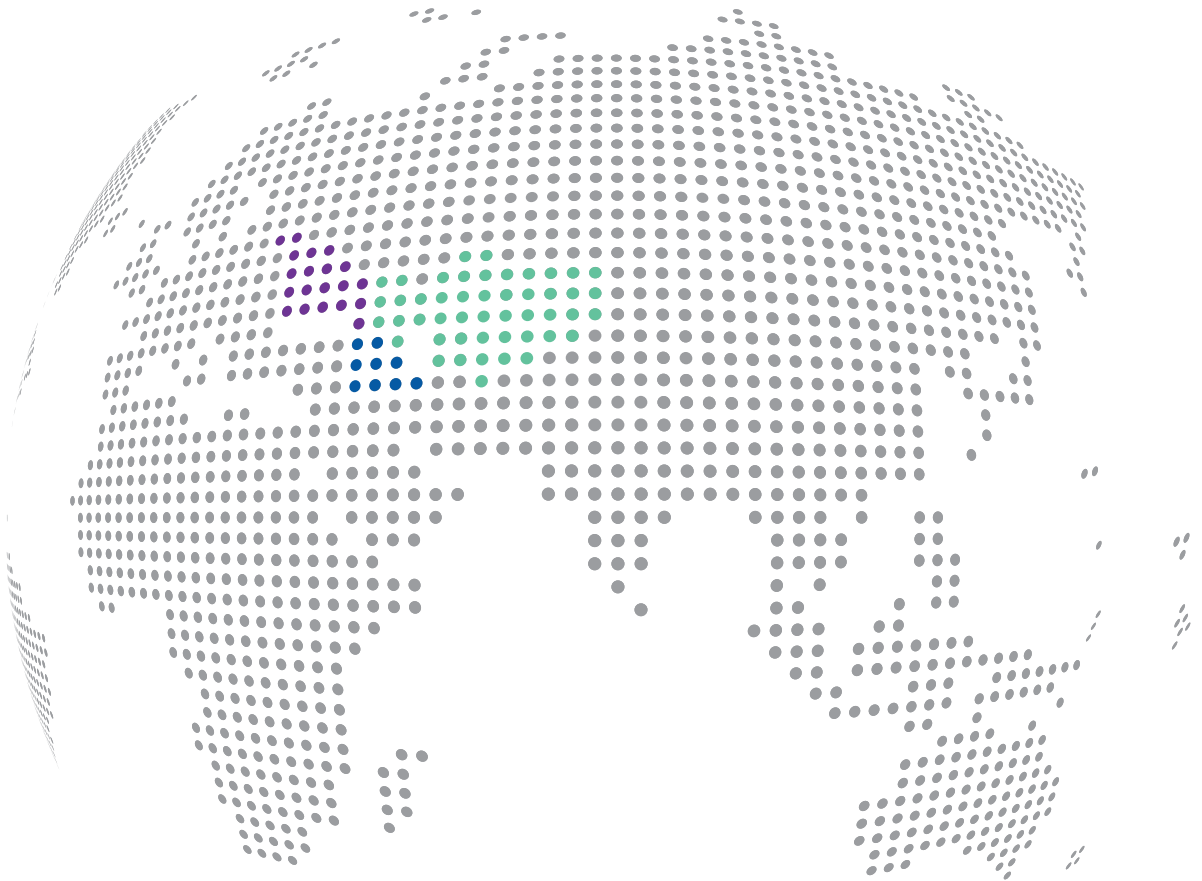




ENVSEC
Environment & Security

CLIMATE CHANGE AND SECURITY



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THE ENVIRONMENT AND SECURITY INITIATIVE – A PLATFORM FOR CO-OPERATION

The Environment and Security (ENVSEC) Initiative – comprising the Organization for Security and Co-operation in Europe (OSCE), the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the United Nations Economic Commission for Europe (UNECE) and the Regional Environmental Center for Central and Eastern Europe (REC) – was launched in 2003 at the Fifth Environment for Europe Ministerial Conference in Kiev, Ukraine to jointly strengthen national capacities, regional co-ordination mechanisms and international co-operation for environment and security risk reduction. Since then, the Initiative has developed into a unique multi-agency programme operating in four regions: Eastern Europe, South Eastern Europe, the South Caucasus and Central Asia. The ENVSEC Initiative provides holistic solutions to environmental challenges including to security challenges induced by climate change.

Disclaimer

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CLIMATE CHANGE AND SECURITY

LINKAGES BETWEEN CLIMATE CHANGE AND SECURITY

Once only considered as an “environmental issue”, climate change is increasingly being included as an inherent element in national and international security agendas. It is seen as a “threat multiplier”, exacerbating existing threats to security and increasing environmental stress, adding to pressures that can push the responsive capacities of governments to their limits.

Climate change can impact security in a number of ways. Increasing competition over access to natural resources can lead to conflict situations if no effective dispute resolution mechanisms are in place. Increasing frequency of climate-induced extreme weather events and disasters can aggravate political instability and put livelihoods at risk, which in turn can push people to migrate on a large scale or to turn to illegal sources of income. Disruption of food production and

increasing food prices may result in social instability, violent protests and civil unrest. Impacts on energy production caused by higher temperatures and lower precipitation, as well as threats to energy production and transmission infrastructure from extreme weather events put supply chains and energy security at risk. Increasing demand for water and an unreliable supply increase pressure on existing water governance arrangements and can complicate political relations, in particular in transboundary basins already affected by tensions.

Climate change co-operation and climate diplomacy offer means to address such issues and are good entry points for contributing to preventing tensions and strengthening trust. This may result in significant benefits for broader relations between countries.

REGIONAL PARTICIPATORY ASSESSMENTS OF CLIMATE CHANGE AND SECURITY RISKS

This brief offers insights into the security implications of climate change in vulnerable geographic areas. These climate change and security hot-spots were identified through regional participatory assessments in Eastern Europe, Central Asia and the Southern Caucasus¹ conducted by the ENVSEC Initiative. The assessments were part of the ENVSEC project “Climate Change and Security in Eastern Europe, Central Asia², and the Southern Caucasus” which was funded by the European Union Instrument for Stability and the Austrian Development Agency and had the overall goal to identify and explain how climate change may exacerbate threats to security, and to propose effective response measures.

The assessments resulted from a combination of desk research and extensive multi-stakeholder consultations. They consider the perception of 552 national stakeholders (232 women, 320 men) who took part in national and regional consultations. The analysis also included political, socioeconomic and environmental conditions as well as governance issues as underlying factors. The assessments consider a broad range of perceived risks and context-specific security concerns including:

- Livelihood insecurity (urban and rural)
- Human and economic losses
- Additional pressure and competition over scarce natural resources
- Seasonal or persistent water shortages and possible energy and water insecurity
- Damage to infrastructure; industrial safety concerns, including stability of tailings
- Diminished ecosystem services
- Biodiversity losses and possible loss of fish stocks, pastures and genetic resources
- Increased social tensions and conflicts
- Changes in trade patterns and economic impacts
- Increased rates and wider geographic spread of diseases, and declines in human health
- Loss of sources of income and increased poverty or diminished well-being
- Decreased physical security and possible growth in crime

1 The three regions, Eastern Europe, Central Asia and the South Caucasus, include the following 11 countries: Belarus, Moldova and Ukraine in Eastern Europe, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan in Central Asia and Armenia, Azerbaijan and Georgia in the South Caucasus.

2 The Government of the Republic of Uzbekistan does not associate with the preparation of the regional assessment, including the information, positions and conclusions highlighted in the regional assessment, with national policy, processes and priorities

ASSESSMENT OF CLIMATE CHANGE AND SECURITY HOTSPOTS

Climate change and security hotspots are identifiable in geographic terms, and are characterized by ongoing tensions, environmental concerns or both. In each of these hotspots, climate change through one or more pathways is expected to undermine social or economic patterns, threaten infrastructure or livelihoods, or compromise security by exacerbating political or social tensions, conflicts or instability. Areas with weak institutions or lacking the effective mechanisms for transboundary environmental and security co-operation are especially vulnerable.

The identified hotspots reflect the judgement of the authors of the assessment and the stakeholders as well as the outcomes of the national and regional consultations conducted in 2014 and 2016.

THE MAIN FINDINGS OF THE THREE REGIONAL ASSESSMENTS ARE PRESENTED BELOW.

REGIONAL OUTLOOKS ON CLIMATE CHANGE AND SECURITY FOR EASTERN EUROPE, CENTRAL ASIA AND THE SOUTH CAUCASUS: MAIN TRENDS

EASTERN EUROPE

In **Eastern Europe**, climate change may exacerbate environmental, economic, political and social challenges, and additional climate stress on water resources and on the agriculture and energy sectors is likely to have consequences for individual countries and for the region as a whole. In many cases, for example, when regional climate risks such as low-water years and droughts disproportionately affect densely populated areas that are already marginalized, security concerns may ensue. The countries of Eastern Europe will not face the severe climatic changes that high mountain countries or islands will face, but the changes are nevertheless likely to carry implications for all areas of daily life. Ultimately, climate change may weaken security in such sectors as agriculture, energy and water, and may pose challenges to national security. The climate change implications for human security are likely to become more prevalent over time.

The countries in Eastern Europe took an active part in preparation of the new global climate agreement and contributed to it by submitting Intended Nationally Determined Contributions (INDCs) to the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat. Belarus and Ukraine ratified the Paris Agreement in September 2016. Moldova ratified the Paris Agreement in May 2017.

The Republic of Belarus has developed a number of legal and policy frameworks for addressing issues related to climate change and a wider set of the sustainable development agenda (e.g. the State Programme on Mitigation Actions in 2013–2020, the National Strategy for Sustainable Development in the Republic of Belarus until 2030, and the Concept of the Law on Climate Protection). A strategy on adaptation to climate change in the forest sector and in 2015 the Concept of the Strategy on adaptation to climate

change in the agricultural sector of Belarus were elaborated within the EU Clima East project. The elaboration of a National Strategy on adaptation to climate change is under discussion. Climate change adaptation activities in Belarus include water management projects on the Dnieper, Neman and Pripyat rivers.

The Republic of Moldova has developed and adopted a National Climate Change Adaptation Strategy, and is initiating the integration of climate change issues into other existing sectoral strategies. After the Cancun Climate Change Conference, the Republic of Moldova formulated national adaptation plans that identify the country's medium- and long-term adaptation needs, and is working on their implementation. Additionally, the Association Agreement between the Republic of Moldova and the EU, ratified in 2014, may strengthen the co-operation on environmental matters, including on climate change. The Republic of Moldova Environmental Strategy 2014-2023 pays special attention to mitigation and adaptation to climate change in all sectors of the national economy.

According to the Law on National Security of Ukraine, the environment is a part of national security. Ukraine's National Council of Security and Defense has held several special sessions on environment, climate change and security and it continues to monitor impacts of processes related to climate change and national security.

As the most recent milestone amongst some 70 legal acts related to climate change and security, the State Climate Policy Concept by 2030 was adopted by the Ukrainian Parliament in late 2016. It outlines several plans for development and implementation of the mid-term strategy of low-carbon development of Ukraine, a state risk management system and the mid-term strategy for adaptation to climate change.

Two drafts of the National Adaptation Plan were prepared in Ukraine, but the lack of financial resources for implementation remains an obstacle to its follow-up. In 2012, the Plan of Urgent Adaptation Actions was adopted and some of the measures were implemented. Like in Moldova, the Association Agreement with the EU provides opportunities for Ukraine to strengthen climate action both in terms of mitigation and adaptation.

CENTRAL ASIA

In **Central Asia**, climate change will put additional stress on water resources, agriculture and the energy sector and will have consequences for individual countries as well as the region as a whole.

Water is a key natural resource in the region and water management is critical, especially in cases of transboundary water resources. Over the medium term (2030-2050), population growth and economic development are likely to increase demand for water and land resources in Central Asia. Climate and water projections show a sufficient supply for the next 10-15 years, but between 2030 and 2050 the region is expected to pass the peak of water availability in many medium and small rivers across the interior and southern areas.

In the long term, the rate of climate change and the severity of its consequences, coupled with population dynamics, and socioeconomic development, will be among the main factors that determine peace and prosperity.

The mountains are particularly vulnerable to climate change; this is where melting glaciers and permafrost disrupt water regimes and threaten ecosystems, where natural disasters are more prevalent and more damaging, and where poverty is higher. In dry and low-water years, competition for pastures and local water resources increases, and water diversions that disadvantage others may lead to tensions. The situation in the mountains as well as in densely populated areas and the southern borders of Central Asia, warrant ongoing attention.

In densely populated areas many people may be at risk of food insecurity and the effects of heatwaves, especially in places with competition for natural resources.

Large-scale labour migration, in particular of male and working-age youth, increases the stress on most vulnerable groups including women, children and elderly who stay behind. They are exposed to crop failures, extreme weather and natural disasters, which tend to increase due to climate change and they have less capacity to respond to such climate change impacts.

All countries of the region have developed national strategies and actions plans on climate change and for the development of low-carbon economies, and have launched projects on mitigation and adaptation. With regard to climate change mitigation, Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan submitted their Intended Nationally Determined Contributions to the United Nations Framework Convention on Climate Change in 2015, and through this process elevated climate change discussions to the highest policy levels.

Beyond these efforts to address climate change and its impacts, so far climate change has not been included in any of the national security strategies of the countries of the region.

SOUTH CAUCASUS

In the **South Caucasus** region climate change is clearly evident and the region is prone to a range of hazards including landslides and floods, which are exacerbated by climate change, and which can result in serious damage to infrastructure, casualties and economic losses.

Armenia, Azerbaijan and Georgia have all developed national security strategies and although none of them considers climate change as an explicit threat to national security, protection against natural and man-made disasters as well as the implementation of sound environmental practices, are recognized as important factors in ensuring people's safety and, on a larger scale, national security. Food security, the loss of biodiversity and the vulnerability of water resources are concerns across the region. Climate change induced disruptions in the hydrological system can lead to tensions between upstream and downstream water users if these prospects are not taken into account in water management practices. The water-agriculture-energy nexus in the South Caucasus is critical, particularly in co-ordinating the use of water resources between sectors at the national level and between upstream and downstream countries. Currently there are no water treaties signed between any of the three neighboring countries, but significant progress has been achieved in the preparation of a bilateral agreement between Azerbaijan and Georgia for the Kura River. Climate change also affects mountain ecosystems and remote coastal zones in the region.

All three countries have submitted their Intended Nationally Determined Contributions (INDCs) to the UNFCCC prior to the COP21, setting concrete emission reduction targets and committing to adaptation plans. The INDCs for Armenia and Georgia highlight the importance of the agricultural sector for

the countries' economies as well as the climate change impacts on agriculture and food security.

Climate change is gaining increasing attention among decision makers in the region in the development of national strategies and programmes related to poverty, sustainable development and renewable energy. None of the countries has yet established a specific national climate change policy, however all three countries have declared the need for developing national adaptation plans. Georgia's ratification of the Association Agreement with the EU facilitates integration of a number of sectoral policies, including on climate change adaptation.

The South Caucasus countries have achieved progress in the implementation of structural governance reforms – a critical step to addressing climate change commitments. However, considering the multitude of other national priorities and the implications of climate change across the social, economic and environmental sectors, current financial allocations for climate change adaptation are largely insufficient. Due to fiscal constraints and competing priorities public funds are rarely allocated for adaptation measures. Most of the climate change adaptation activities to date have been supported by external donors. Some national adaptation measures were implemented in Azerbaijan, where the Government invested in flood prevention activities, remediation and reforestation, but such measures remain few.

Ongoing institutional and municipal reforms, as well as infrastructure development and implementation of sectoral policies may provide possibilities for climate change adaptation measures, but a lack of co-ordination between central administrative bodies and local municipalities and a gap in the knowledge and resources needed for climate change and resources needed for climate change adaptation are challenges to progress.



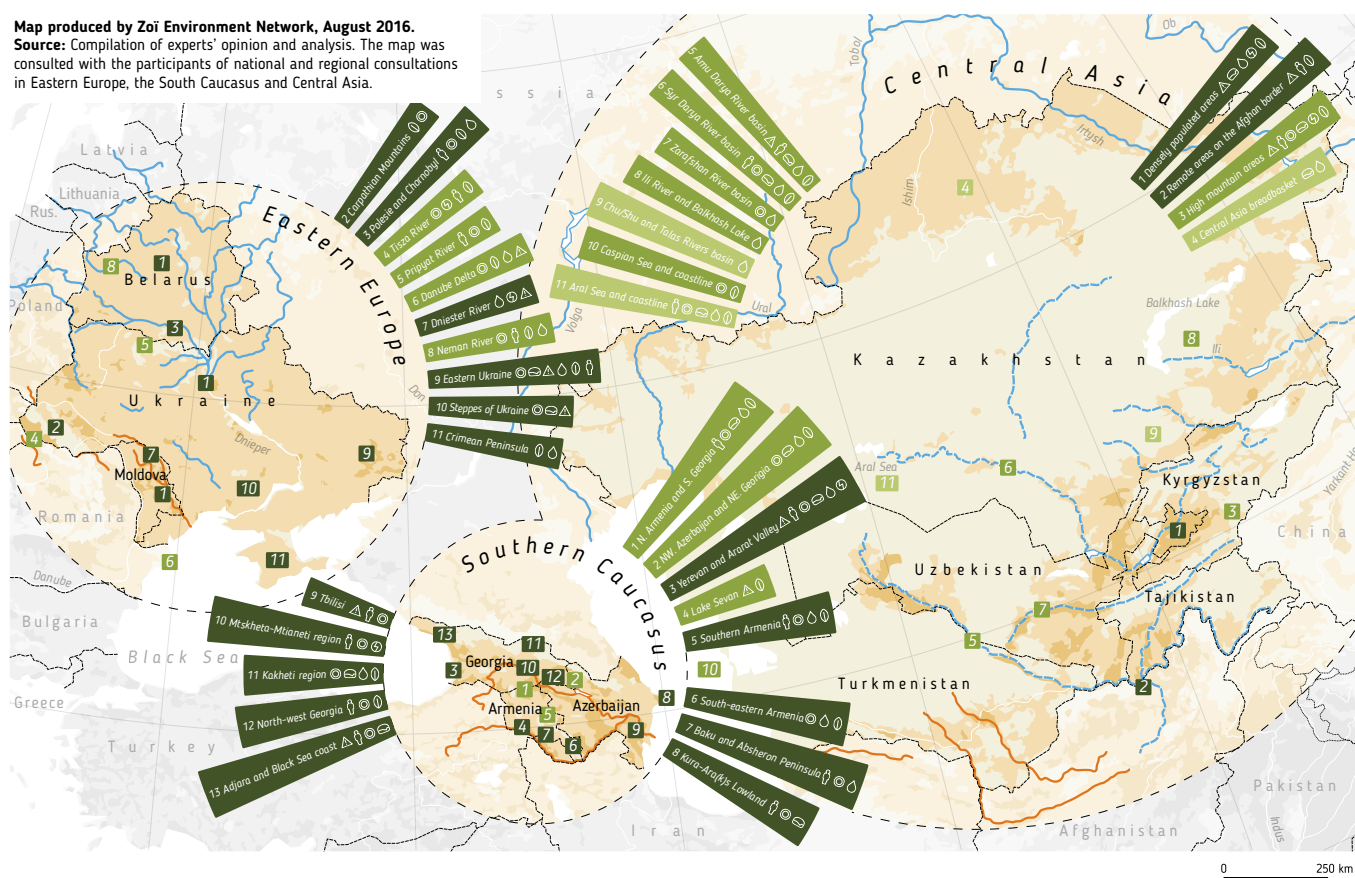
CLIMATE CHANGE AND SECURITY HOTSPOTS IN EASTERN EUROPE, CENTRAL ASIA AND THE SOUTH CAUCASUS

The climate change and security hotspots were identified during the participatory assessment processes for Eastern Europe, Central Asia and the South Caucasus which included relevant stakeholders from government agencies

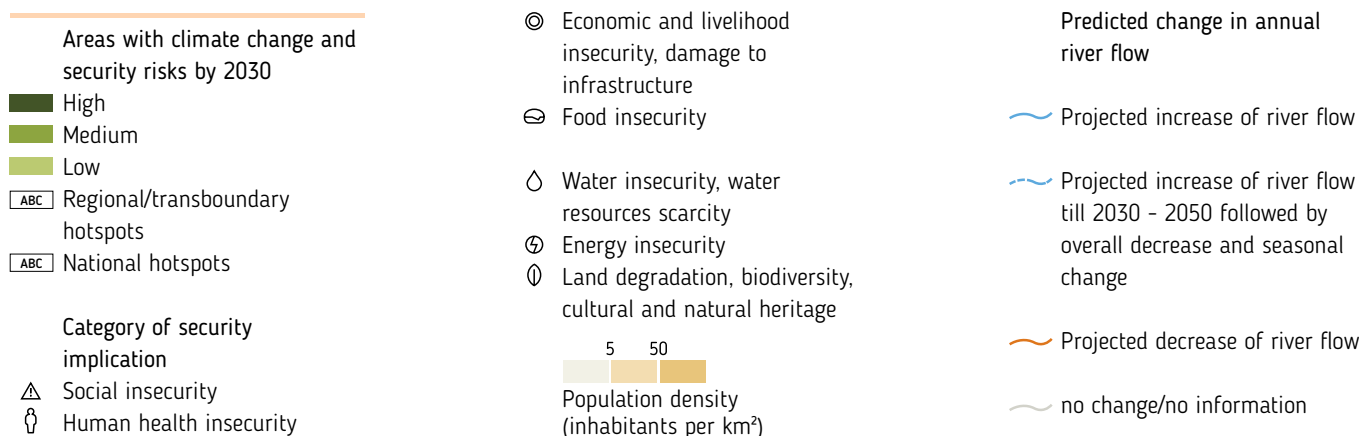
and non-governmental organizations, academia as well as experts.

Regional hotspots have regional security implications, and may extend across ecosystems in more than one country.

Map produced by Zoi Environment Network, August 2016.
 Source: Compilation of experts' opinion and analysis. The map was consulted with the participants of national and regional consultations in Eastern Europe, the South Caucasus and Central Asia.



Climate change and security hot-spots in Eastern Europe, the South Caucasus and Central Asia



Climate change and security hot-spots and climate change hazards

Eastern Europe

1 Urban areas

Higher temperatures, heatwaves and cold waves, extreme events, air and water quality deterioration

2 The Carpathian Mountains

Higher temperatures, extreme events, changes in precipitation, biodiversity losses

3 Polesie and Chernobyl

Droughts, desertification and soil erosion, wildfires and floods on contaminated territories

4 The Tisza River

Extreme events, floods and mud slides, water quality deterioration

5 The Pripyat River

Droughts, higher temperatures, extreme events, desertification and soil erosion

6 The Danube Delta

Water deficit, desertification and soil erosion, increasing invasive species, reed fires, sea level rise

7 The Dniester River

Higher temperature, extreme floods, aqua diversity interruption, water scarcity

8 The Neman River

Higher temperatures, reduction in precipitation, increase in droughts and floods

9 Eastern Ukraine

Environmental deterioration due to conflict, water deficit, agricultural land losses, soil erosion, fires

10 The Steppe zone of Ukraine

Desertification, soil and bank erosion, water scarcity, sea level rise, wildfires, heatwaves

11 The Crimean Peninsula

Increased aridity, salinization, higher temperatures, decline in precipitation, sea level rise, water scarcity

South Caucasus

1 Northern Armenia and southern Georgia

Water scarcity, floods, hail, landslides, avalanches, agriculture land degradation

2 North-west Azerbaijan and north-east Georgia (Alazani/Ganykh River basin)

Water scarcity, high risks of floods, mudflows and landslides, agriculture land degradation

3 Yerevan and Ararat Valley

Droughts, heatwaves, frosts, hail, mudflows and floods, water scarcity, agriculture land and soil degradation

4 Lake Sevan

Increase in water and air temperature, biodiversity losses, extreme events, land and soil degradation

5 Southern Armenia

Droughts, extreme events, water scarcity, forest degradation, mining-related contamination

6 South-eastern Armenia

Hailstorms, strong winds, sandstorms, flooding, frosts and droughts, mining-related contamination

7 Baku and Absheron Peninsula

Sea level rise, landslides and mud slides, risk of oil contamination

8 The Kura-Ara(k)s Lowland

High risks of floods and droughts, sea level rise, salinization, agricultural land and soil degradation

9 Tbilisi

Higher temperature, heatwaves, abnormal precipitation, extreme events, air and water quality deterioration

10 The Mtskheta-Mtianeti region

Landslides, mud slides and avalanches, abnormal precipitation, glacial melt

11 The Kakheti region

Land, forest and pasture degradation, water scarcity, extreme events, changes in precipitation

12 North-west Georgia

Increase in temperature, landslides, mud slides and seasonal floods, glacial melt

13 Adjara and the Black Sea coast

Extreme events, sea level rise, land and biodiversity degradation, migration due to extreme events

Central Asia

1 Densely populated areas

Glacial melt, glacial lake outburst floods, hailstorms, frosts, water and land-use issues

2 Remote areas on the Afghan border

Growing demand for irrigated land, agricultural land degradation, floods and droughts, pest infestations

3 High mountain areas

Glacial lake outburst floods, melting permafrost, extreme winter weather and droughts

4 Central Asia breadbasket

Land and soil degradation, changes in precipitation, extreme events, water scarcity

5 The Amu Darya River basin

Glacial melt, increase in precipitation and heatwaves, nature resources deterioration

6 The Syr Darya River basin

Glacial melt, increase in precipitation and heatwaves, risk of radioactive contamination

7 The Zarafshan River basin

Glacial melt, floods in the mountains, water scarcity, risk of contamination by industry and agriculture

8 The Ili River and Balkhash Lake

Glacial melt, higher temperatures, water scarcity, risk of contamination by industry

9 The Chu/Shu and Talas Rivers basin

Glaciers melt, floods in the mountains, droughts, water scarcity, agricultural land degradation

10 The Caspian Sea and coastline

Changes in precipitation, storm surges and floods

11 The Aral Sea and coastline

Higher temperatures and aridity, agriculture land and soil degradation, desertification, water scarcity

LOOKING AHEAD - HOW TO STRENGTHEN THE RESILIENCE TO CLIMATE CHANGE AND SECURITY RISKS

Growing awareness about the security implications of climate change among policy-makers and the public could support the governments in the project countries to take swift actions from the local to the regional level to tackle the impacts of climate change and the implications for security.

Participants of the regional and national consultations proposed various areas of intervention, many of them matching the priorities of the Environment and Security Initiative. They also called for strengthened regional co-operation as well as more consistent and targeted international support.

Key areas of engagement in the project countries including from international organizations may include:

- Incorporate climate change and security considerations into policies and measures to strengthen security, in particular in the identified climate change and security hotspot areas
- Facilitate cross-border co-ordination and exchange of information in the preparation of climate change projections as well as impact and vulnerability assessments, and search for common approaches to adaptation and response measures

- Build capacity on climate change and security risks and integrated risk assessments
- Facilitate adoption of policies and instruments that promote cross-sectoral integration of policies
- Raise awareness of decision makers on security impacts of climate change
- Develop and implement comprehensive public awareness campaigns on climate change and security, adaptation measures and public as well as individual contributions

Technical interventions can support the improvement in water and land management by reducing stress on the socioeconomic and natural systems. The importance of transboundary water ecosystems suggests that basin-wide co-operation mechanisms, including river basin commissions, could help to better address existing water management challenges at transboundary and national levels, including climate change and security challenges related to water.

CONTINUED ENGAGEMENT OF ENVSEC IN ADDRESSING CLIMATE CHANGE AND SECURITY RISKS

The ENVSEC partner organizations with their specialized and complementary mandates and expertise in environment, development, and security can jointly assist countries to adapt to the effects of climate change within a broader context of environment, security, and sustainable development. Continued engagement will also contribute to support countries in implementation of commitments under the Paris Agreement and will contribute to the 2030 Agenda for Sustainable Development and implementation of the Sustainable Development Goals in particular SDG 13.

The ENVSEC Initiative partners are committed to mobilize political interest and financial resources to continue their support to the countries of the region in addressing climate change and security risks in the following areas:

- **Key area 1:** Technical assistance to enhance the knowledge base on climate change impacts and their interrelation with security e.g. through conducting in depth climate change and security risk assessments which take into account changing socio-economic, political and environmental circumstances

- **Key area 2:** Support to regional dialogue and co-operation e.g. through facilitating cross-border co-ordination and exchange of information on climate change impacts, and joint risk reduction measures
- **Key area 3:** Strengthening relevant policies, institutions and capacities at national and regional levels to address climate change risks e.g. through developing regional/transboundary adaptation strategies, through providing training and through sharing of experience and lessons learned on climate change and security risk reduction activities
- **Key area 4:** Facilitating communication and raising awareness on security impacts of climate change and potential adaptation measures: ENVSEC partners together with Aarhus Centres will continue to organize public information and awareness raising campaigns, media trainings and sharing of experience and lessons learned on climate change and security while promoting stakeholder engagement to participate in mitigation and adaptation activities as well as in the decision-making process

