Cross-border cooperation during forest and peat fires, May 19-20 2010, Pskov, Russia

Seminar Report
Index

Background .................................................................................................................. 5
Seminar Summary ........................................................................................................ 6
  Värmland oblast ..................................................................................................... 6
  Pskov oblast ......................................................................................................... 6
Forest Fire and climate Change .............................................................................. 7
  Climate Change in the Pskov region .................................................................... 7
  How does climate change affect forest fires in the Pskov region? ................. 7
  How does climate change affect forest fires in Sweden? ............................. 8
Legislation and Framework ...................................................................................... 8
  Forest fire framework in Estonia ...................................................................... 8
  Forest Fire Framework in Russia ...................................................................... 9
  Forest Fire Framework in Sweden ................................................................... 9
Managing Emergency Calls ...................................................................................... 10
The State Forest Fire Protection ............................................................................ 10
  Automatic forest fire monitoring system in Lithuania ..................................... 10
  Fire Response and Fire Monitoring ................................................................. 11
  Aviation resources in Russia .......................................................................... 11
Cross-border Challenges ......................................................................................... 12
  Cross-border fire response in Sweden ............................................................. 12
  Cross-border fire response in Kaliningrad ...................................................... 13
  Procedure for aircraft crossing Latvia’s border ............................................ 13
Managing Forest and Peat Fires ............................................................................ 13
Needs of Knowledge and Research ..................................................................... 14
Challenges ................................................................................................................. 14
Developing areas ..................................................................................................... 15
Continued work ....................................................................................................... 15
Appendix 1. Seminar participants ....................................................................... 16
Appendix 2. Seminar Programme, Pskov May 19-20, 2010 ............................ 18
Background

Cooperation within the UN APELL - programme\(^1\) has been carried out in municipalities in North-Western Russia through the former Swedish Rescue Services Agency with financial support from Swedish International Development Agency (SIDA). During 1997-2005 a number of workshops were organized by Russia and Sweden with participation from the North-Western region of Russia and the Nordic countries. These workshops were based on a risk scenario in the different parts of North-Western Russia and focused on cooperation on local level between the authorities in case of accidents. Participating parties have agreed to continue the work. Among the areas of interest was cross-boarder cooperation during forest and peat fires. The issue was discussed later at the Directors General meeting for the Baltic Sea countries, where the idea of organize a workshop with focus on forest fires received great support from countries in the Baltic Sea region.

The seminar was a joint initiative from Russia and Sweden, who co-arranged the seminar with financial support from SIDA. Estonia, Latvia, Lithuania, and Poland participated. Other invited countries were Belarus, Finland and Norway.

The Purpose of the seminar was to exchange knowledge and experiences to better understand the issues related to forest fires and responses in and between participating countries. The aim was to find common goals to enhance international cooperation and to enable a long-term mutual action plan. In order to do that group sessions were organized to prioritize areas of development.

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\(^1\) APELL = Awareness and Preparedness for Emergencies at Local Level
Seminar Summary

The objective of the seminar was to enable cooperation within the forest fire area. The seminar is a starting point for exchanging experience and for future cooperation within the area.

Värmland oblast
Mr Björn Sandborgh, County Administration Board, Värmland, Sweden

The oblast of Värmland has 274,000 inhabitants. It is known for its beautiful nature and is a popular tourist region. Värmland has specific clusters for cooperation, for instance regarding IT, telecom and paper production. The region works according to the Värmland model, a model that aims to get different sectors in society; the academic world, trade and industry sector and the public sector to cooperate in certain focus areas in order to stimulate innovations and reinforce development. About 10,000 students attend at the regional university, Karlstad University which offers more than 800 different courses.

Pskov oblast
Mr Mikhail Djakov, Adviser to the Governor of Pskov Oblast, Russia

Pskov oblast is a unique oblast in the sense that it borders to five other oblasts in Russia and three other countries; Latvia, Estonia and Belarus. Pskov oblast was founded in 1944. It has 705,000 inhabitants, out of which 200,000 live in Pskov. The production is mainly focused on process and agricultural production. Pskov has over 3,000 lakes and over 30% woodland, mostly located towards the western borders. A large part of the natural land consists of swamp areas mixed with coniferous forests. There are also cross boarding gas and electricity pipes mainly located in the forest areas.

The high-risk fire season extends from July through September. In addition the area is often struck by heavy winds in the beginning of the summer. The forest fire can be a threat to habited areas. Specific forest fire units extinguish fires and evacuate inhabitants if necessary.

A special coordinating organ is located in Pskov Oblast, the Emergency Commission. Forest fire is a major threat to the region and the initiative of cooperation in the forest fire area is welcomed.
Forest Fire and climate Change

Climate Change in the Pskov region
Ms Tala Nezhadimova, Head of the Meteorological Centre, Pskov Oblast

The Meteorological Centre is responsible for weather monitoring in Pskov oblast. There are eight monitoring stations in the oblast; three of them are more than 100 years old. Weather data has been documented in the region since 1874. There are some gaps in the recording of data due to unstable political periods, but since 1945 the weather data has been monitored frequently.

The weather data indicates few anomalies in the Oblast, with an exception of the last twelve years. Since 1998 the temperature has shifted and precipitation has decreased. In general, the extremes have been more frequent and intensified with warmer and wetter winters. The summer of 2002 was extremely hot and dry. In June month the temperature reached a peak of 38 degrees with an average temperature rise of 2-3 degrees above normal while precipitation decrease with 20 % and humidity dropped with 14 % below normal. These changes contribute to an increased risk of forest fires.

The year of 2006 was one of the warmest summers in history and since then an increase of forest fires have been observed. The beginning of 2010 has followed the climatic normalities. However, May has been extremely hot with temperatures above normal.

How does climate change affect forest fires in the Pskov region?
Ms Annetta Koverezheva, Centre Antistikhia, EMERCOM of Russia, Moscow

Studies show that the on-going global climate change affects the forest fire situation in the Pskov and Leningrad Oblasts. An analysis of previous fire seasons show that the high-risk fire season is becoming longer.

Increased temperatures and carbon dioxide may increase the amount of fire prone areas. Today the fire season extends from mid April – September, where the most intensive months are May, August and September. In 2002 Pskov oblast experienced a fire intense year. The temperature increased with 5 degrees above normal and the rainfall decreased.

During the high-risk fire season satellites are used to complement other measures for detecting forest fires, particularly in remote forest areas where it is difficult to detect fires with other means. It is therefore of great importance that the communication between neighbouring countries is developed so information about the situation during the forest fire season is shared in case of a fire.
How does climate change affect forest fires in Sweden?

Ms Marie Lundqvist, Swedish Civil Contingencies Agency (MSB), Sweden

According to the reports from the Intergovernmental Panel on Climate Change, IPCC, the global temperature has increase over the last 150 years with an accelerating increase during the last decades.

The Swedish government appointed a commission to look at the consequences of global climate change on different societal sectors in Sweden. The findings where presented in the report: Sweden facing climate change threats and opportunities. The report concludes that Sweden is mostly vulnerable to flooding, landslides and storms. In general Sweden will become warmer and wetter. Average temperature will rise more than the global means, 3-5 degrees. Winter temperature may increase 7 degrees in northern Sweden. More rain but warmer and drier summers with longer periods of hot days, especially in the southern parts of the country.

A longer season of warmth will cause greater growth in vegetation. The number of days with an increased risk of forest fire may increase. The southern parts may face a higher risk of sever fires, because of more available dry fuel. If an increased number of fires occur at the same time Sweden may have difficulties handle the response due to a lack of fire fighting resources.

Legislation and Framework

Forest fire framework in Estonia

Mr Tarmo Terep, Estonian Rescue Board, Estonia

Half of Estonia consists of forest areas and forestry is an essential part of the countries production. Estonia has about 70-80 forest fires each year, of which 1-2 are of greater size. However, the main problem in Estonia is land and peat fires with an average of 2 000 fires a year. Most peat fires occur in may.

The Rescue Board is responsible for fire fighting, whereas The Environmental Ministry is responsible for preventing forest fires. Land owners are not responsible for extinguishing fires and have no specific teams for fire response.

The Estonian Emergency Preparedness Act regulates methods of risk assessment and crisis management plans. Each region has a special emergency plan. The management structure increases as an emergency grow from level 1 - 4. The fourth and last level involves the Rescue Board. During long term emergencies like a forest fire, the crisis commission is brought in. During major accidents extra resources are available.

Through the KILP system various organisations are trained together to enable efficient cooperation during an emergency response.
Estonia has cooperation agreements with neighbouring countries in the area of cross-border forest fire exercises, which have been carried out several times. If consequences of forest fires peak the government can compensate for the economic losses, at certain times even the loss of income.

**Forest Fire Framework in Russia**

*Mr Valery N Leonenkov, EMERCOM of Russia, Leningrad Oblast*

Ministry of Agriculture is responsible for most issues regarding forest fires. 80% of all wood land is lent out to landlords. An improvement of the fire legislation is developed but it is a long term work. The aim is to oblige landowners the access to fire fighting forces. Leningrad oblast has separate stations or fire response and chemical response.

Recently, a forest fire seminar with Finland was carried out. Cross-border exercises with Finland take place every year on chemical accidents and fire. An issue today is the lack of insurance for emergency staff and equipment which must be included in bilateral agreements. Leningrad oblast hopes to extend the international cooperation to include Estonia.

**Forest Fire Framework in Sweden**

*Mr Leif Sandahl, Swedish Civil Contingencies Agency (MSB), Sweden*

The responsibility in Sweden for forest fires are divided between tree levels, the state level, MSB, the county administration board and the municipality.

The local rescue service is the base for Swedish emergency preparedness. They take care of all kinds of emergencies. 112 is the central telephone number for all kinds of emergency alarms. Rescue commander has the ability by law to require assistance from the public and others at an emergency.

The municipal is responsible for prevention, operations and evaluation of accidents and brigade response.

During the forest fire season the forests are monitored by small airplanes. The county administration board administrates this. The state has no aerial means for forest fires, but supports the forest fire surveillance economically. The aerial means are used for early detection and can also support the commander during a fire response.

In Sweden the legal Right of Access to Private Land applies, which means that the public is allowed to visit all forests for recreational purposes.

Land owners have to manage the properties but have no special responsibility to protect the forest against fires. Although it is not written in law, by practice the forestry has to take special precautions during the fire season when woodworking. When the fire risk is high the forestry keeps in close contact with
the local rescue services. Sweden has an information system which shows the
fire risk in forests during summer season. The risk is based on weather and
humidity data.

Managing Emergency Calls
Mr Anatolij Evstratov, EMERCOM of Russia, Karelia

There is an agreement established on joint management of emergency calls
between Leningrad oblast, Karelia oblast and bordering oblast in Finland.
Governors of municipalities within the oblasts congregate on a yearly basis. The
Crisis Communication Centres use standardized forms to document
information from emergency calls, rescue responses and exercises.
In case of an emergency where Finish support is demanded, the Custom’s office
is contacted. At the boarder a joint response team of Finnish and Russian
rescue workers is established. The country where the emergency situation is
located leads the operation. A special agreement allows expert authorities to
execute simplified cross-border procedures. The language barrier is handled
with interpreters during boarder crossing and at the joint command centres.
Once a month, a check is carried out of the procedures and communication for
joint operations.

The State Forest Fire Protection

Automatic forest fire monitoring system in Lithuania
Mr Nerijus Statkus, Lithuanian Fire and Rescue Services, Lithuania

The law on forest from 1994 was supplemented in 2010 with a clause on fire
fighting and protection of forests. It states that the forest owner is responsible
for the fire protection and fire fighting system.

Lithuania has 42 forest entities and 110 towers, 30-40 meters high, for manual
fire observation from early spring to late autumn. Current system is expensive
and a demanding work. Aviation means and satellite observation are rather
expensive measures. Aviation surveillance is used at specific situations, for
examples at fires spread over a larger area.

An automatic monitoring system with night vision has been introduced. It
consists of detectors with optical 360° cameras with placed at a height of 40-60
meters. The surveillance radius is 15 km, at ideal conditions up to 40 km. The
cameras take pictures that are processed by a computer. If a risk situation
occurs an operator is automatically called in. Eventually 82 cameras will be
installed. From 2012 an automatic monitoring system will work in the whole
country.
Fire Response and Fire Monitoring
Mr Mikhail B Astafurov, EMERCOM of Russia, Pskov Oblast

Pskov oblast has 2360 hectares of forest, half of them pine forest. The majority of forest fires occur in the vicinity of populated areas. Fires caused by arson increased over the last years. Forest fires occur mostly north, west and south of Pskov Oblast. The forest authorities are responsible for fire monitoring. A situation report is sent every day to the Administration of the Oblast. The means used for monitoring are patrols, fire observation towers (36) and observation via satellites. Satellite observation information is transmitted four times a day.

Local response teams handle forest fires. EMERCOM only interferes in the response if economic values are threatened, if population is threatened or if the fire is over a certain given size (25 hectares). There is a need for cross-border cooperation with neighbouring countries.

Aviation resources in Russia
Mr Valerij Drobiniskij, EMERCOM of Russia, Moscow

Aviation resources are an asset to provide observation and enable assessment of the affected area. It can also be used to transport material to inaccessible areas. Aviations are advantageous for rapid response, independence of terrain, flexibility of manoeuvring etc.

Water intake takes only a few seconds depending on the surface conditions. Two ways of filling: fire fighting on the front of or before the fire front.

Statistics show that an average of 5 liters/m² is needed to extinguish a forest. Redundant such as water gel can reduce the vaporization and improves effectiveness when fighting crown fires.

EMERCOM has various aviation resources for example:

* **Iljushin 76**: a tank aircraft called “Water bomber”, can drop 40 tons of water under 5 seconds and cover 5 hectares from 500 meters latitude. The aircraft is dependent on a refuelling station.

* **BE-200**: 30 m long modern amphibious special search and rescue plane also used for fire fighting. The vessel has an effective water intake and can drop 270 tons of water or redundant in an area of 10 km. The plane can cover 600 km/h. and drops an average of 1.3 litres per 1 m². A distance of 10-25 km from water intake to dropping is optimal. Refuelling takes one hour. It is most advantageous to have two teams working parallel.

* **Helicopter MI-8 and KA-32**: 15 tons of water with external load.
EMERCOM of Russia has over the last years participated with air resources in extensive forest fire fighting operations in many countries e.g. Greece, Bulgaria, Serbia, and Montenegro.

Cross-border Challenges

Cross-border fire response in Sweden
*Mrs Julia Fredriksson, Swedish Civil Contingencies Agency (MSB), Sweden*

In Sweden the local rescue service is always responsible for a response. If the accident escalates the municipalities in the region cooperate, in some cases the cooperation extends across the border.

*Nordred* is a cooperation between Nordic countries from 1989 with the objective to facilitate necessary mutual assistance in the event of emergencies. It is a framework agreement complemented by supplementary local agreements. Assisting states are entitled to reimbursement. An ongoing cross-border EU project aims to analyse the agreement to possibly revise and broaden it.

Since 1997 Sweden has a cooperation agreement with EMERCOM of Russia regarding emergency prevention, preparedness and response.

*Barents agreement* is a rescue cooperation between Finland, Norway, Russia and Sweden signed in 2008. It aims to facilitate necessary mutual assistance in the event of accidents, mutual use of resources, border crossing procedures and mutual exercises and training. A joint committee for the agreement meets every year.

Sweden also has complementary bilateral agreements with Estonia, Latvia and Lithuania.

*The Community Civil Protection Mechanism* was established in 2001 and has 31 participating states. The mechanism includes prevention, preparedness and emergencies. An essential part of the mechanism is MIC, Monitoring and Information Centre. MIC is based in the European Commission and is the entry point for requests for emergency relief assistance. MIC coordinates information and technical support within the EU and is an administrative relief in liaising with the affected country. When a request for help is sent to MIC other member states are being asked for available resources and assistance to the affected country.

Operations within the EU Mechanism via MIC have increased over the last years. Countries outside the EU can also be helped through MIC, but only in specific and extreme situations.
Cross-border fire response in Kaliningrad
Mr Rafis A Kamalov, EMERCOM of Russia, Kaliningrad oblast

Kaliningrad Oblast is bordering Poland and Lithuania. There are two bilateral agreements between Russia and Poland, and Russia and Lithuania that allows for regular information exchange and joint responses. However, cross-boarder cooperation between the countries is problematic due to bureaucratic obstacles. To cross the border during emergencies takes too long, between 60 to 90 minutes. A decision to provide help can not be taken on the local level, Kaliningrad oblast has to wait for a decision from the Russian government and it takes time to get the decision from Moscow. This needs to be changed to enable functional cross-border cooperation.

Kaliningrad Oblast plan to organise a cross-border exercise together with Poland, Lithuania, and Germany.

Procedure for aircraft crossing Latvia’s border
Mr Nikolajs Golovcuks, State Fire and Rescue Service, Latvia

About 50% of Latvia is covered by forests. Every year an average of 865 fires occur. Jurmala and Daugavpils have separate organizations for fire fighting responses. Latvia has bilateral agreements with Estonia and Belarus, and an agreement with Russia is in the process. Routines for permissions and border crossing have very complex procedures as mentioned earlier. If the situation is urgent, permissions can be made verbally. In Latvia it is more time efficient to deliver help by automobile transport than by air.

Managing Forest and Peat Fires
Mr Evgenij V Bojtsov, EMERCOM of Russia, North-Western Regional Centre, St:Petersburg

The surrounding natural land of S:t Petersburg consist of forest, peat and swamp areas that are close to the city. Several oil and gas pipelines go through the forest zones. Peat fires are common in the S:t Petersburg area. The fire is a threat to habitat areas, industries and airports and a quick response is therefore essential. A major problem during fire response is the lack of water resources in the area, which is crucial since extinguishing peat fires demands large amounts of water.

A potential risk during fire response is explosions from deposited Second World War ammunition.

The equipment used during peat fires is a 6-meter wide hoe with fog fighter-nozzles. A camera system is also used to monitor fires, but they only work during daylight.
Needs of Knowledge and Research
Mrs Josefin Gullstrand, Swedish Civil Contingencies Agency (MSB), Sweden

Over the last decade the focus on climate change and its consequences have increased, with several reports written on the general effects. With this background MSB (former SRSA) assigned 3 researchers to carry out overviews on landslides, floods and forest fire, to identify gaps and needs of knowledge and research regarding adaptation to climate change.

The forest fire overview was carried out through literature studies with a focus on the conifer-dominated forest in the Northern Hemisphere. Three main areas where identified where there is a need for knowledge and research;

- **Effect of climate change**: Better knowledge of the current situation with forest fires e.g. causes, mechanisms of fire ignition, and how different variables e.g. fuel, humidity etc. affects fire intensity, spread and extent of forest fires


- **Fire fighting organization and tactics**: how to locate our resources and optimize the capacity in the most effective way. Development of more effective methods and equipment to extinguish forest and vegetation fires, and improved decision support systems

Challenges

The challenges within participating countries are both practical and knowledge based. During cross-border fire responses there are administrative issues related to the border-crossing, which delays the responses. The equipment used at a joint fire response is not compatible. A better knowledge of mechanisms behind forest fires is needed and how the on-going climate change will affect these mechanisms. Finally, there is a need of better forest fire data and analysis.
Developing areas

During the seminar group sessions were arranged to find out specific development needs within the forest fire area. Most important areas of development among participating countries were;

**Lessons learnt:**
- Analyses of former large scale forest fires to draw conclusions and to take care of lessons learnt from the response.

**Prevention:**
- Information to the public on how to prevent forest fires and how to behave if a fire occurs.
- Development of various measures for preventing forest fire in general.

**Methods & Tactics:**
- Coordination of fire fighting operations, rescue forces and equipment at border crossing.
- Development of systems for early detection and monitoring of forest fires.
- Joint exercises with various organizations engaged in forest fire fighting, practical and table top exercises.
- Improving ways and procedures of sharing and helping each other with equipment at a forest fire.
- Simulation of fire spread.
- Administrative procedures at border-crossing: Procedures for border crossing must be simplified, both regarding personnel, visa applications and bringing equipment across the borders.

A full summary of the results from the group sessions is presented in appendix 3.

**Continued work**

A follow-up meeting will be arranged in Sweden in November 2010. At this opportunity the participants will agree to a mutual action plan based on the results from the group sessions.
### Appendix 1. Seminar participants

<table>
<thead>
<tr>
<th>Participants</th>
<th>Organization</th>
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<tbody>
<tr>
<td><strong>Sweden</strong></td>
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<tr>
<td>Julia Fredriksson</td>
<td>The Swedish Civil Contingencies Agency (MSB)</td>
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<td>Josefin Gullstrand</td>
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<td>Marie Lundqvist</td>
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<tr>
<td>Björn Sandborgh</td>
<td>Governor of Värmland County</td>
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<td>Leif Sandahl</td>
<td>The Swedish Civil Contingencies Agency (MSB)</td>
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<tr>
<td>Lars–Gunnar Strandberg</td>
<td>The Swedish Civil Contingencies Agency (MSB)</td>
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<td><strong>Estonia</strong></td>
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<tr>
<td>Mart Haljaste</td>
<td>Estonian Rescue Board</td>
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<td>Piho Somermaa</td>
<td>Estonian Rescue Board</td>
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<td>Tarmo Terep</td>
<td>Estonian Rescue Board</td>
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<td>Mati Valjaots</td>
<td>Estonian Rescue Board</td>
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<td>Carl Eric Laantee Reintamm</td>
<td>Consulate General of Estonia, Chancery in Pskov</td>
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<td><strong>Latvia</strong></td>
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<td>Nikolajs Golovcuks</td>
<td>Latvian State Fire and Rescue Service</td>
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<td>Aldis Lieljuksis</td>
<td>Latvian State Fire and Rescue Service</td>
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<td><strong>Lithuania</strong></td>
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<td>Mindaugas Lisas</td>
<td>Fire and Rescue Department under the Lithuanian Ministry of Interior</td>
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<td>Nerijus Statkus</td>
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<td><strong>Poland</strong></td>
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<td>Slawomir Zajac</td>
<td>National Headquarters of the State Fire Service</td>
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<td>Aleksander Adamski</td>
<td>The Main School of Fire Service (SGSP)</td>
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<td>Russia</td>
<td>Valerij Drobinskij</td>
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<td>Annetta Koverezheva</td>
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<td>Mikhail Djakov</td>
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## Appendix 2. Seminar Programme, Pskov May 19-20, 2010

### Day 1, the 19th of May

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>09.00 - 09.30</td>
<td>Introduction</td>
</tr>
<tr>
<td>09.00 - 09.30</td>
<td>Welcome and Introduction Mr Oleg G Chernej, Chairman Russia</td>
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<tr>
<td>09.00 - 09.30</td>
<td>Welcome and Introduction Mr Björn Sandborgh, Chairman Sweden</td>
</tr>
<tr>
<td>09.30 - 10.15</td>
<td>Forest Fires and Climate Change</td>
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<td>09.30 - 10.15</td>
<td>How does climate change affect forest fires in the region?</td>
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<td>09.30 - 10.15</td>
<td>Ms Tala Nezhadimova, Head of the Meteorological Centre, Pskov Oblast</td>
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<td>Ms Annetta Koverezheva, Centre Antistikhia, EMERCOM of Russia, Moscow</td>
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<td>Ms Marie Lundqvist, MSB, Sweden</td>
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<td>10.15 - 10.40</td>
<td>Legislations and Framework</td>
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<tr>
<td>10.15 - 10.40</td>
<td>Forest Fire Framework in Estonia</td>
</tr>
<tr>
<td>10.15 - 10.40</td>
<td>Mr Tarmo Terep, The Estonian Rescue Board</td>
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<tr>
<td>10.40 - 11.10</td>
<td>Coffee break</td>
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<tr>
<td>11.10 - 12.00</td>
<td>Legislations and Framework, continued</td>
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<tr>
<td>11.10 - 12.00</td>
<td>Forest Fire Framework in Russia</td>
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<tr>
<td>11.10 - 12.00</td>
<td>Mr Vladimir E Bogorodskij, EMERCOM Leningrad oblast, Russia</td>
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<td>12.00 - 12.30</td>
<td>Managing Emergency Calls</td>
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<td>12.00 - 12.30</td>
<td>Mr Anatolij A Evstratov, EMERCOM Karelia, Russia</td>
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<tr>
<td>12.30 - 13.30</td>
<td>Lunch</td>
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<tr>
<td>13.30 - 13.50</td>
<td>The State Forest Fire Protection</td>
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<td>13.30 - 13.50</td>
<td>Automatic Forest Fire Monitoring system in Lithuania</td>
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<td>13.50 - 14.30</td>
<td>Fire Response and Fire Monitoring</td>
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<td>Mr Mikhail B Astafurov, EMERCOM Pskov, Russia</td>
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<td>13.50 - 14.30</td>
<td>Aviation resources in Russia</td>
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<td>13.50 - 14.30</td>
<td>Mr Valerij A Drobinskij, EMERCOM of Russia</td>
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<tr>
<td>14.30 - 15.00</td>
<td>Coffee break</td>
</tr>
<tr>
<td>15.00 - 16.00</td>
<td>Cross-border Challenges</td>
</tr>
<tr>
<td>15.00 - 16.00</td>
<td>Cross-border fire response in Sweden</td>
</tr>
<tr>
<td>15.00 - 16.00</td>
<td>Ms Julia Fredriksson, MSB, Sweden</td>
</tr>
</tbody>
</table>
### Cross-border fire response in Kaliningrad
Mr Rafis A Kamalov, EMERCOM Kaliningrad oblast, Russia

### Procedure for aircraft crossing the Latvian border
Mr Nikolajs Golovcuks, State Fire and Rescue Service, Latvia

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.00 -16.10</td>
<td>Break</td>
</tr>
<tr>
<td>16.10 -16.50</td>
<td>Managing Forest and Peat Fires</td>
</tr>
<tr>
<td></td>
<td><strong>Techniques and Tactics</strong></td>
</tr>
<tr>
<td></td>
<td>Mr Evgenij V Bojtsov, North-Western Regional Centre, Russia</td>
</tr>
<tr>
<td>16.50 -17.00</td>
<td>Closure Day 1</td>
</tr>
<tr>
<td></td>
<td><strong>Summary and closure of day 1</strong></td>
</tr>
<tr>
<td></td>
<td>Mr Oleg G Chernej, Chairman Russia</td>
</tr>
<tr>
<td></td>
<td>Mr Björn Sandborgh, Chairman Sweden</td>
</tr>
<tr>
<td>19.00</td>
<td>Conference dinner</td>
</tr>
</tbody>
</table>

### Day 2, The 20:th of May

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>09.00 - 09.10</td>
<td>Introduction day 2</td>
</tr>
<tr>
<td></td>
<td><strong>Introduction</strong></td>
</tr>
<tr>
<td></td>
<td>Mr Oleg G Chernej, Chairman Russia</td>
</tr>
<tr>
<td></td>
<td>Mr Björn Sandborgh, Chairman Sweden</td>
</tr>
<tr>
<td>09.10 - 09.50</td>
<td>Lessons Learnt and Looking Ahead</td>
</tr>
<tr>
<td></td>
<td><strong>Forest fire exercise in Barents Rescue 2009</strong></td>
</tr>
<tr>
<td></td>
<td>Mr Aleksej V Perederij, EMERCOM Murmansk oblast, Russia</td>
</tr>
<tr>
<td></td>
<td><strong>Needs of Knowledge and Research</strong></td>
</tr>
<tr>
<td></td>
<td>Ms Josefin Gullstrand, MSB, Sweden</td>
</tr>
<tr>
<td>09.50 - 10.00</td>
<td>Introduction to Group Sessions</td>
</tr>
<tr>
<td>10.00 -11.50</td>
<td>Group Work including Coffee</td>
</tr>
<tr>
<td>11.50 -12.30</td>
<td>Presentations from Group Work and Discussion</td>
</tr>
<tr>
<td>12.30 -14.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>14.00 -15.00</td>
<td>Closure</td>
</tr>
<tr>
<td></td>
<td><strong>Summary and closure</strong></td>
</tr>
<tr>
<td></td>
<td>Mr Oleg G Chernej, Chairman</td>
</tr>
<tr>
<td></td>
<td>Mr Björn Sandborgh, Chairman Sweden</td>
</tr>
</tbody>
</table>
### Appendix 3. Group Sessions Pskov May 20:th, 2010

#### E-learning

**Description**
Development and adjustment of various educations and information on forest fire into web-based versions.

Examples could be recorded presentations from various seminars.

**Countries that showed interest in the topic:**
Sweden x 3, Lithuania, Poland

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-learning</td>
<td>SWE</td>
</tr>
</tbody>
</table>

#### Insurance

**Description**
Insurance issues regarding fire fighters at cross-border cooperation.

**Countries that showed interest in the topic:**
Russia x 2, Estonia

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance for fire fighters</td>
<td>Russia</td>
</tr>
</tbody>
</table>
### Information to the public during a fire

**Description**
How should the public in a threatened area be informed during a fire and how should they be informed about restrictions to visit threatened areas.

**Countries that showed interest in the topic:**
Russia

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informing the population on peat fire areas</td>
<td>Russia</td>
</tr>
<tr>
<td>Restriction of visiting forest during a fire season</td>
<td>Russia</td>
</tr>
</tbody>
</table>

### Evacuation of the public

**Description**
How should an evacuation be carried out when people are reluctant to leave their homes? How should property be protected in the evacuated area?

**Countries that showed interest in the topic:**
--

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rescue works and human rights</td>
<td>Latvia</td>
</tr>
</tbody>
</table>
## Simulation of fire spread

**Description**  
Development of fire spread models based on vegetation maps.

**Countries that showed interest in the topic;**  
Latvia, Sweden x 3, Poland, Russia

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulation</td>
<td>Sweden</td>
</tr>
<tr>
<td>Computer programs for simulation of fires</td>
<td>Poland</td>
</tr>
<tr>
<td>Results should be possible to be presented on ordinary maps where also water resources should be plotted</td>
<td>Russia</td>
</tr>
<tr>
<td>The spreading models should be one part of decision support systems</td>
<td>Sweden</td>
</tr>
</tbody>
</table>

## Debriefing of rescue workers

**Description**  
Development of how to psychologically take care of rescue workers after a response.

**Countries that showed interest in the topic;**  
Russia

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debriefing for rescue workers after response</td>
<td>Russia</td>
</tr>
</tbody>
</table>
## Information to the public

### Description
Information to the public on how to prevent forest fires and how to behave if a fire occurs.

### Countries that showed interest in the topic;
Latvia, Sweden x 2, Russia x 4, Estonia x 2

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education to children regarding how to behave in nature, how to prevent and behave at a fire</td>
<td>Estonia</td>
</tr>
<tr>
<td>Information to children about forest fires</td>
<td>Russia</td>
</tr>
<tr>
<td>Communication with the public, early warning and web-based information</td>
<td>Latvia</td>
</tr>
<tr>
<td>Information to the population</td>
<td>Russia</td>
</tr>
</tbody>
</table>

## Prevention

### Description
Development of various measures for preventing forest fire.

### Countries that showed interest in the topic;
Latvia, Sweden x 2, Russia x 4, Estonia x 2

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention</td>
<td>Russia, Sweden, Estonia, Poland</td>
</tr>
</tbody>
</table>
Lessons learnt

**Description**
Analyses of former large scale forest fires to draw conclusions and to take care of lessons learnt from the response.

**Countries that showed interest in the topic;**
Lithuania, Estonia, Poland, Sweden

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis of large scale fires and exchange of information,</td>
<td>Lithuania</td>
</tr>
<tr>
<td>Analysis</td>
<td>Estonia, Poland,</td>
</tr>
<tr>
<td></td>
<td>Lithuania</td>
</tr>
</tbody>
</table>

Tactics

**Description**
Development of tactics for fighting forest fires.

**Countries that showed interest in the topic;**
Lithuania, Russia, Sweden

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tactics</td>
<td>Russia, Lithuania</td>
</tr>
</tbody>
</table>
Effective use of resources

*Description*
How to use various resources in the most effective way.

*Countries that showed interest in the topic;*
Sweden, Polen, Estonia

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective use of resources, cost benefit analysis</td>
<td>Sweden</td>
</tr>
<tr>
<td>Efficiency, prompt response</td>
<td>Estonia</td>
</tr>
<tr>
<td>Water supply, battalions, airplanes</td>
<td>Poland</td>
</tr>
</tbody>
</table>

Coordination at cross-border response

*Description*
Coordination of fire fighting operations, rescue forces and equipment.

*Countries that showed interest in the topic;*
Russia, Polen, Lithuania, Estonia

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>To make a plan on large scale equipment used for fire fighting</td>
<td>Lithuania</td>
</tr>
<tr>
<td>Coordination of fire fighting and rescue forces</td>
<td>Russia</td>
</tr>
<tr>
<td>Cooperation</td>
<td>Estonia</td>
</tr>
<tr>
<td>Coordination of activities at border crossing</td>
<td>Russia</td>
</tr>
</tbody>
</table>
Joint exercises

*Description*
Exercises on joint activities for various organizations.

*Countries that showed interest in the topic;*
Russia, Latvia, Sweden, Polen, Lituania

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training of joint activities of various organizations engaged in forest fire fighting, practical and table top exercises</td>
<td>Russia</td>
</tr>
<tr>
<td>Practical exercises</td>
<td>Lithuania</td>
</tr>
</tbody>
</table>

Extinguishing Methods

*Description*
Development of and exchange of knowledge regarding extinguishing methods.

*Countries that showed interest in the topic;*
Latvia, Russia x 2, Estonia, Sweden x 2, Lithuania

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire extinguishing methods</td>
<td>Sweden</td>
</tr>
</tbody>
</table>
**Forecasting**

*Description*
How do we forecast forest fires?

*Countries that showed interest in the topic;*
Russia x 2, Poland, Latvia, Lithuania x 2

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forecasting</td>
<td>Russia</td>
</tr>
</tbody>
</table>

**Administrative Procedures for Border Crossing**

*Description*
Procedures for border crossing must be simplified, both regarding personnel, visa applications and bringing equipment across the borders.

*Countries that showed interest in the topic;*
Polen, Lithuania, Estonia x 3, Russia x 3, Sweden, Latvia

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedures</td>
<td>Poland</td>
</tr>
<tr>
<td>Simplified bureaucracy when crossing borders</td>
<td>Lithuania</td>
</tr>
<tr>
<td>Legal support and standard procedures for border crossing</td>
<td>Russia</td>
</tr>
</tbody>
</table>
## Fire Fighting Equipment

**Description**  
Improving ways and procedures of sharing and helping each other with equipment at a forest fire.

**Countries that showed interest in the topic:**  
Estonia, Lithuania, Poland, Russia x 3, Sweden, Latvia

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aircrafts</td>
<td>Poland</td>
</tr>
<tr>
<td>Equipment</td>
<td>Poland</td>
</tr>
<tr>
<td>Information about available equipment and its compatibility with other resources</td>
<td>Estonia</td>
</tr>
<tr>
<td>Compatibility between various equipments</td>
<td>Russia</td>
</tr>
<tr>
<td>Standard operation procedures for technical compatibility</td>
<td>Russia</td>
</tr>
<tr>
<td>Simplified procedures for bringing equipment across borders</td>
<td>Lithuania</td>
</tr>
<tr>
<td>Containers for fire fighting equipment for quick transportation</td>
<td>Russia</td>
</tr>
<tr>
<td>Cross-border equipment</td>
<td>Russia</td>
</tr>
<tr>
<td>Quadra cycles</td>
<td>Latvia</td>
</tr>
</tbody>
</table>
## Detection and Monitoring

**Description**  
Development of systems for early detection and monitoring of forest fires.

**Countries that showed interest in the topic:**  
Estonia x 3, Lithuania, Poland x 2, Russia x 2, Sweden x 5, Latvia

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early warning systems</td>
<td>Sweden</td>
</tr>
<tr>
<td>Early detection and monitoring</td>
<td>Sweden</td>
</tr>
<tr>
<td>Detection and monitoring</td>
<td>Poland</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Estonia</td>
</tr>
<tr>
<td>Use of observation equipment</td>
<td>Latvia</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Russia</td>
</tr>
</tbody>
</table>

## Engineering competence

**Description**  
Engineering education and competence for rescue commanders.

**Countries that showed interest in the topic:**  
Russia, Lithuania Polen

<table>
<thead>
<tr>
<th>Specific suggestions</th>
<th>From</th>
</tr>
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<tbody>
<tr>
<td>Engineering and technologies</td>
<td>Russia</td>
</tr>
<tr>
<td>Engineering</td>
<td>Lithuania</td>
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