areas are known in advance, and therefore the relevant locations are fortified with artificial dams or other types of bank protection works are carried out in advance. By the end of XX century, there were 2750 mudflow-transformable river basins reported in Georgia. 2 million hectares of entire country were in a mudflow-prone zone; mudflows pose danger to railways (300 km) and highways (1500 km); the impact of these streams periodically disables irrigation facilities and agricultural lands; it poses a great danger to the cities and towns such as Tbilisi, Telavi, Kvareli, Lagodekhi, Sagarejo, Borjomi, Lentekhi, Oni, Tsageri, Mestia, Akhaltsikhe, Adigeni, Mtskheta and hundreds of rural settlements. Annual damage caused by the mudflow to the country averages 100-120 million Dollars.

Depending on severity of particular extreme natural event, the use of evacuation plan is determined. However, it is unequivocally necessary for a detailed evacuation plan of building to be permanently posted at visible places within the building.



WHAT WE NEED TO KNOW AND HOW TO ACT AT THREE IMPORTANT STAGES RELATED TO DOWNPOURS

BEFORE THE MUDFLOW - PREPARATION PHASE

It is important for ensuring proper response

- Find out in advance if there is any risk of mudflow near your facility;
- Have a rescue/emergency bag with you;
- If the early warning is received and you are planning an evacuation, turn off the gas and electricity.

DURING THE MUDFLOW - RESPONSE PHASE

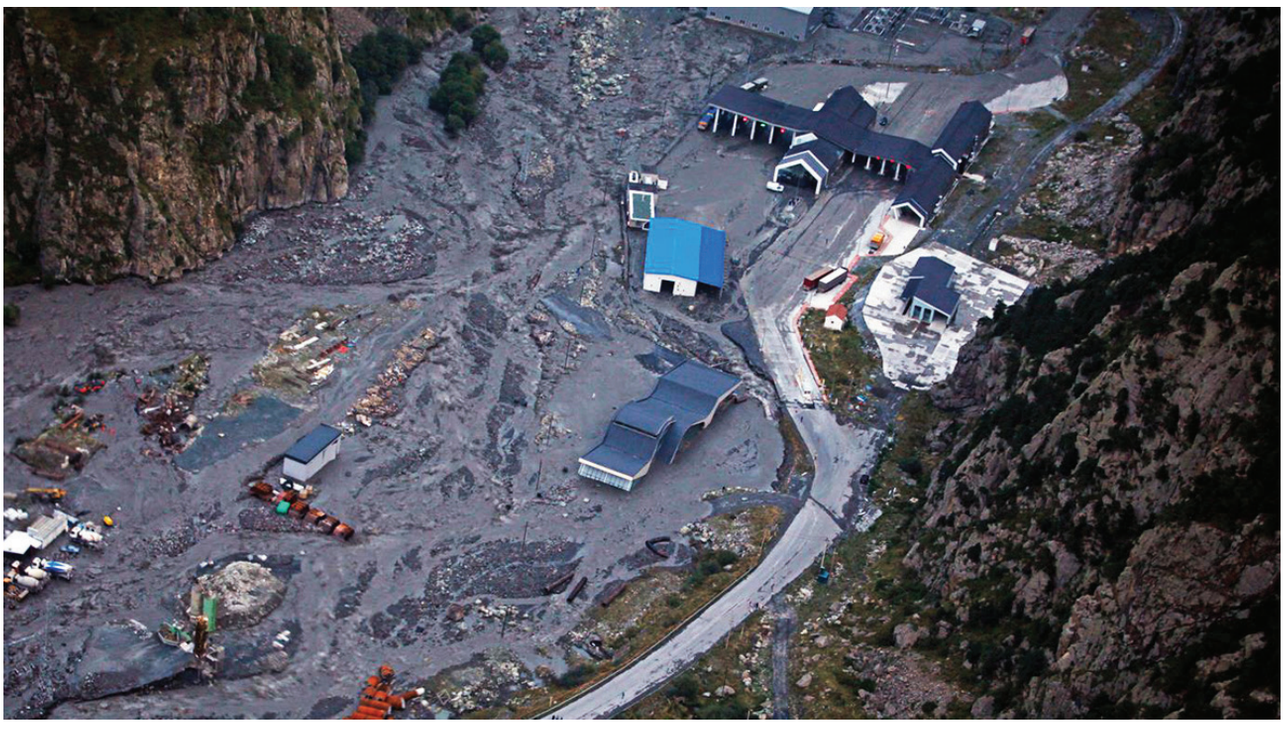
Effectiveness depends on readiness phase. In addition to relevant awareness, knowledge and skills, psychological resilience is important as well

- Call 112;
- Try to evacuate to a safe place in accordance with the pre-established evacuation plan, or wait for the rescuers at an elevated spot;
- Remember, it is almost impossible to save a person trapped in a mudflow.

AFTER THE MUDFLOW - RECOVERY PHASE

Local self-government bodies carry out the major functions, you are involved within your relevant competence

- Assist the victims and provide first aid within your competence until the rescuers arrive;
- Resumption of building functioning is allowed only upon its inspection by the specialists.



DISASTER MANAGEMENT PHASES AND KEY TERMS

RESPONSE

The emergency assistance and state support provided during the disaster or immediately upon its completion, designed to save people's lives, reduce the damage to their health, ensure public safety and meet the basic needs of affected population.

RECOVERY

Restoration and improvement of auxiliary structures and facilities, livelihoods and living conditions for the disaster-affected community, which also includes the efforts designed for reduction of disaster risk factors.

MITIGATION

Mitigation includes measures designed for reduction of limiting the negative impact of threats and related disasters. In many cases, the negative consequences of threats cannot be completely avoided, although their scale and severity may be significantly reduced through the various actions.

PREVENTION

Prevention is the complete avoidance of threats and negative consequences of related disasters. The term “prevention” expresses the concept and intention of avoiding the potential adverse effects through pre-emptive measures.

PREPARATION

Acquisition of knowledge and capacity building by government agencies, communities, individuals and organizations specialized in issues of response and recovery measures, designed for ensuring effective anticipation and response to expected, imminent or already identified hazardous events or circumstances and providing further recovery

EMERGENCY SITUATION

Significant disruption to functioning of community or society involving large-scale human, material, economic or environmental losses and/or impacts which exceed the ability of affected community or society to cope with its own resources.

RISK

Combination of probability of event and its negative consequences.

DANGER

Dangerous event, substance, human action or situation that may lead to death, body injury, disease or deterioration of health, property damage, loss of livelihood and disruption of services, breakdown of socio-economic systems and environmental damage.

DISASTER

Extreme natural event, the scale of which causes significant disruption to functioning of community or society, involving large amounts of human, material, economic or environmental losses that exceed the ability or capabilities of affected community or society to cope with its own resources.

VULNERABILITY

Vulnerability is defined as the characteristics and circumstances peculiar to a community, system or property that makes them vulnerable to harmful effects of a threat. There are many aspects of vulnerability caused by material, social, economic and environmental factors.

EVACUATION PLAN

The evacuation plan is elaborated by the local emergency service. It shows the following: the stairwells, elevators and hall adjacent to elevator, rooms, household and amenity facilities, corridors, balconies, outdoor stairs as well as all the doors located at the stairwell, at the hall adjacent to the elevator and along the evacuation route. The names of rooms should be placed directly on the floor plan or numbered and displayed in the right corner of drawing; the door should be shown in the open position.

If some of the exits are locked up during the operation, the door fences are shown in the closed position on the evacuation plan, and the key storage is indicated by the following inscription - “Box with the key to the outer door”. If the building is equipped with external fire ladder, the inscription “Exit to the fire ladder” is placed on the evacuation plan.

On the floor evacuation plan, the main and emergency evacuation routes are marked with solid green and green dot (dashed) lines, respectively. These lines should be twice as thick as the building drawing lines; the main evacuation routes are directed to the stairwells equipped with external exits, as well as to the stairs leading to the ground floor. If two stairwells are equally important in terms of fire and smoke protection, then the main evacuation line must be directed to the nearest stairwell. Evacuation route lines must be coming out of each room and ending at the exit of a safe place or directly outside the building.

Evacuation vectors do not intersect, they ensure passage of equal number of persons in the shortest amount of time. The floor plan is marked with special symbols to indicate the location of fire alarm buttons, telephones, fire hydrants and fire extinguishers. The above symbols must comply with international standards. The characters are marked clearly. Character definitions are provided under the evacuation plan in Georgian and English. The height and width of text letters are not less than 7 mm and 5 mm, respectively. The graphic part of evacuation plan indicates the telephone numbers of fire and rescue service, the head of organization, duty personnel and security service as well as the explication of special markings (symbols). The floor plan should not be overloaded with unnecessary details. The dimensions of graphic part of evacuation plan must be 297 x 420 mm;

The evacuation plan is used in case of necessity of leaving the building immediately at emergencies.

ACTIVITIES

N1 ACTIVITY EARTHQUAKE „SEISMOMETER “

Materials required:

Cardboard box, disposable cup, adhesive tape, thread/rope, marker, paper .

Stages of activity implementation:

At the bottom of disposable cup, the children make a small hole and insert the marker so that its tip is slightly away from the bottom of the cup. The cup is hung with a thread/rope on one of the box sides. The cup should hang evenly. The paper is placed under the tip of the marker.

Instruct three children to do the following: ask one of the children to shake (first slowly and then – more vigorously) the table for about 20-30 seconds. In this way, the child provides an earthquake simulation. The second child draws with even motion a long strip of paper placed under the marker. The third child represents the duration of earthquake with even applause (at this time, you count up to 20-30).

Reflection:

Upon the “the completion of earthquake”, ask the children to analyze the earthquake “cardiogram” depicted on the seismograph tape. The children should describe how the broken lines on a piece of paper were drawn in cases of weak and strong table fluctuations.

N2 ACTIVITY FLOOD „EVACUATION DURING THE FLOOD”

Required materials:

Lantern, batteries, water bottle, biscuit pack, radio, telephone, rope, paper, pen, toys, books, backpack, essential medicines - iodine, alcohol, cotton, gauze, bandage; pencils, notebooks, wallets, etc.

Stages of activity implementation:

Arrange the items collected by you on the table. Ask the children to imagine which items would be taken to the temporary shelter in the event of a flood. Which items will be necessary for them and why? Which items would they add? Discuss together what each item would be used for and which ones are really necessary during the evacuation.

N3 ACTIVITY MUDFLOW „ESCAPE THE MUDFLOW”

Stages of activity implementation:

Introduce children to the rules of safe behavior during the flood. Ask them to think about where they would shelter themselves during the flood (at home or outside)? Play the scene in the room and outside, as well as the rules of behavior when in the yard.

In the first case, when children have to go upstairs, how they are supposed to leave the room - turn off electrical appliances, get out of the room in an organized way, and so on. In the second case, the children have to find an elevated place in the yard and go up there. Tell the children that they must find shelter in high places during the real mudflows as well.

Reflection:

Ask the children to discuss why it is essential that they know the rules of safe behavior. How will this knowledge help them?

N4 ACTIVITY

LANDSLIDE „PLANT THE TREES TO PREVENT LAND-SLIDES”

Required materials:

Tree seedlings, shovels.

Stages of activity implementation:

Explain to children how dangerous the landslides are, why they occur and how can be avoided, the reasons why it is necessary to plant trees on mountain slopes, take care of forests, etc.

It is preferable to carry out this activity in the fall or in the spring. Take the kids outside and plant some seedlings in the kindergarten yard.
Ask the children to draw their activity - “I plant trees to prevent landslides”

N5 ACTIVITY AVALANCHE „WE ARE MAKING THE WARNING SIGNS”

Required materials:

Container, snow or artificial snow/cotton, cardboard, colored pencils, scissors, glue, small toy figures: cars, houses, dolls, etc.

Stages of activity implementation:

It is recommended to perform this activity in winter, in snowy weather. Inform the children about occurrence of avalanches and teach them to select a safe place during the avalanche.

Make avalanche warning signs with the children. Ask them to create a mountainous terrain out of snow and play with toy figures. Help children with placing the warning signs in “avalanche-prone zones”

Reflection:

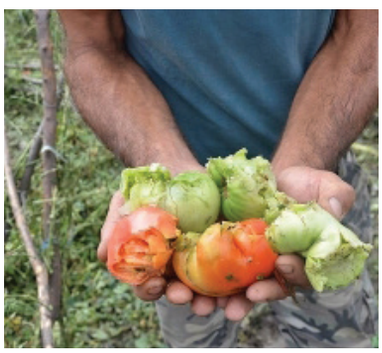
Discuss with children why the warning signs were placed in specific places.

N6 ACTIVITY HAIL POEM "WHEN IT'S HAILING"

When it's hailing,
The heavens are blackening,
- See what you have done!
As though threatening us.
It's really dangerous
To face it outside
Its rattle is heard
On the roof tiles.
And look how beautiful it is-
Dazzling-white, like a crystal,
Some – the size of of bead,
Some - the size of fist.
Grandma is
Huffing and puffing,
Grandpa gets angry, saying:
- Is this really the time for it?
The grape vines will be spoiled.
But it does some good too -
Beats the nuts off walnut tree.
This is what the hail
Is like in our village. [2]

Reflection:

Read the poem to the children and ask them to pay attention to positive and negative aspects of hail. Use pictures and illustrations. Why is hail dangerous, what does it damage? What good can hail do? Allow children to freely express their own assumptions. Based on the poem and their own experiences, have children describe the physical characteristics of hail. Let them make a guess: what hail might turn into?

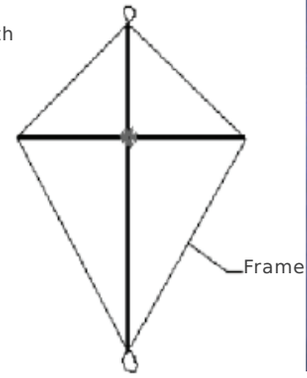


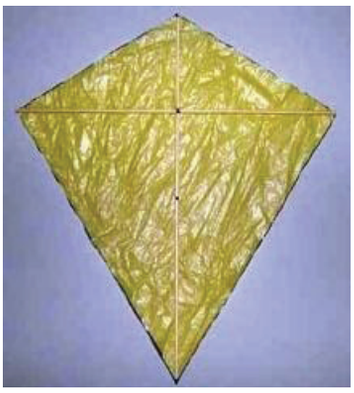
2 https://matekari.wordpress.com/2018/07/14/%E1%83%A1%E1%83%90%E1%83%91%E1%83%90%E1%83%95%E1%83%A8%E1%83%9 5%E1%83%9D-%E1%83%9A%E1%83%94%E1%83%A5%E1%83%A1%E1%83%94%E1%83%91%E1%83%98-250-300/

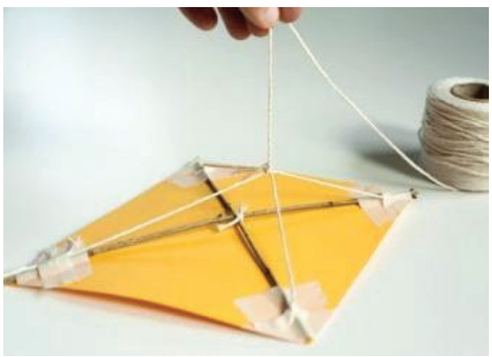
N7 ACTIVITY STRONG WIND ACTIVITY „KITE”

Required materials:

Two wooden rods/sticks (approx. 90 and 60 cm in length), glue/adhesive type, paper/polyethylene bag, thread/rope; for painting and decorating the kite: colored pencils markers, ribbons, straps and scissors.







Stages of activity implementation:

Take two sticks and place them on top of each other as shown in the picture. The long stick will be intersected at third of its length, and the short one will be attached with the middle part. Wrap the thread around the ends of the sticks so that the frame is fastened. Place the frame on paper/polyethylene and draw the outline. Cut out and fasten it with adhesive tape/glue to the frame. Make sure that the paper/polyethylene is securely attached to all sides of frame. Then make a loop as shown in the picture. Decorate and color the kite.

Reflection:

Ask the children to observe the kite movements. When does it go up and down? On what does such a movement of kite depend? Discuss together and draw some conclusions.

N8 ACTIVITY DROUGHT ,,COLOR OF CLOTHES AND HEAT”

Required materials:

2-3 clear glasses; black, white and colored papers; water thermometer.

Stages of activity implementation:

Together with children, pour the equal amounts of water into two glasses (you are not limited in quantity). Wrap the glasses in white and black papers (in addition, it is possible to wrap other glasses with colored papers as well). Put the glasses in the sun for about an hour. Give the children a water thermometer and ask them to measure the water temperature in each of glasses.

Reflection:

Ask the children to analyze the obtained results. Why do the water temperatures differ in two glasses? What caused such an outcome? Explain to the children that the dark color heats up more, while the light color, on the contrary, protects against heat. Therefore, in the summer, in the hot weather they should wear light-colored clothing and hats.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RIV.ENGURI
RIV.KHOBISTSKALI
RIV.RIONI
RIV.SUPSA
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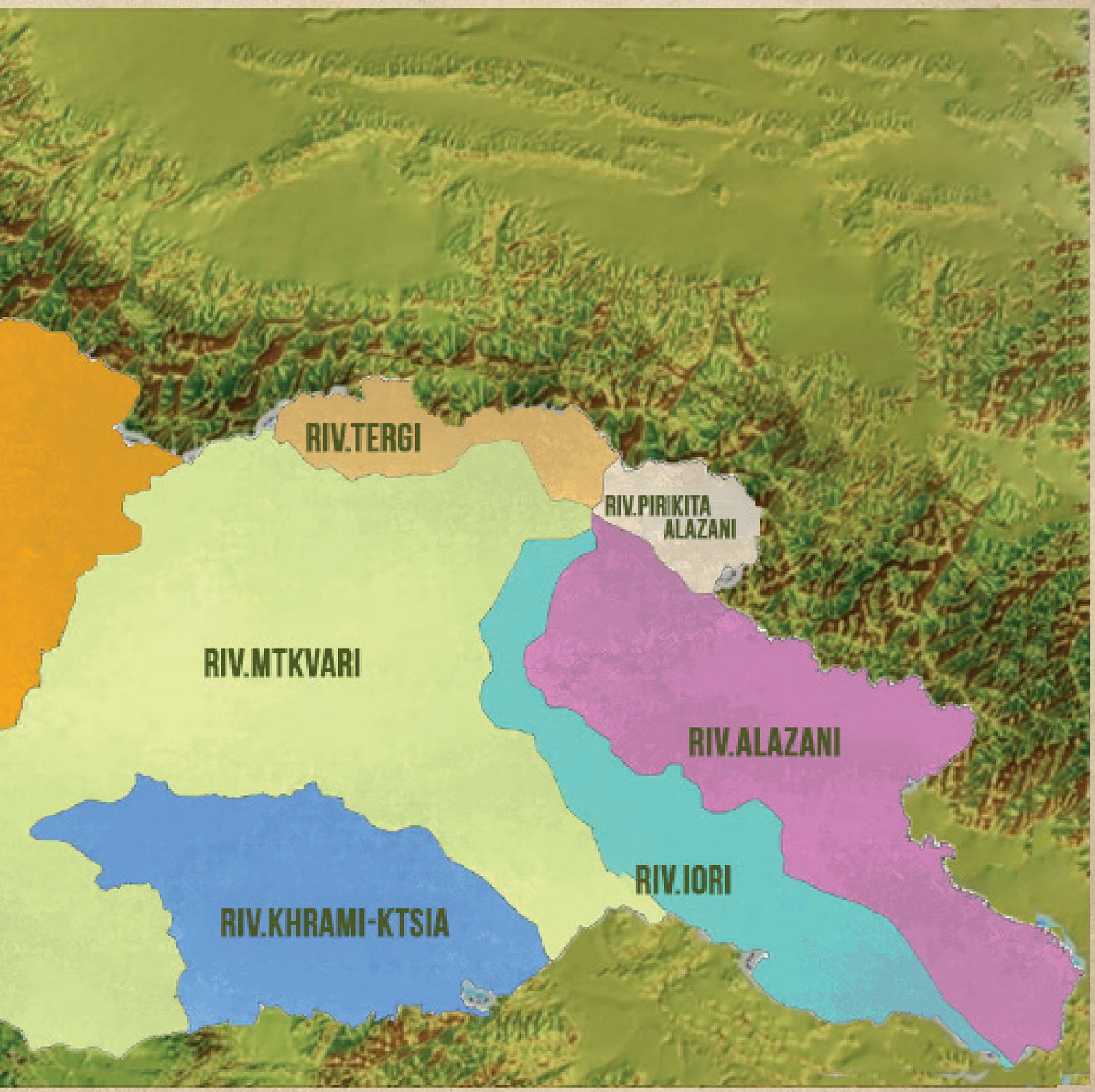
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