Russia's EMERCOM: Managing emergencies and political credibility

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Bild/Cover: The Amur River 2012 near Khabarovsk in the Russian Far East, Curious - BOLOD.MN – database, http://www.bolod.mn/Upload/news/RIAN_02264506.LR.ru.jpg

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Sammanfattning

Antalet extrema väderhändelser och naturkatastrofer, såsom översvämningar och skogsbränder, ökar i Ryssland. Rapporten analyserar hur EMERCOM och regeringen har hanterat några av dessa olyckor och deras konsekvenser. På kort tid omvandlades en frivillig organisation för sök- och räddningstjänst till ett av Rysslands maktministerier under ledning av Sergej Shojgu. EMERCOM är en imponerande organisation med stora resurser i form av personal (även militär personal), utrustning och transportmedel på land och vatten samt i luften. I rapporten presenteras och analyseras det ryska systemet för katastrofhantering inklusive det vidareutvecklade ”Förenade statliga systemet för förebyggande och hantering av naturkatastrofer i Ryssland”.

Om räddningsinsatser uppfattas som ineffektiva av befolkningen kan det innebära en utmaning mot trovärdigheten hos den politiska ledningen. Detta är anledningen till att kontrollen ovanifrån är påtaglig samtidigt som skulden hamnar på regional och lokal nivå när problem uppstår. Detta i sin tur medför att lägre nivåer är tveksamma till att ta självständiga beslut av rädsla för att få skulden efteråt. Detta exemplifieras vid hanteringen av några naturkatastrofer som beskrivs i rapporten. Myndigheters hantering av naturkatastrofer har också utmanats genom användning av oberoende sociala medier. Det skedde för första gången under de omfattande skogsbränderna 2010.

För att bättra på sitt internationella rykte har EMERCOM ökat sitt internationella samarbete med FN, EU och andra stater. Ryssland har förstärkt sin internationella verksamhet för katastrofhjälp i flera konfliktområden, inklusive östra Ukraina och Syrien.

Nyckelord: EMERCOM, MTjS, CBRN, civilförsvar, civilförsvarstrupper, naturkatastrofer, Nationellt krishanteringscenter, NCMC, räddningstjänst, militära räddningstjänstenheter, industriolyckor, kriser, RSTjS.

Summary

The occurrence of extreme weather events and natural disasters, such as flooding and wildfires, is increasing in Russia. This report presents and discusses examples of natural disasters with a focus on how EMERCOM and the government have handled these emergencies and their consequences. In a relatively short time, the present defence minister Sergei Shoigu has transformed a volunteer search and rescue team into a ministry called EMERCOM. This is an impressive organisation with vast resources in personnel (including military personnel), equipment and means of land, air and water transport. This report analyses the Russian system for disaster management, including the further developed Unified Emergency Prevention and Response State System.

Disaster management harbours the potential of becoming an embarrassment for the political leadership if emergency response is perceived as ineffective. This is why control from above is the rule while blame is assigned to regional or local levels. This in turn results in subordinate levels being hesitant to take independent decisions for fear of being blamed afterwards. The way in which some recent natural disasters have been handled is a good illustration of this. During the wildfires in 2010, the authorities' handling of emergencies was furthermore questioned in independent social media.

To improve its international reputation, EMERCOM has increased its international cooperation with the UN, the EU and bilaterally. Enhanced disaster relief activities are carried out in several conflict zones, for example in eastern Ukraine and in Syria.

Key words: EMERCOM, MChS, CBRN, civil defence, civil defence troops, natural disasters, National Crisis Management Centre, NCMC, search and rescue service, rescue military units, technological disasters, industrial accidents, emergencies, RSChS.

Foreword

This report was written on behalf of the Russia Studies Programme (Russian Foreign, Defence and Security Policy, RUFS) at the Swedish Defence Research Agency (FOI) which provides analyses for the Swedish Ministry of Defence. The programme focuses on research in Russian security, including military, economic and domestic affairs.

Previously, the programme has published reports on Russian so-called power ministries, i.e. ministries, services and agencies that are directly subordinated to the president and often have their own troops (like the Border Troops and Interior Troops). Roger Roffey's in-depth study of the Russian Ministry for Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM) contributes to the knowledge of how these ministries operate and strenthens Russia's security and safety. It also ties into his previous study of how climate change and natural disasters have challenged Russian policy making (FOI-R--3874--SE).

FOI would like to thank Dr. Greg Simons of the Uppsala Centre for Russian and Eurasian Studies for reviewing a first draft of this report. His insightful comments and suggestions helped the procedure along for completing the study. All of the participants in the review seminar furthermore contributed to a fruitful discussion on both content and structure. Thanks also to Eve Johansson for language editing the report and to Ebba Lundin for work on layout.

Carolina Vendil Pallin,
Project leader for the Russia Studies Programme
8 May 2016

Acronyms and abbreviations

BSEC	Organization of the Black Sea Economic Cooperation
CBRN	Chemical, biological, radiological and nuclear
CIS	Commonwealth of Independent States
EMERCOM	Ministry of the Russian Federation for Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters (or MChS)
ESIMO	Unified Information System on Sea
EU	European Union
FEMA	Federal Emergency Management Agency (US)
FGUAP	Federal State-Owned Unitary Aviation Company
GDP	Gross domestic product
GOSAKVASPAS	Federal State Institute Emergency-and-rescue service for conducting underwater special-purpose operations
ICDO	International Civil Defence Organization
IPCC	Intergovernmental Panel on Climate Change
km	Kilometre
MChS	Ministerstvo po Chrezvychainym situatsiiam see EMERCOM
MoD	Ministry of Defence
MVD	Ministry of Internal Affairs
NATO	North Atlantic Treaty Organization
NCMC	National Crisis Management Centre
NGO	Non-governmental organisation
OKSION	All-Russian Comprehensive Information and Warning System
OSCE	Organization for Security and Co-operation in Europe
RSChS	Unified Emergency Prevention and Response State System in Russia
SRS	Search and Rescue Service
SFS	State Fire Service
SVF	Rescue Military Units (*Spasatelnye voinskie formirovaniia)*
TSENTROSPAS	Central Air Rescue Service
UAV	Unmanned aerial vehicle
UN OCHA	UN Office for the Coordination of Humanitarian Affairs
UNHCR	United Nations High Commission for Refugees
UNISDR	United Nations International Strategy for Disaster Reduction
WHO	World Health Organization

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1 Introduction

The dissolution of the Soviet Union presented Russia with a multitude of challenges which its existing security structures were not well equipped to manage. Elements of the former Soviet 'force structure' were reformed so as to be able to react effectively to the new security environment. As part of this process, EMERCOM was established as a ministry in 1994 to deal more effectively with natural disasters and industrial accidents.[1] Russia has regularly experienced major natural disasters and they are becoming more frequent.[2] This is one reason why it is of interest to understand better how Russia's system for disaster management and EMERCOM are organised, have developed and manage severe emergency situations.

The aim is to describe the role of EMERCOM of Russia (Ministry for Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters, sometimes referred to as the Ministry of Emergencies with the Russian acronym MChS) in managing natural disasters or major industrial accidents.[3] This is done by describing the Ministry's organisation and its development into one of Russia's so-called power ministries (it is one of the ministries that are under the control of the president rather than the prime minister). It is clear that the National Crisis Management Centre and the search and rescue services, including the rescue military units, play important roles.

To describe the role played by EMERCOM during emergencies and disasters, the report goes on to analyse how it and the government managed some recent severe natural disasters including wildfires and floods. Major disasters will challenge the political leadership and its credibility, therefore they need to be prevented or managed efficiently. The examples chosen are of such magnitude that they become severe challenges for the leadership and the Russian system for disaster management to manage.

[1] Streltsina, Milanna (2004) 'Russian EMERCOM: Participation in internal and external conflict resolution', in Nikitin, Alexander (ed.) *Peace Support Operations, Parliaments and Legislation*, Geneva, DCAF/CIPS, p. 131; and Renz, Bettina (2007) 'Crisis Response in War and Peace: Russia's "Emergencies" Ministry and Security Sector Reform', *World Defence Systems*, Issue 16, pp. 148–152.

[2] Roshydromet (2013) *Report on the specifics of climate on the territory of the Russia Federation in 2012*, Federal Service for Hydrometeorology and Environmental Monitoring of the Russian Federation, Moscow.

[3] Also translated as the Ministry of Civil Defence, Emergencies and Disaster Relief of the Russian Federation (Russian: Министерство России по делам гражданской обороны, чрезвычайным ситуациям и ликвидации последствий стихийных бедствий), also known as the Ministry of Emergency Situations (Russian: Министерство по чрезвычайным ситуациям - МЧС России), or internationally as EMERCOM.

The disasters were, moreover, large enough to demand emergency management at the federal level as well as the regional and local levels. This allows an examination of the interaction between the different levels. In addition EMERCOM's increasing international support operations for disaster relief will be examined. One recent example is the humanitarian convoys to eastern Ukraine since 2014.

The report aims to describe and analyse in more detail the following research questions: What role does EMERCOM play from the federal to the local level in managing emergency situations in Russia? Will the highest level of government have a role in managing this type of emergency situation? A related issue is how major natural disasters are managed so as not to affect negatively the image and credibility of the political leadership. How does the state's image and its capability to control a disaster affect the relationship between the federal and regional levels of disaster management? Have non-governmental organisations (NGOs) and the general public, including the use of the Internet, played a role when a natural disaster or industrial accidents occur, and if so what role? What role do the military rescue units play in the Ministry's organisation and for managing disasters? The report is limited to describing the role of the Ministry and its functions in peacetime. The effect of future climate change on risks of natural disasters will not be discussed as it was discussed in a previous FOI report.[4]

Chapter 2 gives a short introduction to Russia's policies for handling natural disasters or industrial accidents. This is followed by an overview of the national system for coordinating and implementing disaster risk reduction planning and emergency response in Russia. In this system EMERCOM has a leading role for coordination and for implementing policies. The third chapter presents EMERCOM, its historical development, tasks and examples of organisations under the Ministry and describes the central functions of the search and rescue services, including the military rescue units for high-risk missions and the firefighting service. Chapter 4 gives a short description of the growing area of international support operations to promote Russia's international image.

In chapter 5 a general overview is given of natural disasters in Russia followed by a more detailed description of the widespread forest fires in 2010 and the floods in 2012–2014. This is done to analyse how authorities, including EMERCOM, managed these and to identify any inefficiencies in the Russian governance system for managing emergency situations. A number of interesting observations can be made and these are discussed in the final chapter. In the appendices some additional information has been collected for reference on some organisational aspects not discussed in the report as well as some examples of natural disasters and major accidents. There is also a list of definitions concerning risks and

[4] Roffey, Roger (2014) *Climate Change and Natural Disasters: A challenge for Russian policymakers*, Stockholm, FOI-R-3874--SE, September 2014.

disasters that can be of help for the reader. The report can be used as a reference for what role EMERCOM has as well as for details on specific functions for the Ministry.

The method used to collect information was a literature review using three different databases[5] as well as Internet searches for official documents, news items and international publications on Russian disasters, policies on disaster management, and the different authorities' roles in handling emergencies with a focus on EMERCOM. The study uses both primary and secondary sources, EMERCOM official information on its website, government documents, documents from Russian agencies and other official documentation, and Russian and international scientific studies of EMERCOM and its role and handling of natural disasters and industrial accidents. Media articles are used to provide added insight into ongoing discussions in Russia on preparedness for disasters and how emergencies have been handled.

[5] The three databases were Scopus, ProQest and Ebsco.

2 The policies on and system of disaster risk reduction

After the Cold War there was a change in the perception of security threats in the West, and in Russia as well. There was a broader span of risks, not just military risks, to plan for. The terrorist attacks on 11 September 2001 in the US influenced the prioritisation of tasks within Russian civil defence planning as well.[6] The new approach focused more on civil crisis management, but it resulted in a rather reactive approach. Emergencies were dealt with when they occurred and less was done in terms of preventive measures.[7] The ability to confront different kinds of threats became part of Russia's policy on national security.[8]

2.1 Policies, legislation and regulation on disaster risk reduction

There is basic legislation on protection against natural and technological disasters from 1994.[9] A Russian Unified Emergency Rescue Service was created in 1992 in order to implement the state policy.[10] These and other emergency legislation regulates the protection of people and facilities against natural and technological hazards including those involving hazardous materials. It does not cover conflict-type emergencies (mass disturbances, riots, or local and regional wars).[11] The protection of critical infrastructure and responding to the risks from natural and

[6] Renz (2007) 'Crisis Response in War and Peace…', pp. 148–152.

[7] Porfiriev, Boris and Simons, Greg (2012) 'Conclusions Crises Management Policy in Transitional Societies – Beyond the Russian Experience', p. 274, in Porfiriev, Boris and Simons, Greg (eds.) *Crises in Russia: Contemporary Management Policy and Practice from a Historical Perspective*, Ashgate.

[8] Porfiriev, Boris and Svedin, Lina (eds.) (2002) *Crisis Management in Russia: Overcoming Institutional Rigidity and Resource Constraints*, Stockholm, Elanders Gotab.

[9] Federal law (1994) 'On community and area protection against natural and technological disasters', No. 68-03, 21 December; and Akimov, Valery and Porfiriev, Boris (2012) 'The Institutional Framework and Governance of Russia's Crises Policy: Disaster Focus', p. 64, in Porfiriev and Simons (eds.) *Crises in Russia …. .*

[10] Puchkov V. (2013) 'New Catalysts for Change, the Economics of Managing Major Catastrophes', St Petersburg International Economic Forum, 21 June, http://forumspb.com/bfx-cc/system/uploads/files/site_session_attr/stenogram_en/281/21_THE_ECONOMICS_OF_MANAGING_MAJOR_CATASTROPHES_EN.pdf (accessed 2014-10-15).

[11] Porfiriev, Boris (2001) 'Institutional and legislative issues of emergency management policy in Russia', *Journal of Hazardous Materials*, Vol. 88, pp. 145–167; Federal law (1992) 'On Safety', 5 March; President of Russia (1992) Decree No. 794, 30 December; Federal law (1994) 'On Protecting the Population and Territories from Emergency Situations', No. 68, 21 December; Federal law (2003) 'On Emergency-Rescue Services and Status of Rescue Personnel', No. 3; and MChS Order (2003) No. 200, 21 April.

technological accidents, as well as terrorism, were given higher priority from 2003.[12]

A number of amendments have been made since 2005. The legislation clarifies the government's powers to engage military rescue units to handle civil defence and disaster situations. The first government programme in this area came in 1999 with the Federal Target Programme (FTP) on risk reduction and the mitigation of natural and technological disasters (for the periods 1999–2004 and 2005–2010),[13] but these programmes showed limited progress. In 1998, an amendment to a law on civil defence clarified the powers of the president, who approves the structure and composition of military rescue units.[14]

One specific feature of the Russian emergency and disaster legislation is its federalisation or centralisation. This is not in line with the Constitution where it is stated that responsibility and governance there should be shared between the federal and regional authorities. There is a recent trend to include mitigation measures in emergency legislation and policies and not only be reactive and respond to emergencies when they occur.[15] Much of the legislation and regulations on disaster policy and emergency management has taken account of good practices in the European Union (EU) and other states.[16]

The Russian policy on protection of critical infrastructure was outlined in the early 2000s and has been consolidated in recent years. Maintenance of critical infrastructures are deficient and a safety culture at facilities is in many cases lacking.[17] President Vladimir Putin has stated that the protection of objects critical to national security from threats caused by mankind or generated by nature or terrorist threats is an urgent task.[18] Russia has legislation similar to the EU Seveso directive (96/82/EC) on industrial safety at hazardous industrial sites.[19] EMERCOM is focusing on promoting a safety culture in Russia so as to limit casualties due to industrial accidents. There is also a register of all hazardous industrial sites as well as an integrated approach to risk management. The national

[12] Pynnöniemi, Katri and Busygina, Irina (2013) 'Critical infrastructure protection and Russia's hybrid regime', *European Security*, Vol. 22, No. 4, pp. 559–575.
[13] Russian Government (1999) Federal Targeted Programme for 'Risk Reduction and Mitigating of Natural and Technological Disasters in the Russian Federation up to 2005', 1999–2004, No. 1098, 29 September; and Russian Government (2006) Federal Targeted Programme for 'Risk Reduction and Mitigating of Natural and Technological Disasters in the Russian Federation up to 2010', 2005–2010.
[14] Akimov, Valery and Porfiriev, Boris (2012) 'The Institutional Framework and Governance of Russia's Crises Policy: Disaster Focus', p. 68, in Porfiriev and Simons (eds.) *Crises in Russia* …..
[15] *Ibid*, p. 66.
[16] *Ibid*, p. 71.
[17] Pynnöniemi and Busygina (2013) 'Critical infrastructure protection and Russia's hybrid regime …', p. 560.
[18] The joint session of the Security Council and the State Council in November 2003.
[19] Federal law (1997) 'On the industrial safety of hazardous industrial facilities', No. 116-03.

policy is based on a national inventory of the potential risks and vulnerabilities in Russia.[20]

The state policy on improvement of chemical, biological and nuclear security from 2003 indicated a change in policy away from more general emergency situations to protection of critical sites mainly from terrorist acts and towards the requirements of national security in general and sites important for socio-economic development. This resulted in the national strategy for the physical protection of critical infrastructure and key assets from 2003. In 2006, a presidential concept paper became the basis for state policy in this area.[21] The aim was to develop a scientifically based method for risk management and a set of long-term strategies. Monitoring and forecasting capacities were to improve.[22]

During the period 2000–2010, five federal and 67 regional programmes for disaster reduction and emergency management were implemented. Up to 2010, over 50 federal laws, more than 20 decrees of the president, some 300 regulations and over 1 000 regional acts dealing with emergencies and disasters had been approved.[23] In 2002, EMERCOM was given responsibility for disaster recovery as well, and in 2004–2005 reforms shifted some of EMERCOM's responsibilities for disaster preparedness and planning from the federal level to regional or local levels. Since then there has been a trend to revert to a more state-centric approach.[24] As mentioned above, the Russian conceptualisation of disaster risk reduction and crisis management is similar to those in the EU countries. Russia, like most countries, is aiming for an all-hazard approach to risks.[25] The 2013 Concept of Foreign Policy aims to strengthen international cooperation as an important part of global and trans-European efforts for capacity building and of responding to emergencies (paragraph 32s).[26]

[20] AP/CAT (2005) *Comparative analysis of the Inter-ministerial Management of Major Hazards: Belgium, France, Russia, Bulgaria,* Council of Europe, 30, EUR-OPA major hazards agreement, Strasbourg, 21 June 2005, pp. 85 and 89.

[21] Pynnöniemi and Busygina (2013) 'Critical infrastructure protection…', pp. 560 and 567; and President of Russia (2006) 'Foundation of state policy in the area of monitoring the safety of the people of the Russian Federation and the security of critical important and potentially dangerous threats of man-triggered or natural and terrorist character', Pr-1648, 28 September.

[22] Government of Russia (2011) 'On the Federal Programme, On the reduction of risks and moderation of the consequences of emergency situations caused by natural or man-triggered disasters in the Russian Federation until 2015', No. 555, 7 July.

[23] *RIA Novosti* (2011) 'Russian President Dmitry Medvedev on Thursday called for international legislation to prevent and reduce the impact of disasters', 14 April.

[24] Porfiriev, Boris and Simons, Greg (2012) 'Conclusions Crises Management Policy in Transitional Societies – Beyond the Russian Experience', chapter 10, p. 280–281, in Porfiriev and Simons (eds.) *Crises in Russia …. .*

[25] Roffey, Roger (2014) *Climate Change and Natural Disasters …. .*

[26] Russian Ministry of Foreign Affairs (2013) 'Concept of the Foreign Policy of the Russian Federation', 12 February.

EMERCOM is the key federal governmental body responsible for coordinating civil emergency planning, search and rescue operations, and the evacuation process during major natural disasters and technological emergencies. Meanwhile, the other emergency and disaster management functions (medical care, transport, maintaining public order and other services during major operations) are the responsibility of other federal agencies.[27]

The system for protection of the population must be united and integrated for both peace- and wartime conditions.[28] The increased threat of chemical, biological, radiological and other kinds of weapons has led the civil defence management to pay more attention to counterterrorism and managing the effects of large-scale terrorist attacks, as well as to develop laboratory control and observation networks.[29]

In 2008, the National Crisis Management Centre (NCMC) was established.[30] Some regulations concerning EMERCOM's handling of natural and technological disasters were updated in 2009 as well as those on civil defence.[31]

EMERCOM has developed a draft doctrine on civil defence in case of technological disasters and military threats. Unlike the doctrine that is in effect now, the new one will not presuppose so-called general evacuation, under which the entire civilian population should walk out of a city on foot in the event of an enemy force approaching. A major change in the civil defence doctrine has been required by, among other things, the developments in eastern Ukraine. This has led the government to develop a new strategy that should also include shelters and other civil defence installations that do not need to be nuclear-proof but should protect against shell fragments and the debris of collapsing buildings.[32]

Russia has also updated its CBRN (chemical, biological, radiological and nuclear) defence doctrine and produced new documents on chemical and biological safety. Regional programmes have been developed for CBRN protection which are already being implemented in the nationwide civil defence system.[33] The Russian

[27] Porfiriev and Svedin (2002) *Crisis Management in Russia…*.
[28] MChS, Civil Defence Troops, http://en.mchs.ru/Forces_and_Facilities/Civil_Defence_Troops (accessed 5 March 2014).
[29] *Ibid.*
[30] President of Russia (2008) Decree 'On a Federal Public Institution National Crisis Management Centre', Decree No. 1515, 23 October.
[31] Russian Government (2009) 'On Revising the Provision Concerning Government Supervision in the Area of Community and Area Protection in Natural and Technological Disasters Exercised by EMERCOM', Resolution 346, 22 April; and Russian Government (2009) 'On amending the provision, On the Integrated State System for Emergency Prevention and Response', Regulation 577, 16 July.
[32] *TASS* (2014) 'Russia EMERCOM drafting new doctrine of population's defense from manmade disasters', 7 October.
[33] Winfield, Gwyn (2014) 'Russian CBRN defence training is stepped up', *CBRNe World*, 14 November.

authorities have indicated a need to revive the old Cold War practice of training civilians how to respond in the event of a large-scale nuclear attack[34] and large civil defence exercises have been carried out. Many people were reported to have taken part in a month-long nationwide training for civil defence in October–November 2014. This was the second large exercise in two years. All of Russia's 85 regions participated – Crimea and Sevastopol took part for the very first time.[35] Cold War-era bunkers are being renovated and prepared for use and all Russians (over 140 million people) will be provided with shelter from nuclear attack and radioactive fallout in the event of war with the US. Putin has ordered mass production of gas masks to defend the Russian population against radioactive fallout, and gas and germ attacks.[36]

EMERCOM is also part of the new National Defence Management Centre (NMCC), which has been tasked since 2014 with monitoring the Russian and global security situation. It aims to integrate the leadership and direction of defence and security structures in real time. The new centre coordinates several state structures, including the Ministry of Defence, the General Staff, the Ministry of Internal Affairs (MVD), EMERCOM's NCMC, Rosatom, Roshydromet and others, in an integrated system. The centre neither substitutes nor duplicates the functions of existing military headquarters or control agencies.[37] It has functioned as a new federal unit since December 2014.[38]

[34] *Reuters* (2015) 'Russian calls for Cold War civil defence training to be revived', 30 October.

[35] *Defence Russia* (2014) 'More than 60 million people participated in all-Russian training for civil defense', 9 October, https://defencerussia.wordpress.com/2014/10/09/more-than-60-million-people-participated-in-all-russian-training-for-civil-defense/ (accessed 2016-01-20); and *Defence Russia* (2014) 'More than Russian Emergencies Ministry 30 aircraft involved in the All-Russian civilian defense exercise', 8 October, https://defencerussia.wordpress.com/2014/10/08/more-than-russian-emergencies-ministry-30-aircraft-involved-in-the-all-russian-civilian-defense-exercise/ (accessed 2016-01-20).

[36] Felgenhauer, Pavel (2016) 'Putin Signs a National Security Strategy of Defiance and Pushback', *Eurasia Daily Monitor*, Vol. 13, Issue 4 (7 January).

[37] McDermott, Roger (2015) 'Russia Activates New Defense Management Center', *Eurasia Daily Monitor*, Vol. 11, Issue 196 (4 November).

[38] Tsymbal, V. and Zatsepin, V. (2015) 'A New Russian National Defence Control System: Reform or Imitation?' *Russian Economic Developments*, Issue 5 May, pp. 45–47; and Russia and India Report (2015) 'National Defence Management Centre established in Moscow, 4 November'.

2.2 The Russian system for disaster management

The national structure for coordinating and implementing disaster risk reduction is the Unified Emergency Prevention and Response State System in Russia (RSChS)[39] which was established in 1992.[40] Within this system, the main coordinating body is the Government Commission on Preventing and Eliminating Emergency Situations and Ensuring Fire Safety. The Commission is headed by Vladimir Puchkov, minister of EMERCOM. It was set up in 2003 and coordinates the efforts of executive authorities, state and other organisations in implementing state policy on the prevention and relief of natural and technological emergencies and on fire safety.[41] The Commission has the following responsibilities:[42]

- to make suggestions on state policy on emergency prevention, emergency relief and fire safety;
- to coordinate the activities of the country's unified system of emergency prevention and relief;
- to coordinate efforts of federal bodies of executive authority in emergency prevention and relief and fire safety, as well as in restoring old or building new housing, public utilities, social amenities, and production and engineering infrastructure damaged or destroyed as a result of an emergency situation; and
- other objectives in emergency prevention and relief and fire safety.

The Commission works with federal bodies, local management bodies, public associations, and the respective international and intergovernmental organisations.[43] It is the coordinating body for provision of joint actions and for state policy in the field of prevention and elimination of emergencies of a natural

[39] Alternative translations and abbreviations used are Joint Federal Network for Prevention and Elimination of Emergencies (JFNPEE) and Unified State System for Emergency, Prevention and Elimination of the Russian Federation (USEPE).

[40] MChS (2013) *Natural and Man-made Risk Assessment in the Russian Federation*, 14:3 Working together on Macro-Regional Risk, Saint Petersburg University of State Fire Service and Ministry of the Russian Federation for Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters, p. 9.

[41] UNISDR (2013) 'Russian Federation, The United Nations Office for Disaster Risk Reduction', http://www.unisdr.org/partners/countries/rus (accessed 2013-12-20).

[42] Russian Government (2015) 'Government Commission on Preventing and Eliminating Emergency Situations and Ensuring Fire Safety', http://archive.government.ru/eng/gov/agencies/165/ (accessed 2015-11-02).

[43] Prevention Web, Russian Federation National Platform, Hyogo Framework, http://www.preventionweb.net/english/hyogo/national/list/v.php?id=142 (accessed 2013-03-09).

or technological kind. Many ministries and federal and state agencies are members of the Commission (see Table 1).[44]

2.3 The main tasks of the RSChS system

The primary goal of the RSChS is to integrate the efforts of the executive branch agencies at both the federal and the Russian Federation subject levels. The main objectives of activities under the state system are:[45]

- monitoring and predicting extreme situations;
- training specialists in emergency prediction and response;
- educating the public on actions to be taken in emergencies;
- developing preventive measures to reduce the risks and lessen the consequences of emergencies; and
- improving the management of emergency prediction and response measures.

The structure of the RSChS system consists of the territorial and functional subsystems, and has five levels, federal, federal district, regional, local and facility level (see Figure 1). The centres at the federal district level are in North-West (St Petersburg), Central (Moscow), North Caucasian (Rostov), Volga (Samara), Ural (Yekaterinburg), Siberia (Krasnoyarsk) and Far East (Khabarovsk) and centres in the Republic of Crimea and the City of Sevastopol.[46] Each level of the RSChS has coordinating authorities, permanent control bodies for civil defence and emergencies, agencies of daily management, capacities, and reserves of financial as well as material resources, communication, warning and information support.[47] The RSChS integrates management bodies, forces, federal bodies, local administrations and organisations to protect the population and territories in emergency situations. It is coordinated by EMERCOM with responsibility for implementing disaster management policies (see Figure 1).[48]

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[44] Akimov, Valery and Porfiriev, Boris (2012) 'The Institutional Framework and Governance of Russia's Crises Policy: Disaster Focus', p. 73, in Porfiriev and Simons (eds.) *Crises in Russia* .....

[45] MChS (2013) *Natural and Man-made Risk Assessment*…, pp. 9–10; and Kopylov, Nikolai P. and Khasanov, Irek R. (2009) 'Use of Predictive Modeling Packages for Effective Emergency Management', pp. 32–45, chapter 5 in *Countering Terrorism: Biological Agents, Transportation Networks, and Energy Systems. Summary of a U.S.-Russian Workshop*, Glenn E. Schweitzer, Rapporteur, Committee on Counterterrorism Challenges for Russia and the United States, Office for Central Europe and Eurasia, National Academy of Sciences, in cooperation with the Russian Academy of Sciences.

[46] MChS (2013) *Natural and Man-made Risk Assessment*…, p. 11.

[47] MChS (2013) *Natural and Man-made Risk Assessment*…, p. 9.

[48] Akimov and Porfiriev (2012) 'The Institutional Framework and Governance of Russia's Crises Policy…', p. 66.

How the RSChS operates depends on the situation and the scale of a predicted or actual emergency. There are three regimes of operation:[49] daily, high-alert and emergency regimes. EMERCOM is responsible for the federal and macro-regional levels, while regional and local levels have their own Civil Defence and Emergency and Disaster Management Commissions, often organised as Crisis Management Centres. At the on-site level there are similar commissions or authorised persons.[50] In total, the RSChS includes around 5 000 organisational units in the subjects of the Russian Federation, of which 1 500 are in urbanised areas and cities and 20 000 in towns and villages.[51] Moscow has a city system for emergency prevention and elimination.

Table 1. Members of the Unified Emergency Prevention and Response State System in Russia (RSChS)

MChS/EMERCOM
Ministry of Defence (MoD)
Ministry of Interior (MVD)
Ministry of Labour and Social Security
Ministry of Healthcare
Ministry of Education and Science
Ministry for Natural Resources and Environment
Ministry of Industry and Trade
Ministry of Agriculture
Ministry of Communications and Mass Media
Ministry of Energy
Ministry of Economic Development
Ministry of Transport
State Corporation ROSATOM
Federal Service for Environmental, Technological and Nuclear Supervision
Federal Space Agency
Federal Agency for Fisheries

Source: EMERCOM presentation 2014, http://nidm.gov.in/easindia2014/err/pdf/session/1/6.pdf (accessed 2015-03-05).

[49] MChS (2013) *Natural and Man-made Risk Assessment*…, p. 14.

[50] Pursiainen, Christer, Hedin, Sigrid and Hellenberg, Timo (2005) *Civil Protection Systems in the Baltic Sea Region: Towards Integration in Civil Protection Training*, Eurobaltic Publication No. 3, Aleksanteri Institute, University of Helsinki, pp. 17–18.

[51] Akimov and Porfiriev (2012) 'The Institutional Framework and Governance of Russia's Crises Policy…', p. 73. Since 18 March 2014 the Russian Federation has consisted of 85 subjects of the federation that are constituent members of the Federation. However, two of these, the Republic of Crimea and the federal city of Sevastopol, are internationally recognised as part of Ukraine. There are six types of federal subjects: 22 republics, nine krais, 46 oblasts, three federal cities, one autonomous oblast, and four autonomous okrugs. All of the federal subjects are grouped into nine federal districts, each administered by an envoy appointed by the president of Russia.

There are several other ministries responsible for various aspects of natural disasters, such as medical care, transport and evacuation, and so on. These include for example the MVD, the Ministry of Healthcare, the Ministry of Transport and the Ministry of Communication, as well as state committees, federal agencies and other entities. These are all integrated into the RSChS (see Table 1).[52]

If disaster resources are inadequate, local authorities can make a request for assistance from a higher level, to be channelled through EMERCOM. If necessary, federal assets may also be employed. In the event of emergencies or crises on a federal scale (for a definition see Appendix 1), a special Government Commission or so-called Federal Operational Headquarters may be set up at the NCMC, where representatives from various bodies of executive power of the rank of minister or deputy minister work together under the minister of EMERCOM or the prime minister to ensure the most effective federal response to an emergency.[53]

Figure 1. The Russian national emergency structure

Source: Based on information from EMERCOM presentation 2014, http://nidm.gov.in/easindia2014/err/pdf/session/1/6.pdf (accessed 2015-10-05).

[52] Porfiriev, Boris (2012) 'Managing Alleviation of the 1995 Neftegorsk Earthquake Disaster: A Reminiscence', p. 88, in Porfiriev and Simons (eds.) *Crises in Russia ….*

[53] MSB (2009) *International CEP Handbook 2009, Civil Emergency Planning in the NATO/EAPC Countries*, Swedish Civil Contingencies Agency (MSB), MSB No. 0039-09, AB Danagårds Grafiska, pp. 189–193.

3 The Russian Ministry EMERCOM

The actual name of EMERCOM is the Ministry for Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters (the Russian acronym is MChS). It is responsible for drafting and implementing government policies and legal regulations, carrying out control and oversight in the field of civil defence and protecting citizens and territories from natural and technological disasters as well as for providing fire and water safety. The Ministry is also responsible for emergency rescue and other urgent efforts involved in eliminating the consequences of terrorist attacks.[54] This chapter aims to provide an outline of the organization and functions of the EMERCOM. It starts with an historic background and goes on to describe the main tasks as well as important functions.

EMERCOM has approximately 300 000 employees of whom 220 000 are personnel of the State Fire Service.[55] There are 85 main offices, one in every subject of the Russian Federation and eight regional district centres.[56] The regional district centres are the Central Regional Centre, Southern Regional Centre, North-Western Regional Centre, Far-Eastern Regional Centre, Siberian Regional Centre, Ural Regional Centre, Volga Regional Centre and North-Caucasian Regional Centre. In addition there are the main offices for the City of Moscow, the Republic of Crimea and the City of Sevastopol.[57]

Vladimir Puchkov, who replaced Sergei Shoigu as head of EMERCOM in 2012, is an army lieutenant general.[58] There is a high proportion of generals in the Ministry – one for every 160 servicemen. The military rescue units of EMERCOM are led by more than 100 generals (the ranking system is the same as for the MVD).[59]

EMERCOM is one of nine federal 'power ministries' directly subordinated to the president, many of which have their own uniformed personnel. EMERCOM has the third-largest armed force among these.[60] The terms of service of many of the

[54] EMERCOM of Russia 15 Years 1990–2005, http://pda.mchs.ru/upload/site1/2v1.pdf /2013 (accessed 2015-03-05).
[55] Renz, B. (2007) 'Crisis Response in War and Peace: Russia's Emergencies Ministry and Security Sector Reform', *World Defence Systems*, pp. 148–152.
[56] MChS, http://en.mchs.ru/ (accessed 2015-03-05).
[57] *Ibid*.
[58] MChS (2015) 'New military and special ranks conferred on Emergencies Ministry senior officers', Presidential Decree, 21 February.
[59] Dobrolyubov, Nikolay (2013) 'Emergency at the Defense Ministry', *Moscow Defense Brief*, No. 2, pp. 27–31.
[60] Vendil Pallin, Carolina (2007) 'The Russian Power Ministries: Tool and Insurance of Power', *Journal of Slavic Military Studies*, Vol. 20, No. 1, pp. 1–25; and Bettina Renz defines power ministries as: 'Force structures are defined as ministries and other institutions within the federal system of executive power that have under their command uniformed personnel and/or command of their own militarized or armed formations'. Renz, Bettina (2005) 'Russia's "Force Structures"

uniformed personnel are the same as apply for the regular Ministry of Defence (MoD) Armed Forces.[61] EMERCOM is also engaged in international humanitarian support and disaster management as well as a part of Russia's military intelligence structure.[62]

3.1 Historical development

The State Civil Defence organisation in Russia originates from 1932 when the Council of People's Commissars adopted the Rules and Regulations related to the Civil Air Raid Defence. During the Soviet era, specialised civil defence subunits were maintained in order to provide assistance to the population after bombing raids and nuclear, biological or chemical attacks.[63] The civil defence troops retained their wartime role and were charged with the organisation and coordination of civil defence as well as in situations of natural or technological disasters.[64]

The failure to cope adequately with catastrophes such as the Chernobyl nuclear reactor incident in 1986[65] and the earthquake in Armenia (the city of Spitak, with 25 000 dead[66]) in 1988 made it essential to improve the way disasters should be handled.[67] These incidents demonstrated the need to set up an efficient system for preventing and responding to all types of emergencies. Mikhail Gorbachev came into office in 1985 and with time he implemented policies of openness which also affected how disasters should be handled, in contrast to, as previously, keeping disasters and accidents secret.

In the 1990s, there was a shift away from centralised crisis planning and crisis response to a more decentralised model. There was also a shift from a strong military orientation to peacetime planning with more civilian institutions involved in crisis management.[68]

and the Study of Civil-Military Relations', *Journal of Slavic Military Studies*, Vol. 18, No. 4, pp. 559–585.

[61] Renz (2007) 'Crisis Response in War and Peace…', pp. 148–152.

[62] *Stratfor Analysis* (2009) 'Russia: A Domestic Battle – Fought Abroad', 16 November, p. 16.

[63] MChS, Civil Defence Troops, http://en.mchs.ru/Forces_and_Facilities/Civil_Defence_Troops (accessed 5 March 2014).

[64] Renz (2007) 'Crisis Response in War and Peace…', pp. 148–152.

[65] Vorobyov, I. N. (2008) 'Employment of Combined-Arms Formations in the Elimination of Natural and Man-Made Disasters', *Military Thought*, Vol. 17, No. 2, pp. 41–47.

[66] Bradley, Penuel K. and Statler, Math (2011) 'History of relief, Russia', pp. 296–298, in *Encyclopedia of Disaster Relief*, Sage Publications.

[67] Timothy, Thomas (1995) 'Emercom: Russia's Emergency Response Team', *Low Intensity Conflict and Law Enforcement*, Vol. 4, No. 2, p. 227.

[68] Pursiainen, Hedin and Hellenberg (2005) *Civil Protection Systems in the Baltic Sea Region …*,. pp. 17–18.

One consequence was that on 27 December 1990, the Russian Rescue Corps (headed by Sergei Shoigu) was established.[69] Until 1991, Russia lacked any coordinated state agency for addressing public protection issues in wartime and peacetime on a comprehensive basis. In July 1991 the Rescue Corps was renamed the Russian Soviet Federative Socialist Republic (RSFSR) State Committee for Emergencies with Shoigu as chairman.[70] During the attempted coup in August 1991, Shoigu backed President Boris Yeltsin. Immediately after the coup, Shoigu took over the headquarters and material assets of the so-called Doguzhiev Commission, which was set up to deal with the aftermath of the earthquake in Armenia in 1988.[71]

In November 1991, after reorganisation and having subsumed the civil defence headquarters, the Committee for Emergencies became, with a slight modification of its name, the Russian Federation State Committee for Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM) with Sergei Shoigu as chairman and placed under the Presidential Administration.[72] In November 1991, according to a presidential decree, 23 000 military personnel were transferred with all their special hardware, real estate, and many military assets from the Ministry of Defence and became part of the Civil Defence Forces of the EMERCOM Committee.[73] The Civil Defence Troops

[69] On 27 December 1990, a decree by the Council of Ministers of the RSFSR No. 606 'On the establishment of the Russian Rescue Corps as the RSFSR State Committee, as well as the formation of a unified state and social system of forecasting, prevention and emergency response', was adopted. In April 1991 the head of the Rescue Corps was appointed. 'Major-General Sergei Shoigu', http://www.cseea.ro/upload_tiny_mce/file/History.doc (accessed 2016-02-23).

[70] On 30 July 1991, by Resolution No. 1617-1 of the Presidium of the Supreme Soviet of the Russian Soviet Federative Socialist Republic, the Russian corps of rescuers was reorganised into the State Committee of the Russian Soviet Federative Socialist Republic on Emergencies. On 5 August 1991 Sergey Shoigu was appointed chairman of the Committee: http://www.cseea.ro/upload_tiny_mce/file/History.doc (accessed 2016-02-23); 'Sergei Shoigu, Minister of Defence of the Russian Federation, General of the Army', http://eng.mil.ru/en/management/minister.htm (accessed 2015-03-05); and Dobrolyubov (2013) 'Emergency at the Defense Ministry…', pp. 28–32.

[71] The joint Presidential State Committee for Civil Defence, Emergencies and Disaster Relief (GKChS) was established under Presidential Executive Order No 221 dated 19 November 1991; and see Dobrolyubov (2013) 'Emergency at the Defense Ministry…', pp. 28–32.

[72] Dobrolyubov (2013) 'Emergency at the Defense Ministry…', pp. 28–32. On 19 November 1991 – by Decree No. 221 of the President of the Russian Soviet Federative Socialist Republic on the basis of the GKChS of the RSFSR and Headquarters of Civil Defence of the Russian Soviet Federative Socialist Republic – the State Committee of Emergencies at the President of RSFSR (GKChS RSFSR) was created. Sergey Shoigu was appointed the chairman. Simultaneously by a Resolution of 28 November 1991, the Commission on Emergencies of the Soviet of Ministers of RSFSR was cancelled; and on 18 December 1991 – by Decree No. 305 of the President 'On the State committee of emergencies at the President of RSFSR' – the headquarters of the civil defence force of the RSFSR and nine regional centres of GOChS were established. See http://www.cseea.ro/upload_tiny_mce/file/History.doc (accessed 2016-02-23).

[73] MChS, Civil Defence Troops….

consisted of rescue brigades, mechanised civil protection regiments and battalions, special protection companies and detached helicopter squadrons. The Civil Defence Troops were military units under the control of the EMERCOM Committee. They could also detect and mark areas of radiation, chemical and biological pollution, protect civilians and decontaminate polluted equipment, buildings and territories.[74]

From that time on all the activities of civil defence in Russia were related to the EMERCOM Committee and later to the Ministry EMERCOM.[75] The tasks for civil defence were set out in a decision by the Duma in 1998.[76] The decision[77] to retain a military element in the EMERCOM Committee was probably due to the political leadership's need to avoid exacerbating the problems of unemployment amongst service personnel after the 'downsizing' of the Armed Forces at the end of the Cold War.

Figure 2. EMERCOM uniformed force, Victory Day parade, Samara, Russia

Source: EMERCOM uniformed force parade, http://www.pd4pic.com/parade-victory-day-samara-russia-area.html (accessed 2016-02-12).

[74] MChS, Civil Defence Troops….; and Federal law (1998) 'On Civil Defence', No. 28-FZ, 12 February.
[75] *Ibid.*
[76] Federal law (1998) 'On Civil Defense', No. 28-FZ, 12 February. (This was the first time in Russia civil defence issues were regulated by law.)
[77] *Ibid.*

In 1992 the first system for warning and emergency response was established, transformed later into a single state system of emergency management and becoming the RSChS.[78]

Shoigu's loyalty was again tested when in September–October 1993 the Russian parliament rebelled against Yeltsin. The entire EMERCOM Committee was behind Yeltsin and ready to defend the president.[79] In return, Yeltsin increased further the Committee's power and expanded its remit.[80]

In 1994, the EMERCOM Committee was transformed into a ministry with Shoigu as its minister and a member of the Russian Security Council.[81] EMERCOM subsumed the remaining parts of the State Committee for Eliminating the Aftermath of the Chernobyl Disaster and part of the secret Committee for Special-Purpose Underwater Operations (although in the 2000s some of the functions of the latter service were taken over again by the MoD).[82]

In 1995, two federal laws were signed that laid the foundation for government policy and legal norms for the protection of the population, on the one hand, and for rescuers, on the other.[83] In 1996, a presidential decree created under EMERCOM the federal EMERCOM Agency for Support and Coordination of Russian Participation in International Humanitarian Operations (for its place in the organisational structure see Appendix 3).[84] During the period 1994–2000

[78] Akimov and Porfiriev (2012) 'The Institutional Framework and Governance…', pp. 63–64; 28 July 1992 – Resolution No. 528 'On improvement of activity of tourist and climber rescue services, points and centres' of the Government of the Russian Federation was adopted. Forming of the search and rescue service of GKChS of Russia started; and in November a Government decree approved the Regulations on the Russian Federation State Committee for Civil Defence, Emergencies and Disaster Relief, http://www.cseea.ro/upload_tiny_mce/file/History.doc (accessed 2016-02-23).

[79] Pursiainen, Hedin and Hellenberg (2005) *Civil Protection Systems in the Baltic Sea Region …*, pp. 17–18.

[80] Finch, Ray (2013) 'Sergey Shoygu Russia's Emergency Defense Minister: a Bio-Sketch', *FMSO*, http://fmso.leavenworth.army.mil/documents/Finch-Shoygu.pdf (accessed 2015-03-17); and Dobrolyubov (2013) 'Emergency at the Defense Ministry…', pp. 28–32.

[81] The MChS was set up by presidential decree No. 66 'On structure of federal executive bodies' on 10 January; Sergey Shoigu was appointed the Minister of Emergencies of the Russian Federation by Decree No. 171 of the President of the Russian Federation on 20 January 1994; and on 21 December 1994 the law was adopted 'On protection of population and territories from emergency situations of natural and anthropogenic character', which became the main instrument of control both in the field of emergency prevention, risk reduction, and in terms of disaster recovery and natural disasters relief, http://www.cseea.ro/upload_tiny_mce/file/History.doc (accessed 2016-02-23).

[82] Dobrolyubov (2013) 'Emergency at the Defense Ministry…', pp. 28–32.

[83] Federal law (1995) 'On Emergency Rescue Services and Status of Rescuers', No. 151-FZ, 22 August 1995; and Federal law (1995) 'On Protection of Population and Territories from Natural and Man-Made Emergencies', No. 68. The Unified Emergency Prevention and Response State System in Russia (RSChS) operates in accordance with this law.

[84] EMERCOM Agency, http://www.emercom.ru/about_e.html (accessed 2014-03-06).

emergency policies underwent several significant changes, resulting in an all-hazard approach to risks and including mitigation and risk reduction strategies.[85]

In December 2001, Shoigu was appointed United Russia's party co-chairman, probably due to his loyalty to the president and his popularity among ordinary Russians. In 2002 some 220 000 firefighters, formerly assigned to the Interior Ministry's State Fire Service, were transferred to EMERCOM, further strengthening Shoigu's position. This brought the number of uniformed men under the minister's command high enough for him to be made an army general in 2003.[86]

On 5 January 2004, the president approved the 'Fundamentals of the Unified State Policy in the Field of Civil Defence for the Period up to 2010'. The document laid the foundation for the jurisdiction of civil defence in the new political and socio-economic conditions, and defined objectives, main directions and ways to implement this policy.[87]

In 2011, the Civil Defence Troops were transformed into military rescue units and became part of the Search and Rescue Service of EMERCOM (see Appendix 3). The aims for civil defence up to 2020 are defined as to improve the methods and ways of protecting the population, resources and items of cultural value against consequences due to military operations, as well as handling emergency situations due to natural and technological disasters, developing forces to be used for civil defence, supporting the survival of the population during wartime, improving the systems of education and training in the field of civil defence, and developing international cooperation in the field of civil defence.[88] In 2015, the Ministry marked its 25th anniversary.[89] The Ministry of Defence announced in 2015 that special regular defence units had been designated that will also be available for handling natural disasters. These units consist of 12 000 soldiers from regular army units, railway troops, engineering and logistics troops, and airborne capabilities.[90]

Sergei Shoigu led EMERCOM from 1991 to 2012. He then went on to become minister of defence in November 2012 (after a brief spell as governor of the Moscow Region). Shoigu's closest EMERCOM colleagues followed him to the

[85] Porfiriev, Boris and Simons, Greg (2012) 'Conclusions Crises Management Policy in Transitional Societies – Beyond the Russian Experience', pp. 289–290, in Porfiriev and Simons (eds.) *Crises in Russia* ….

[86] 'Sergei Shoigu, Minister of Defence of the Russian Federation, General of the Army', http://eng.mil.ru/en/management/minister.htm (accessed 2015-03-05).

[87] MChS, Civil Defence Troops….

[88] MChS, Civil Defence Troops….; and President of Russia (2011) Decree 'On the foundations of a unified state policy of the Russian Federation in the field of civil defense for the period until 2020', No. Pr – 2613, 3 September.

[89] 'Russian Emergencies Ministry opens jubilee Constellation of Courage', http://en.mchs.ru/articles/interviews/item/598636/ (accessed 2015-10-05).

[90] Ministry of Defence, Press release, 18 April 2014; and *ITAR-TASS* (2015) Press release, 18 April.

Moscow governor's office and then on to the MoD, where he placed them in leading positions.[91] It is common practice for close colleagues to follow their head to a new ministry or agency as they do not want to lose their position or rank. In this case it meant that EMERCOM lost some high-ranking officials with long experience of managing emergency situations.

In conclusion, Sergei Shoigu transformed a small corps of volunteer emergency and rescue specialists into the country's third-largest paramilitary agency in about 20 years. The Ministry has kept transforming itself and expanding its remit by subsuming various other services. Vladimir Puchkov replaced Sergei Shoigu as minister of EMERCOM in 2012.[92]

3.2 The main tasks of EMERCOM

EMERCOM's main tasks are to develop and implement state policies in the field of civil defence; the protection of the population and territories against emergencies; providing fire safety; and improving people's safety on waterways (for details of EMERCOM's organisational structure, see Appendix 2).[93] EMERCOM is the main coordinator when major emergencies and disasters occur. Minor accidents, which are the most common, are the responsibility of local and regional authorities including the regional police, medical services, emergency services and technical support services.[94] EMERCOM is furthermore responsible for four government commissions:[95]

- the Interagency Commission of the Russian Federation for Fighting Forest Fires;
- the Interagency Commission of the Russian Federation for Floods;
- the Interagency Maritime Coordinating Commission for Emergencies on the Seas and Water Basins; and
- the Interagency Commission of the Russian Federation for the Certification of Rescuers.

Substantial resources are concentrated at the federal level, so that EMERCOM is an important response actor. The bulk of search and rescue units in different regions are operated by EMERCOM regional centres. These are usually not strong enough to handle major emergencies and they need support from other units as

[91] Dobrolyubov (2013) 'Emergency at the Defense Ministry…', pp. 27–31.
[92] *Ibid.*
[93] MChS, 'Tasks', http://en.mchs.ru/ministry/Tasks (accessed 2014-03-06).
[94] Karpenko, Anna, Krasnov, Eugene and Simons, Greg (2014) *Crisis Management Challenges in Kaliningrad*, Ashgate.
[95] MChS, http://en.mchs.ru/ (accessed 2015-03-05).

they are scattered over the whole country.[96] When a disaster occurs EMERCOM establishes a headquarters for joint operations, for coordination of armed units of the Internal Troops, and for the Federal Security Service (FSB) or law enforcement if required.[97]

The principal functions of the Ministry are:

- scientific and technical programmes for the prevention of emergencies;
- preparation of the forces and means for the prevention and handling of emergencies;
- permanent surveillance and risk analysis;
- training of the population in case of emergency;
- prediction and estimation of the consequences of emergencies;
- permanent renewal of supplies, both financial and material;
- inspection and declaration of conformity with security standards in force for businesses and public establishments at risk;
- elimination of the consequences of emergencies;
- measures of social protection for affected persons; and
- international cooperation in the area of protection of the population.

EMERCOM encompasses (see also the organisational structure in Appendix 2):[98]

- the National Crisis Management Centre (NCMC);
- regional centres for civil defence, emergencies and elimination of the consequences of disasters;
- military rescue units, part of the Search and Rescue Service, stationed in various parts of the country;
- Search and Rescue Service, comprising 58 subdivisions in the republics, territories and regions of the country;

[96] Karpenko, Krasnov and Simons (2014) *Crisis Management Challenges* ….
[97] Vorobyov (2008) 'Employment of Combined-Arms Formations…', pp. 41–47.
[98] MChS (EMERCOM), International Civil Defence Index, http://www.icdo.org/Directory%20ORIGINAL/Directory-english/Russia.maj.2006.ang.pdf (accessed 2014-03-08).

- more than 70 aircraft and helicopters in National Aviation Company[99] and eight aviation centres, which are located in Zhukovsky (Moscow Region), Pulkovo-2 airport (near St Petersburg), Rostov-on-Don (the Yuzhny aviation centre includes Crimea), Nizhny Novgorod, Yekaterinburg, Mineralnie Vodi, Krasnoyarsk and Khabarovsk;
- the Academy of Civil Defence (the highest institution in the field, giving professional and scientific specialised education up to doctoral degree level);
- the Academy of Fire Fighting;
- centres of education and methodology of civil defence and assistance in the territories, regions, autonomous zones and towns of Moscow and St Petersburg; and
- the National Observation Laboratory.

The Ministry operates fleets of specialised firefighting aircraft, including Il-76 and Be-200 amphibian aircraft, and Mi-26 helicopters.[100] EMERCOM has 51 helicopters and 20 aircraft and the fleet will be expanded to 200 aircraft by 2020.[101] It also has Il-76TD troop and cargo carriers and Il-62M airborne command posts, fitted with special communications and designed for the transport of personnel and special air missions. If necessary, the Il-76TDs can be converted from transport into firefighting aircraft by fitting them with two air spray tanks (ВАП-2 VAP-2) which can carry 42 000 litres of water or special liquid.[102] EMERCOM has An-148 jets used for medevac operations and operates Mi-8 and Ka-32 helicopters as well as the largest Mi-26 transport rotorcraft and light Bo-105 and BK-117 rescue helicopters, used for carrying out search and rescue operations under severe conditions.[103]

There is a new EMERCOM centre for unmanned aerial vehicles (UAVs) opened at the Ministry's main office in Khimki near Moscow. Drones will be used in aerial reconnaissance to determine the exact coordinates of emergency zones, affected facilities and forest fires, and for monitoring flood situations, including ice jams, and radioactive or chemical contamination, as well as inspecting oil and power

[99] The MChS's fleet of aircraft was merged under the Federal State-Owned Unitary Aviation Company (FGUAP) of MChS in 2008.
[100] Dobrolyubov (2013) 'Emergency at the Defense Ministry…', pp. 28–32.
[101] *Russian Aviation* (2013) 'The fleet of EMERCOM will be expanded to 200 aircraft by 2020', 8 March, http://www.ruaviation.com/news/2011/10/17/587/ (accessed 2014-03-08).
[102] Ilyushin press release, 'EMERCOM Aviation Day', 12 May 2014, http://www.ilyushin.org/en/press/news/ev3133/?print=y (accessed 2015-05-07).
[103] *Russian Aviation* (2015) 'EMERCOM is going to purchase Agusta Westland helicopters', 18 August.

lines.[104] In the summer of 2010, UAVs were deployed to monitor the fire situation in the Moscow regions.[105]

Every year EMERCOM summarises the status of the protection of population and territories of the Russian Federation from natural and technological emergency situations.[106] Among the main areas of activity in 2014 were the response to floods in the Siberian Federal District, forest fires in the Central, Siberian and Far Eastern Federal Districts, an accident on the Moscow metro, the organisation of provision for Ukrainian refugees and rebuilding the disaster management system in the Crimean Federal District. A 112 single number call system in cases of emergency is in operation. The priority for 2015 was to improve the systems for monitoring and forecasting disaster risks as well as to enhance the level of fire safety and upgrade the crisis management centres by introducing modern communications technologies.[107]

3.3 The National Crisis Management Centre (NCMC)

The National Crisis Management Centre (NCMC) was set up in 2008.[108] It is the centre for command and control of the RSChS (see Figures 1 and 3). The NCMC ensures the emergency work of the RSChS as well as the warning of civilians in emergencies.[109] It is a geographically distributed information management system with peripheral elements that make it possible to manage the forces, means and resources of the integrated state system and civil defence entities during crises and

[104] MChS (2015) 'Russian Emergencies Minister opens unmanned aircraft center in Khimki near Moscow', 27 December.

[105] Topolsky, N. G., Teterin, I. M. and Gavrilov, A. S. (2015) 'Use of Unmanned Aerial Vehicles in the interests of EMERCOM of Russia', Internet magazine, *Technospheric Safety Technologies* [Технологии техносферной безопасности] No. 5, Issue 63, p. 2, http://agps-2006.narod.ru/ttb/2015-5/13-05-15.ttb.pdf; and Russian Government (2010) Resolution 'On approval of the Federal Rules of use of the air space of the Russian Federation', No. 138, 11 March (for unmanned aerial vehicles).

[106] MChS, http://www.mchs.gov.ru (accessed 2015-03-08).

[107] MChS (2015) 'Vladimir Puchkov opens National assembly to summarize performance of Single State Disaster Management System and civil defense measures in 2014 and to set tasks in 2015', 27 January.

[108] MChS, 'National Crisis Management Center', http://www.mchs.ru/eng/powers/?ID=11078&print=Y (accessed 2015-03-08); President of Russia (2008) Decree, 'On the national center for crisis management', No. 1515, 23 October; Government of Russia (2009) Decree No. 43-p, 27 January; and MChS (2009) Order, No. 117, 4 March.

[109] APEC/EPWG (2013) Conference, 'About the results of the work on the creation of centres for crisis management of the Joint Federal Network for Prevention and Elimination of Emergencies (JFNPEE) and objectives for their development', APEC Emergency Preparedness Working Group, 30–31 October, EMERCOM presentation, http://www.apec-epwg.org/public/uploadfile/act/2.NKC_england.pdf.

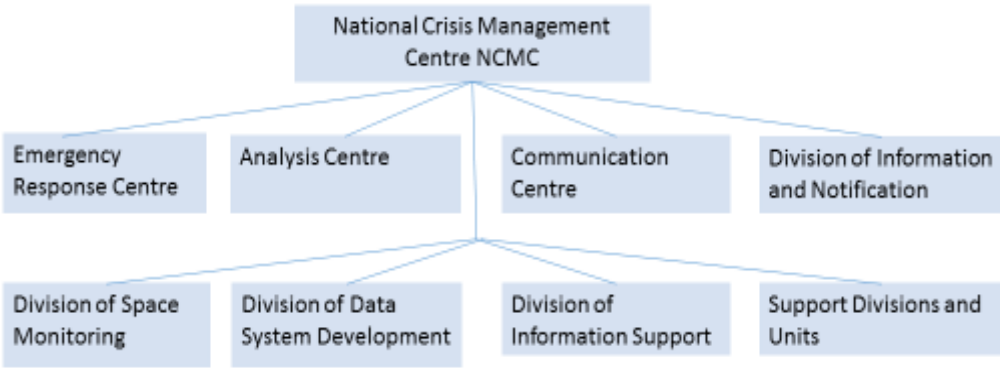
emergencies.[110] The NCMC controls the regional crisis management centres, including divisions in Moscow and Kaliningrad Region. It also exchanges information with counterparts in foreign countries. It has about 1 000 staff.[111] There are 85 main offices in Russia and eight federal district centres. The NCMC headquarters manages parts of the RSChS. One of its main tasks is a rapid and effective response to emergencies using modern technologies.[112]

Examples of organisations that are subordinated to NCMC are:

- the All-Russian Emergency Monitoring and Forecasting Centre (Antistikhiya);
- the Unified Information System on Sea (ESIMO);
- the All-Russian Comprehensive Informing and Warning System (OKSION); and
- the Centre for Situational and Mathematical Modelling of Technological Emergencies and Catastrophes of the All-Russian Scientific-Research Institute for Fire Defence.

[110] Ministry of the Russian Federation for Civil Defense, Emergencies, and Elimination of Consequences of Natural Disasters (2005) Concept for the Creation of the National Crisis Management Center.
[111] Dobrolyubov (2013) 'Emergency at the Defense Ministry'…, pp. 27–31.
[112] MChS, 'National Crisis Management Centre…'.

Figure 3. Organisational structure of the NCMC



Source: Based on information from MChS presentation 2014, http://nidm.gov.in/easindia2014/err/pdf/session/1/6.pdf (accessed 2015-09-12).

There are five levels – federal, federal district, regional, local and facility level – of management in the system, where every level of the system for disaster management has its own coordination unit (see also the organisational structure in Figure 1 and Appendix 2):[113]

- federal level: EMERCOM of Russia, including the National Crisis Management Centre;
- federal district level: EMERCOM's Crisis Management Centres;
- regional level: EMERCOM's regional centres, including the Regional Crisis Management Centres;
- local level: EMERCOM's offices, including Crisis Management Centres, and local administration; and
- on-site level: civil defence/emergency management officers or specially assigned personnel.

Emergency Management Centres are equipped with motor transport, helicopters and aircraft, and signal communication equipment for notification, information gathering, processing and transfer. The structures include emergency rescue teams, equipped for at least three-day off-line workability mode, and are in a state of full readiness. Specially prepared capacity of the Armed Forces, other troops and military formations can be involved for emergency relief if the president so determines. A special information and control system for EMERCOM provides information support for the RSChS in emergencies.

[113] Akimov and Porfiriev (2012) 'The Institutional Framework and Governance …', p. 69.

3.4 The All-Russian Comprehensive Informing and Warning System

The All-Russian comprehensive system for information and warning of the population in crowded places (OKSION) was created 2006 and has been set up.[114] Systems have been installed to inform and warn populations in Moscow, St Petersburg, Rostov-on-Don and Pyatigorsk. There is also a mobile system for warning in operation. The warning system will be installed in subways, at stations, on streets and in supermarkets. Large plasma screens will broadcast the necessary information about emergencies which may occur, and inform people on how to behave and how to render first aid to those injured.[115]

OKSION consists of 33 information centres, including one federal information centre, six federal district centres (St Petersburg, Rostov-on-Don, Yekaterinburg, Krasnoyarsk, Khabarovsk, and Nizhniy Novgorod), 16 regional information centres and seven municipal (city) information centres, plus 84 outdoor notification and warning systems and 450 notification and warning systems in buildings where many people congregate. In May 2011 there were 596 OKSION terminal facilities in 37 data centres. The system is managed by the Federal State Institute All-Russian Information Centre.[116]

3.5 The All-Russian Centre for Monitoring and Forecasting of Natural and Man-caused Emergencies

The Antistikhiya Centre or All-Russian Centre for Monitoring and Forecasting of Natural and Man-caused Emergencies was established in 1999. Its main tasks are monitoring of emergencies and their sources, forecasting of emergencies and their consequences, and establishing a database on emergencies in Russia. In addition, it carries out research and scientific activities, analysis of information on radiation, chemical and biological and social factors as potential sources of emergencies, coordination of activities of regional centres for monitoring the level of contamination of the environment, including in drinking water, and foods and forage material, and evaluates inspections of civil defence in Russia. It further

[114] MChS, 'The purpose and main objectives of creating OKSION'.
[115] MChS, 'National Crisis Management Centre…'; and *Interfax* (2012) 'Proposals being formulated for Russia's national emergency alert system, minister', 12 July.
[116] MChS, State Institution 'Information Center OKSION'.

develops national and international standards in the field of monitoring and forecasting of emergencies as well as conducts exercises and train specialists.[117]

3.6 The Search and Rescue Service

The Search and Rescue Service (SRS) is intended for maintaining preparedness and for operations in emergency situations of natural and technological disasters. The total staff numbered 4 151 in 2013. Among these, 1 821 were certified rescue staff.[118] The rescue centres are subordinated to EMERCOM centres in the federal districts.[119] These are based in the Moscow Region part of EMERCOM, the North-Western Regional Centre in St Petersburg, the Southern Regional Centre in Rostov-on-Don, the Volga Regional Centre in Samara, the Urals Regional Centre in Yekaterinburg, the Siberian Regional Centre in Krasnoyarsk, the Far Eastern Regional Centre in Khabarovsk and Vladivostok. In addition, there are the Tsentrospas Team in Ramenskoye (with a Tuapse Branch) and Gosakvaspas for underwater special-purpose operations with three branches.[120] There are also 350 locally funded emergency and rescue units consisting of 10 500 persons.[121]

In 2011, ten centres were also established for search and rescue along the Northern Sea Route in Murmansk, Arkhangelsk, Naryan-Mar, Vorkuta, Nadym, Tiksi, Pevek, Provideniya and Anadyr.[122] This was done due to the planned increase in the intensity of navigation along the Northern Sea Route.[123]

The Central Air-Mobile Rescue Team, Tsentrospas was established in 1992 and is based near the Ramenskoye airport.[124] Tsentrospas provides day-and-night duty of rescue workers for search and rescue and emergency operations in the event of earthquake, flooding, technological disaster etc. It has transport vehicles and special equipment.[125] Readiness time for departure to the hazardous area is 30 minutes for motor vehicles, one hour for helicopters and three hours for aircraft.

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[117] All-Russian centre of monitoring and forecasting of emergencies of Emergency Control Ministry of Russia (Center Antistikhiya), http://en.mchs.ru/document/224109 (accessed 2013-04-02).

[118] MChS, 'The Search and Rescue Service of the EMERCOM of Russia', http://en.mchs.ru/document/224121 (accessed 2015-03-08).

[119] *Ibid.*

[120] *Ibid*; and Dobrolyubov (2013) 'Emergency at the Defense Ministry..', pp. 27–31.

[121] EMERCOM of Russia 15 Years 1990–2005, MChS, leaflet.

[122] *Barents Observer* (2011) 'Russia to have ten Arctic rescue centres by 2015', 18 November.

[123] Northern Sea Route Information Office (2013) 'Search and Rescue', referring to the materials of the report of FBI 'Gosmorspassluzhba Russia' at the International Conference, The Northern Sea Route: Status, Problems and Prospects, St Petersburg, 11–12 April 2013, ARCLIO Arctic Logistics Information office, http://www.arctic-lio.com/nsr_searchandrescue (2015-05-06).

[124] MChS, 'Tsentrospas – search and rescue team of the Russian Ministry of Emergency Situations', http://en.mchs.ru/Forces_and_Facilities/Centrospas_search_and_rescue_team_of_EME (accessed 2015-05-06).

[125] Tsentropas was established by government order of the Russian Federation issued on 13 March 1992.

The main task is emergency response in the event of natural disasters and technological accidents, and relief work.[126] These teams are equipped with helicopters and cargo aircraft (Mi8 and BO-105 rescue helicopters and the Ilyushin Il-76, Antonov An-72, An-148-100EM and Ka-32A11VS).[127] The overall strength of the airmobile team is around 12 500 personnel. There are rescue centres in the cities of St Petersburg, Pyatigorsk, Nizhny Novgorod and Yekaterinburg.[128]

There are an aerial hospital and two types of medical modules. One module is used for medical evacuation of four victims aboard an Ilyushin Il-76 aircraft and the other for medical evacuation of two victims aboard a Mi-8 helicopter.[129] EMERCOM plans to further develop the airmobile team and create airmobile divisions based on rescue military units and regional and specialised divisions of the federal fire service by 2016.[130] Their task is to respond to major emergency situations and large fires. In the next stage, up to 2017, the airmobile divisions will be built up in each regional centre so that airmobile divisions are created in each rescue military unit.[131] Tsentrospas proved its efficiency in 2014 during the flash flood relief operations in the Siberian Federal District.[132] It has furthermore responded to all major international disasters, including the Asian tsunami in 2004 and the earthquakes in Haiti (2010) and Japan (2011).[133]

Gosakvaspas, the Federal State Institute for Emergency and Rescue Service for Conducting Underwater Special-purpose Operations was established in 2001. Its tasks involve prevention and emergency relief for underwater critical infrastructures in internal waters and in the territorial sea of the Russian Federation, conducting search and rescue operations, evacuations, special-purpose underwater operations when a ship is in distress, or engaging in oil spill response on waterways.[134] The main department is situated in Moscow with the South

[126] MChS, 'Tsentrospas – search and rescue team…'.
[127] Pursiainen, Hedin and Hellenberg (2005) *Civil Protection Systems in the Baltic Sea Region…* , p. 38.
[128] MChS (2015) 'Puchkov, Vladimir: The overall strength of the airmobile team has reached 12.5 thousand people', 2 March.
[129] Yakirevich, I. and Popov, A. (2012) 'Aircraft Medevac by Medical Modules of EMERCOM of Russia', *Journal of Emergency Medicine*, Vol. 43, Issue 5 (November), p. 919.
[130] President of Russia (2013) Decree 'On implementation of plans (programs) for building and developing the Armed Forces of the Russian Federation and other troops, military divisions and bodies for modernization of the defense and industrial complex', May.
[131] MChS (2014) 'Russian Emergencies Ministry sets up airmobile team', 19 February, http://en.mchs.ru/news/item/677803 (accessed 2015-05-06).
[132] MChS (2015) 'Puchkov, Vladimir: The overall strength of the airmobile team has reached 12.5 thousand people', 2 March.
[133] Renz (2007) 'Crisis Response in War and Peace…'.
[134] MChS, Federal State Institute Emergency-and-rescue service for conducting underwater special-purpose operations, http://en.mchs.ru/Forces_and_Facilities/Emergency_and_rescue_service_for_conduct (accessed 2014-04-02).

Centre in the Krasnodar Territory, Gelendzhik, the Northwest branch in the Kaliningrad Region, Baltiysk. and the Northern branch in Arkhangelsk.[135]

EMERCOM's Rescue Military Units (*Spasatelnye voinskie formirovaniia*, SVF) were formed from independent mechanised rescue regiments and brigades of the Civil Defence Troops, which were merged with some other military units. The numerical strength of the SVF, according to a presidential decree in 2011, is 24 450 people, including 7 230 military servicemen and 17 220 civilians. This decree was updated in 2015 and now stipulates that the number of civilians has decreased to 14 668. The tasks of the SVF are to protect the public, territories and property from threats posed by military action or natural and technological disasters. The geographic remit of the service is not limited to Russia.[136] A decree of the president from 2011 stipulates the tasks, performance, organisation of activity, order of recruitment and training of the units (see Appendix 3).[137]

Their rescue military units' role is disaster relief and rescue in areas of disasters and catastrophes. They can also identify and mark areas of radiation and chemical and biological pollution, protect civilians and decontaminate personnel, equipment, buildings and areas. They can evacuate civilians and help survivors, recover damaged objects, restore communications, deliver humanitarian aid, protect important objects, and localise and extinguish forest and peat fires (for further details on their tasks see Appendix 3).[138] There are units to deliver humanitarian aid, fight fires, provide engineering support and carry out search operations with dogs. In wartime they are under control of the Civil Protection System and tasks are assigned by order of the Russian president.[139]

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[135] MChS, 'Emergency-and-rescue service for conducting underwater special-purpose operations', http://en.mchs.ru/Forces_and_Facilities/Emergency_and_rescue_service_for_conduct (accessed 2015-03-15); Government Russia (2001) Order, 'On development of activity on prevention and relief of emergency situations for underwater critical infrastructure', No. 486, 28 June; and MChS (2001) 'On implementation of government order No. 486 of June 28', Order No. 347, 28 June.

[136] MChS (2011) Order, 'On approval of the statutes of the federal state of state-owned institutions (8 rescue centers of regional subordination) governing the management, organisation of activities, funding arrangements, reorganisation and liquidation', No. 604, 17 October.

[137] President of Russia (2011) Decree 'On rescue military units of the Ministry of the Russian Federation for Civil Defence, Emergency Situations and Elimination of Consequences of Natural Disasters', No. 1265, 30 September (with changes introduced up to and including 4 July 2015), http://kremlin.ru/acts/bank/33967/page/1 (accessed 2016-02-2); and President of Russia (2009) Decision 'On the work on the reorganisation of the Civil Defence Forces in the Russian Emergencies Ministry in rescue military units of the Ministry of the Russian Federation for Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters in the amount of 7 230 soldiers', 4 January.

[138] MChS, 'Civil Defence Troops', http://en.mchs.ru/Forces_and_Facilities/Civil_Defence_Troops (accessed 2015-03-15).

[139] MChS, Cooperation in Emergency Management, https://github.com/alx/cablegate/blob/master/origin/Embassy%20Moscow/08MOSCOW78.txt.

In serious emergencies these units can be complemented with the Interior Ministry Internal Troops, and the Federal Security Service units in combined-arms formations.[140] EMERCOM can organise support by special emergency response subunits with the Ministry of Communications, the Ministry of Healthcare and Social Development, the Ministry of Defence, and other Russian ministries and agencies. According to the contingency planning, military units that are located in disaster areas can take an active role in disaster response activities, in close cooperation with EMERCOM units and other responders. Normally, military commanders are members of the disaster coordinating body located in their area.[141]

The rescue military units can also establish whether explosives have been used and the perimeter of zones impacted by explosives. They contain and handle the consequences of terrorist acts in which dangerous chemicals, radioactive substances or biologically active agents are used. They distribute individual protective gear to staff and law enforcement personnel as well as to victims, if necessary. They cooperate with local government agencies and officials specially authorised to deal with combating terrorist acts in order to select sites for decontamination stations for equipment and clothing, sanitary stations and observation posts for handling the consequences of terrorist acts at facilities or industries that use dangerous chemicals, radioactive substances and biologically active agents.[142]

After the reform of the SVF in 2011 the most capable core of the service was subsumed by EMERCOM's federal district rescue centres (including one rescue and training centre) and two central rescue centres – the 179th EMERCOM rescue centre and the 294th centre for extra-high-risk rescue operations – 'Leader'[143] – which are currently manned by 4 460 servicemen, of whom 439 are on duty at any one time.[144]

[140] Vorobyov, I. N. and Kiselev, V. A. (2008) 'Employment of Combined-Arms Formations in the Elimination of Natural and Man-Made Disasters', *Military Thought*, Vol. 17, Issue 2, pp. 41–47.
[141] MSB (2009) *International CEP Handbook 2009*…, pp. 189–193.
[142] Kudrin, A. Yu., Zaporozhets, A. I. and Kachanov, S. A. (2009) 'Organizational Measures and Decision Support Systems for Preventing and Responding to Terrorist Acts at Potentially Hazardous Facilities, on Transportation Systems, and in Locations Where Large Numbers of People Congregate', pp. 46–52, in *Countering Terrorism: Biological Agents, Transportation Networks, and Energy Systems. Summary of a U.S.-Russian Workshop*, Glenn E. Schweitzer, Rapporteur, Committee on Counterterrorism Challenges for Russia and the United States; Office for Central Europe and Eurasia; National Academy of Sciences; in cooperation with the Russian Academy of Sciences.
[143] *Ibid*.
[144] Dobrolyubov (2013) 'Emergency at the Defense Ministry…', pp. 28–32; President of Russia (2009) 'On the Russian Ministry of Emergency Situations organized work on the reorganisation of civil defense forces into the rescue military formations of the Russian MChS', 4 January; Federal law (2010) 'On Amendments to Certain Legislative Acts of the Russian Federation', No. 223-FZ, 27 July; President of Russia (2011) Decree 'On the rescue military formations of the Russian Ministry for Civil Defense, Emergencies and Elimination of Consequences of Natural Disasters',

The rescue military units are manned with military personnel who serve under contract through the military registration and enlistment offices.[145] Changes have been proposed to facilitate enlistment also of non-military personnel for EMERCOM by amending the federal law 'On Military Duty and Service to improve the military organisation of Russia'.[146]

The 'Leader', 294th Centre for Conducting High Risk Rescue Operations was established in 1994. Its purpose is to conduct rescue and emergency operations of exceptional complexity as well as to evacuate victims from abroad and to provide for their security.[147] The Leader Centre takes its orders directly from EMERCOM and is based in Zhukovskiy, just outside Moscow. It specialises in dangerous and high-risk operations, such as mine clearing or guarding sensitive cargoes in transit. It also ensures the protection of humanitarian transports in areas of emergency situations and takes care of detecting and disposing of unexploded ordnance.[148]

The 179th Rescue Operation Centre is considered to be the most capable military formation specialising in disaster relief. It is based in Noginsk, near Moscow. Its personnel and equipment are used for delivering supplies and provisions to disaster-stricken areas by road or by air. The supplies are provided from stockpiles maintained by the Reserves Committee.[149]

It conducts salvage, rescue and other emergency operations in Russia or abroad. It is also engaged in emergency medical service during emergencies. It disposes of aerial bombs or mines in cities and population centres, and carries out firefighting and radiological, chemical and biological reconnaissance in emergency areas. It also delivers food, water, articles of prime necessity and other items of material support to the emergency victims, and evacuates people, as well as items of material and cultural value, from emergency areas. If need be it can decontaminate personnel, equipment and facilities, as well as buildings.[150]

No. 1265, 30 September; Russian Government Resolution (2011), 'On amendments to some acts of the Government of the Russian Federation on the organization of the rescue of military units of the Russian Ministry for Civil Defense, Emergencies and Elimination of Consequences of Natural Disasters', No. 1113, 23 December; and MChS (2011) 'On measures to implement the WORD MISSING of the President of Russia Decree 30 September No. 1265', No. 704, 28 November.

[145] At present the number of military servicemen in MChS rescue military units is determined by an order of the Russian president.

[146] MChS (2015) 'Russian Emergencies Ministry to pick contract soldiers for military service in rescue military units', 3 March.

[147] MChS, 'Leader, the 294th Centre for conducting of extra-risk rescue operations of EMERCOM', http://en.mchs.ru/Forces_and_Facilities/Center_Leader (accessed 2015-03-15).

[148] *Ibid.*

[149] Dobrolyubov (2013) 'Emergency at the Defense Ministry…', pp. 27–31.

[150] The 179th Rescue Operation Centre was established on 13 January 1998 by an order of EMERCOM issued on 22 December 1997. It was formed on the basis of two teams (the 8th independent automotive brigade and the 233rd search-and-rescue brigade),

Paramilitary mine rescue units are located geographically in 31 subjects of the Russian Federation and structurally composed of 18 paramilitary rescue units, which together include 49 paramilitary rescue squads and 17 paramilitary rescue items, and 318 rescue departments, equipped with special tools, machinery, equipment and materials.[151]

3.7 The State Fire Service

The tasks of the State Fire Service (SFS) are to develop and take measures to avoid fires and improve the efficiency of protecting populated areas and enterprises. It carries out disaster relief and rescue operations as well as training for rescue teams. The numerical strength of the service is 220 000 people. The fire protection system in Russia consists of the SFS,[152] municipal firefighting systems, departmental firefighting systems, and private and voluntary firefighting teams (for the organisation see Appendix 2). The SFS includes both federal fire control and that of the subjects of the Russian Federation. SFS units respond to about 2 million calls every year. The SFS also includes the State Fire Safety Inspection, which monitors and enforces compliance with regulations in this area.[153] EMERCOM has in recent years provided assistance in fighting forest fires in Greece, Israel, Spain and Serbia.[154]

In conclusion, Russia has a search and rescue service that is well equipped and can manage many types of crises including those that are connected with high risks. The search and rescue service is of international standard. The fire service is also large and fairly well equipped, but it is a serious challenge to have sufficient equipment and staff in place to respond all over Russia's vast territory.

http://en.mchs.ru/Forces_and_Facilities/179th_Rescue_Operation_Center_of_EMERCOM (accessed 2015-03-15).

[151] MChS, Paramilitary mine rescue units (VGSCH), http://www.mchs.gov.ru/dop/sily/VGSCH.

[152] President of Russia (2001) Decision 'On improvement of public administration in the field of fire safety', No. 1309, 9 November.

[153] Dobrolyubov (2013) 'Emergency at the Defense Ministry…', pp. 27–31; and MChS, 'Fire Control in Russia', http://en.mchs.ru/Forces_and_Facilities/Fire_Control_in_Russia (accessed 2014-04-02).

[154] Dobrolyubov (2013) 'Emergency at the Defense Ministry…', pp. 27–31.

4 International cooperation

The EMERCOM Agency for Support and Coordination of Russian Participation in International Humanitarian Operations is a federal state establishment.[155] It is part of the Russian National Corps of Emergency Humanitarian Response.[156] Furthermore, it is responsible for support and coordination of international operations with Russian and foreign partners within the framework of the United Nations (UN) and other international organisations.[157] This chapter looks closer into how EMERCOM's international cooperation has developed through formal frameworks but also how EMERCOM operated in practice in eastern Ukraine from 2014.

The agency's tasks are:

- elimination of the consequences of natural disasters both in Russia and abroad;
- rendering of international humanitarian assistance to the affected population; and
- humanitarian demining.

Another task is the training of national and international officials, alongside exchanges of experience and know-how in the area of civil defence, disaster prevention and risk management as well as participating in international exercises.[158]

EMERCOM's units have contributed to international crisis response and humanitarian operations as the ability of the regular Armed Forces of the MoD to carry out such tasks is limited.[159] The Armed Forces' peacekeeping operations have been much criticised in the West. Their limited capabilities in the sphere of humanitarian operations became evident during the operations in the Chechen

[155] EMERCOM Agency, Federal State Establishment Agency for Support and Coordination of Russian Participation in International Humanitarian Operations.

[156] An intra-ministerial task force responsible for coordination between various departments, agencies and search-and-rescue centres of the ministry, to ensure fast-track decision making as far as emergency relief and humanitarian response operations are concerned, headed by the director of the Department of International Cooperation of the Ministry.

[157] Russian Permanent Mission to the European Union, 'Russian Federation civil protection', http://www.russianmission.eu/en/civil-protection (accessed 2014-11-17).

[158] EMERCOM, 'Russian Federation, International Civil Defence Index', http://www.icdo.org/Directory%20ORIGINAL/Directory-english/Russia.maj.2006.ang.pdf (2013-03-08).

[159] Stepanova, Ekaterina (2005) 'The use of Russia's security structures in the post-conflict environment', in Schnabel, A. and Erhart, G. (eds.) *Security Sector Reform and Post-Conflict Peace-building*, Tokyo and New York, United Nations University Press, p. 142.

Republic from 1994 to 1996.[160] Meanwhile, EMERCOM units are well organised and a fairly effective federal force for humanitarian operations and peace-keeping.[161] EMERCOM's units have operated in zones of armed conflicts both within Russia and abroad in, for example, South and North Ossetia, Abkhazia, Georgia, Transnistria, the former Yugoslavia, Tajikistan, Chechnya, Afghanistan, and recently in eastern Ukraine and on Crimea.[162]

4.1 The framework for international cooperation

EMERCOM's activities abroad are formalised in around 40 intergovernmental agreements as well as in 15 international statutes, which detail its partnerships with a range of international organisations, including the EU, the UN Office for the Coordination of Humanitarian Affairs (UN OCHA), the World Food Programme, the World Health Organization (WHO), the International Civil Defence Organization (ICDO), the UN International Strategy for Disaster Risk Reduction (UNISDR[163]), the North Atlantic Treaty Organization (NATO), the Commonwealth of Independent States (CIS) and the Organization of the Black Sea Economic Cooperation (BSEC). There is an Inter-Agency Commission for the implementation of the UNISDR in Russia and a National Platform within the framework of the Hyogo Framework for Action.[164] Russia has been a member of the International Organization of Rescuers for more than 20 years.[165]

The European Union

EMERCOM is also a partner of the EU structures working in the field of civil protection, and emergencies prevention and response, as well as providing humanitarian assistance.[166] There is an agreement between EMERCOM and the European Commission on cooperation, mutual assistance and aviation support in response to emergencies.[167] For the cooperation in civil protection activities there

[160] Renz (2007) 'Crisis Response in War and Peace...', pp. 148–152.
[161] MChS, 'Civil Defence Troops'…
[162] MChS, http://en.mchs.ru/Forces_and_Facilities/Civil_Defence_Troops (2013-04-01).
[163] UNISDR (2014) 'Russian Federation', United Nations Office for Disaster Risk Reduction, http://www.unisdr.org/partners/countries/rus (accessed 2015-02-25).
[164] EMERCOM (2015) 'Russian Emergencies Ministry and International Civil Defense Organization agree on wider cooperation', 16 February, http://en.mchs.ru/news/item/3397605/ (accessed 2015-02-25); and Prevention Web, Russian Federation National Platform, 'Hyogo Framework', http://www.preventionweb.net/english/hyogo/national/list/v.php?id=142 (accessed 2014-10-09).
[165] EMERCOM, http://en.mchs.ru/articles/interviews/item/388216/ (accessed 2015-03-15).
[166] Russian Permanent Mission to the European Union, 'Russian Federation civil protection' … .
[167] European Commission, http://ec.europa.eu/echo/files/about/Russia-AdmArr_EN.pdf (accessed 2015-04-10).

is a Russia-EU Basic Agreement.[168] EMERCOM can offer equipment that is not readily available elsewhere, such as its B200 amphibious aircraft and the new K226 helicopters suitable for deployment in northern climates.[169] Experts meet annually for information exchange, for instance between the Russian NCMC and the EU Emergency Response Coordination Centre.[170]

Since 2006, EMERCOM staff have regularly been invited to attend EU civil protection courses and exercises as participants or as observers. Upon requests from governments of EU member states or from the EU Emergency Response Coordination Centre, various EMERCOM personnel and means can be involved to support the EU Civil Protection Mechanism in preventing and handling natural and technological disasters. During large-scale forest fires in Southern Europe in the summer of 2007, EMERCOM supported the EU efforts. In 2010, the EU supported Russia in fighting forest fires.[171] EMERCOM has cooperation with states that have a strong civil defence tradition, such as Switzerland and Austria.[172] EMERCOM minister Vladimir Puchkov has called on his counterparts from the EU to set up a global emergency response system based on Russian experience in line with a proposal from 2011 by then President Dmitry Medvedev.[173]

In 2011, Russia developed and discussed with the European Commission a plan of action in order to develop an effective and efficient multilateral international emergency management mechanism designed for international response to high-profile catastrophes and crises.[174] The implementation of this was hoped to open the way to a Global Emergency Management System. According to Russia there is a need for international emergency rapid-response forces and emergency response modules to be ready to deploy quickly upon a request by a government. This kind of rapid-response force for emergencies has also been discussed but not agreed upon in the EU.

[168] European Commission (2013) 'Administrative Arrangement between EMERCOM and the European Commission Directorate-General for Humanitarian Aid and Civil Protection (DG ECHO) on practical cooperation in the field of civil protection', 22 March.
[169] Renz (2007) 'Crisis Response in War and Peace...', pp. 148–152.
[170] Russian Permanent Mission to the European Union, 'Russian Federation civil protection' … .
[171] *Ibid*.
[172] Renz (2007) 'Crisis Response in War and Peace...', pp. 148–152.
[173] *The Voice of Russi*a (2014) 'Russia calls on EU counterparts to set up global anti-disaster network', 8 July; and *RIA Novosti* (2011) 'Russian President Dmitry Medvedev on Thursday called for international legislation to prevent and reduce the impact of disasters', 14 April.
[174] Russian Federation (2011) 'Statement made at the Global Platform for Disaster Risk Reduction', official statement made by Mr Yuri Brazhnikov, director of the International Cooperation Department and head of the Russian National Emergency Response Corps, Ministry of the Russian Federation for Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM), at the third session of the Global Platform for Disaster Risk Reduction, May 2011; and *RIA Novosti* (2011) 'Russia: Medvedev urges global system to fight disasters', 14 April.

A Humanitarian Centre in Serbia is seen, from a Russian point of view, as a first practical step towards implementing a European Disaster Management Centre concept, in case of large-scale disasters and crises. Russia proposed the draft concept to the EU for consideration in 2003–2004.[175]

The Barents Council

EMERCOM also participated before the Ukraine crises in international exercises on preparedness and response within the framework of the Barents Sea cooperation. This was in accordance with an agreement between Russia, Finland, Norway and Sweden in December 2008. There is also a Memorandum between the Russian Federation and Sweden in the field of emergency prevention, preparedness and response.[176]

The United States

In 1996, the US and Russia signed a Memorandum of Understanding, creating the Joint US-Russia Cooperation Committee on Emergency Situations. In 2009 the US-Russia Bilateral Presidential Commission Working Group on Emergency Situations was set up, including cooperation with the US Federal Emergency Management Agency (FEMA). EMERCOM and FEMA agreed in 2013 to collaborate in joint rescue operations during major disasters. EMERCOM provided humanitarian aid to New Orleans when it was devastated by hurricane Katrina.[177] Since the conflict in Ukraine erupted the cooperation between US and Russia is no longer active.

NATO

EMERCOM's integration with NATO's Civil Emergency Planning has earlier run smoothly and been focused on emergency preparedness, civil-military cooperation and disaster management within the framework of the Partnership for Peace programme.[178] In 2013 Russia and NATO had reached a series of agreements on collaboration in handling disasters.[179] One agreement was to share experience in the use of drones for early warning about disasters and dealing with their aftermath. Under the terms of other deals, EMERCOM's NCMC would exchange information on specific emergencies with NATO's Euro-Atlantic Disaster

[175] Russian Federation (2011) 'Statement made at the Global Platform for Disaster Risk Reduction'….
[176] Sweden, 'Disaster management structure', http://ec.europa.eu/echo/files/civil_protection/vademecum/se/2-se-1.html (accessed 2015-03-15).
[177] Brezhneva, Anna and Ukhova, Daria (2013) 'Russia as a Humanitarian Aid Donor', OXFAM Discussion Paper, 15 July; and *Sputnik* (2015) 'Russian Aid to Katrina-Hit New Orleans Paved Way for EMERCOM-FEMA Cooperation', 29 August.
[178] NATO (2006) 'NATO's Role in Civil Emergency Planning', September, http://www.shape.nato.int/docu/cep/cep-e.pdf (accessed 2014-10-12).
[179] *Investigative Headlines News* (2013) 'How the Gov is Going to Handle Mass Casualties during a Disaster', 3 July.

Response Coordination Centre. Russian and NATO rescue services could hold joint exercises to train for collaboration in large-scale disasters.[180] However, since the deterioration in relations after the war in Ukraine, cooperation with NATO has been close to non-existent.

The United Nations

Cooperation with the UN High Commissioner for Refugees (UNHCR) began in 1993 during the crisis in the former Yugoslavia between 1993 and 1996 and again from 1999 to 2000.[181] EMERCOM has also contributed extensively to humanitarian operations, airlifting aid to many crisis regions, including Lebanon, Armenia, Sudan, Kenya, Tajikistan, Kyrgyzstan, Afghanistan, the Central African Republic, Mali, Mozambique and other countries.[182] In 2015, humanitarian aid was delivered to Syria and eastern Ukraine.[183]

Bilateral relations

EMERCOM has bilateral agreements with a number of states and has taken part in operations connected with earthquakes in Georgia, Iran, Colombia and Turkey, as well as evacuating Russian citizens from Yemen.[184] Russia and India have expanded cooperation in the fight against catastrophes and a joint committee on cooperation in warning and handling emergency situations has been established.[185] EMERCOM has furthermore carried out demining in several areas including Serbia, Lebanon, Sri Lanka and Nicaragua.[186]

According to the state-controlled news outlet Sputnik, Russia has provided humanitarian aid in about 140 countries. In 2014, humanitarian and technical aid was according to Russian media reports provided to 25 countries, including Iraq, Yemen, eastern Ukraine and Syria. The Ministry conducted some 37 international humanitarian response operations in 2014.[187] Russia has gradually increased its activity in the area of international humanitarian assistance, although overall its contributions remain comparatively small.

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[180] *Interfax* (2013) 'Russia and NATO have reached a series of agreements on collaboration in handling disasters', Interfax, 31 May.
[181] Brezhneva and Ukhova (2013) 'Russia as a Humanitarian Aid Donor…'
[182] Adel, Abusara and Marko Savković (2009) 'Emergency Centre for Emergency Situations', *Western Balkans Observer*, No. 15 (October-December), pp. 74–78; and NATO (2006) 'NATO's Role in Civil Emergency Planning', September 2006, http://www.shape.nato.int/docu/cep/cep-e.pdf (accessed 2015-03-20).
[183] Brezhneva and Ukhova (2013) 'Russia as a Humanitarian Aid Donor…'.
[184] *Ibid.*
[185] *Interfax* (2013) 'Russia and India will expand cooperation in the fight against catastrophes and a joint committee on cooperation in warning and handling emergency situations has been established', 11 April; and *Interfax* (2013) 'Russia & CIS Military Newswire', 4 November.
[186] EMERCOM of Russia 15 Years 1990–2005, EMERCOM, leaflet.
[187] *Sputnik* (2015) 'Russia delivers humanitarian aid to 140 countries', 18 August.

Travel restrictions

In 2015 travel restrictions were imposed on all EMERCOM employees and for some employees of the MVD and law enforcement agencies like the Federal Drug Control Service and the Federal Migration Service. Others listed are people with access to state secrets, such as certain employees of the Foreign Ministry. According to estimates, they number around 250 000 people. The reasons given are to prevent leaks and to prevent the possibility of being arrested by US law enforcement agencies. The MVD has prepared a blacklist of 150 countries its employees no longer can visit. This includes all EU member states and nations around the world that have an extradition agreement with the US.[188]

4.2 Humanitarian aid to the conflict area in eastern Ukraine

In August 2014, in connection with the military conflict, Ukraine's president, Petro Poroshenko, called for international aid for the Donbas population, with the participation of the EU, the US and other partners. This could also include Russia provided that it observed the international regulations and operated exclusively under the aegis of the International Committee of the Red Cross. Ukraine's position was supported among others by the UK, Germany and the US, which stated that Russia's potential actions under the pretext of humanitarian aid, without Kiev's agreement, were unacceptable. As a response to the common position of the West, Moscow accused Kiev of not complying with the Minsk armistice, according to which Ukraine was compelled to offer humanitarian corridors (for relief) and thus took the matter into its own hands.[189] Russia announced that it would enter Ukraine with its humanitarian convoy even without Ukraine's permission.

The first Russian EMERCOM 'humanitarian convoy' reached Donbas on 22 August 2014, violating the international rules as the contents had not been confirmed by independent observers. Ukraine called this action a 'direct invasion', but promised it would not respond to this provocation. As a response, Russia's representative to the UN, Vitaly Churkin, organised a briefing in New York to try

[188] *Barents Observer* (2014) 'Russia bans police, emergency and military employees from traveling abroad', 13 May.

[189] Scrinic, Andrei (2014) 'Humanitarian aid and political aims in Eastern Ukraine: Russian involvement and European response', *Eastern Journal of European Studies*, Vol. 5, No. 2 (December), pp. 77–88, http://ejes.uaic.ro/articles/EJES2014_0502_SCR.pdf.

to explain why Moscow had decided to send the 'humanitarian convoy'. Following this an emergency session of the UN Security Council was also held.[190]

Figure 4. White trucks rolls into Ukraine from Russia, 2014

Source: Humanitarian aid from Russia, http://project-nasledie.info/wiki/index.php?title=Photo_gallery_of_the_Ukrainian_political_crisis._July_2014_-_November_2014 (accessed 2015-11-09).

Ukraine suspected that the convoys were being used by Russia for other purposes than those purported. According to Ukraine, Putin had previously made it clear that Russia was interested in Ukraine's defence industry and invited skilled workers to immigrate to Russia. According to the Ukrainian National Security and Defence Council, trucks that came into Ukraine for the humanitarian convoy were used to load the Topaz production unit for the Kolchuga radar, and equipment from a factory in Luhansk which makes specialised ammunition magazines.[191] These claims have not been independently confirmed.

From August 2014 to the end of October 2015 Russia had sent 48 'humanitarian convoys' (with around 100 trucks each time) from EMERCOM to the region. These convoys have, according to Russian media, transported food, seeds for the spring sowing campaign, textbooks, clothing, sleeping bags, medicine, medical supplies, construction materials, fuel, lubricants, electrical equipment, diesel

[190] Scrinic (2014) 'Humanitarian aid and political aims in Eastern Ukraine…', pp. 77–88.
[191] *Euronews* (2014) 'Ukraine accuses Russian aid convoy of stealing factory equipment', 23 August.

generators, water treatment equipment, window glass and trailer kitchens. Again according to Russian media, Russia delivered over 58 000 metric tonnes of humanitarian cargo to the Donbas between August 2014 and December 2015.[192] As late as in October 2015 the US called for an end to the uninspected Russian convoys.[193]

The Russian convoys that reached the Donbas region have repeatedly breached international rules in the humanitarian field, as documented by both Ukrainian authorities and international missions in the disputed regions. The information provided by Russian officials on the contents of the material transported has not been verified because neither the Ukrainian authorities nor international organisations such as the Organization for Security and Co-operation in Europe (OSCE) or the UN had access to their content.[194]

Russia hopes to improve and develop its international relationships and cooperation and in doing so hopes it will improve its international image and standing. The focus has so far been on areas with conflicts where Russia's interests, in its view, are threatened. The way in which the 'humanitarian' convoys have been handled during the Ukraine crisis has counteracted this aim. On the global level Russia is still a small player in humanitarian aid and support.

[192] MChS (2015) 'Russian Emergencies Ministry 47th convoy delivers relief goods to people in Donetsk and Luhansk regions', 24 December; MChS (2015) 'Russian Emergencies Ministry starts delivery of 45th cargo of humanitarian aid to Donbass', 19 November; EMERCOM (2015) 'Noginsk Rescue Center drivers returned to permanent deployment base after delivering humanitarian aid to Luhansk and Donetsk Regions', 7 March; *KyivPost* (2015) 'Ukrainian Border Guards says Ukraine could only visually observe Russian humanitarian convoy', 23 April; and *PressTV* (2015) 'Russia sends humanitarian convoy to Ukraine's Donbass', 23 April.

[193] United States Mission to the OSCE (2015) 'Ongoing Violations of International Law and Defiance of OSCE Principles and Commitments by the Russian Federation in Ukraine', Ambassador Daniel B. Baer to the Permanent Council, PC.DEL/1449/15, Vienna, 29 October.

[194] OSCE (2014) 'Weekly update from the OSCE Observer Mission at Russian Checkpoints Gukovo and Donetsk based information', 12 November, http://www.osce.org/om/126629 (accessed 2014-11-30); and Scrinic (2014) 'Humanitarian aid and political aims in Eastern Ukraine…', pp. 77–89.

5 Background on Russian natural and human-induced disasters

Extreme weather events can lead to disasters that may overwhelm a country's emergency management capability and also result in significant economic losses and casualties.[195] It is estimated that around 350–400 natural disasters occur in Russia each year.[196] There is an Atlas of natural and technological disasters and risks in the Russian Federation.[197] The most common causes of natural emergencies in Russia are floods (which account for 35 per cent of emergencies); hurricanes, tornadoes and storms (19 per cent); heavy rain (14 per cent); earthquakes (8 per cent); heavy snowfall and blizzards (7.5 per cent); and landslides and mudflows (5 per cent). In other words, emergencies of hydro-meteorological origin dominate as they make up more than 82 per cent of the total.[198] Data on hazards are collected in a national database of environmental data at the Research Institute of Hydro-meteorological Information, World Data Centre. In 2012, there was a record number of extreme weather events.[199]

The total number of hazardous weather events in Russia is increasing according to Roshydromet.[200] The annual number of such events more than doubled between 1991 and 2008.[201] Ongoing climatic changes make Russian cities more vulnerable to flood, surface water, sea-level rise, extreme temperatures and landslides than before. Climate change will negatively affect the frequency of natural and

[195] Prevention Web (2012) 'Caucasus region facing climate change problems', *Financial, Business News & Multimedia*, 24 April 2012, Prevention Web, http://www.preventionweb.net/english/professional/news/v.php?id=26418 (2013-03-09).

[196] Vorobyov (2008) 'Employment of Combined-Arms Formations…', pp. 41–47.

[197] Rasumov, V. et al. (2010) 'The Atlas of hazards and emergency situations in the Russian Federation'.

[198] Slipenchuk, Mikhail and Kirillov, Sergey (2013) 'Experience of Creating an Atlas of Hazards and Emergencies in the Russian Federation', Invited Lecture, 1 October 2013, UDC: 912:502.58(47), DOI:10.2298/IJGI1303065S.

[199] Roshydromet (2013) *Report on the Specifics of Climate on the Territory of the Russia Federation in 2012*, Federal Service for Hydrometeorology and Environmental Monitoring of the Russian Federation, Moscow, p. 64, Figure 8.1; and OXFAM (2013) 'After the drought, the 2012 drought, Russian farmers, and the challenges of adapting to extreme weather events', *OXFAM Case Study*, September.

[200] Roshydromet (2013) *Report on the Specifics of Climate*…; and Russian Federation (2010) *Fifth national communication 2010 by the Russian Federation to the UNFCCC*, Submission date: 12 February 2010. Revised version: 16 March 2010, RUS/COM/5 E, Interagency Commission of the Russian Federation on Climate Change Problems.

[201] UNDP (2009) *Integrated Climate Change Strategies for Sustainable Development of Russia's Arctic Regions (Case Study for Murmansk oblast)* Summary, Moscow, UN Development Programme in Russia, Russian Regional Environmental Centre, p. 9.

technological disasters.[202] For further details on some examples of disasters, see Appendix 5.

Russia forecasts that the number of natural disasters could double in the next decade and it keeps increasing by 6–7 per cent each year. It is estimated that the annual cost of the damage caused by natural disasters is 30–60 billion roubles, or 0.07–0.15 per cent of Russia's gross domestic product (GDP).[203] As regards critical infrastructure objects, many of them are beyond their service life and need reconstruction.[204]

The frequency and scale of natural disasters and industrial accidents have thus increased in recent years.[205] Almost every natural disaster is accompanied by some sort of technological one.[206] It has been assessed that 96 per cent of dangerous Russian enterprises do not meet international standards for industrial safety. The frequency of industrial accidents in Russia is higher than in more advanced industrial states.[207]

In the following two examples of severe natural disasters, flooding and wildfires will be discussed more in detail, as will the way in which the authorities, especially EMERCOM, have handled these situations. These examples have been chosen as they represent a severe challenge for EMERCOM and other authorities responsible for the system for disaster management.

5.1 The forest fires in 2010

It is worth noting that forest fires occur every summer in Russia, but usually not on the scale of those in 2010. In 2015, for example, there was extremely dry weather, high air temperatures and heavy winds in southern Siberia that resulted in massive forest fires that also covered large areas.[208] The number of wildfires

[202] Roffey, Roger (2014) *Climate Change and Natural Disasters…*.
[203] *Moscow Times* (2015) 'Russia Expects Doubling of Natural Disasters', 8 February, http://www.themoscowtimes.com/news/article/russia-expects-doubling-of-natural-disasters/515581.html.
[204] Petrova, Elena (2011) 'Critical infrastructure in Russia: geographical analysis of accidents triggered by natural hazards', *Environmental Engineering and Management Journal*, Vol. 10, No. 1, pp. 53–58; and Peterson, D. J. and Bielke, Eric K. (2002) 'Russia's Industrial Infrastructure: A Risk Assessment', *Post-Soviet Geography and Economics*, Vol. 43, No. 1, pp. 13–25.
[205] Prevention Web, 'Russian Federation National Platform, Hyogo Framework', http://www.preventionweb.net/english/hyogo/national/list/v.php?id=142 (accessed 2014-03-09).
[206] Petrova, E. (2008) 'Natural hazards as pre-conditions of technological disasters in Russia', *Georisk: Assessment & Management of Risk for Engineered Systems & Geohazards*, Vol. 2, Issue 4 (December), pp. 248–256.
[207] Yelokhin, A. N., Sizov, Yu. I. and Tshovrebov, Yu. V. (2004) 'The criteria of acceptable risk in Russia', *Journal of Risk Research*, Vol. 7, Issue 6 (September), pp. 609–612.
[208] Relief Web (2015) 'Russia: Massive forest fire Emergency Plan of Action (EPoA) Operation', No. MDRRU019, 24 April.

and the area of land burned by the fires have been increasing constantly the last decades. From 1995 to 2010, the amount of forest area burned by wildfires doubled.[209]

However, in 2010 from early July through to the first half of August western Russia experienced what has been referred to as 'the Great Russian heatwave of 2010', resulting in extensive forest fires. There was a 50-day period in central Russia that was the hottest since at least 1891, when records were first kept. In some places average temperatures were more than 5°C higher than normal.[210] The four most severely affected areas were Nizhny Novgorod, Ryazan, Lipetsk and Voronezh region.[211] According to data from the Global Fire Monitoring Centre, the area ravaged by forest fires in Russia between January and August 2010 was more than 15 million hectares. However, according to data issued by the Federal Forest Agency and EMERCOM, the area was estimated at only 1.5 million hectares.[212] In 2010 about 160 000 fires were registered within Russia.[213]

Forest fires threatened nuclear facilities and areas where the ground had been contaminated by radioactive fallout from Chernobyl. According to data from the Russian Centre for Forest Protection, from mid-June to the beginning of August forest fires occurred on 39 square km of land polluted by radioactive fallout.[214] Russia has around 90 square km contaminated by radioactivity.[215]

Official and unofficial statistics on the impact of the 2010 fires differ strongly. According to official statistics only 65 people died, 1 068 suffered injuries and 3 500 lost their homes due to the effects of the fires. The unofficial numbers are much higher. In July 2010 Moscow recorded a total of over 14 000 deaths. This

[209] Yanitsky, O. N. (2012) 'The 2010 Wildfires in Russia: An Eco-sociological Analysis', Sociological Research, Vol. 51, No. 2 (March–April), p. 60.
[210] *RT* (2011) 'Hottest-ever Russian summer resulted in worst natural disaster', 14 January; and *BBC News* (2010) 'Death rate doubles in Moscow as heatwave continues', 9 August.
[211] Lazarev, Yegor, Sobolev, Anton, Soboleva, Irina and Sokolov, Boris (2012) *Trial by Fire: A natural disaster's impact on support for the authorities in rural Russia*, Basic Research Program, Working Papers, Series Political Science, WP BRP 04/P5/2012, p. 15, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2011975 (accessed 2015-01-20).
[212] Pynnöniemi and Busygina (2013) 'Critical infrastructure protection and Russia's hybrid regime ...', p. 569; Yanitsky (2012) 'The 2010 Wildfires in Russia…', p. 60; and MChS, website, http://www.mchs.gov.ru/stats/detail.php?ID=213801 (accessed 2013-12-15).
[213] MChS, Press release, http://www.mchs.gov.ru/stats/detail.php?ID=197891 (accessed December 2011).
[214] Yanitsky (2012) 'The 2010 Wildfires in Russia…', p. 68; and *Reuters* (2010) 'Russia's Medvedev cancels fire emergency in 3 regions', 12 August.
[215] Goldammer, Johann G. (2010) *Preliminary Assessment of the Fire Situation in Western Russia*, The Global Fire Monitoring Center (GFMC), UN-ISDR Global Wildland Fire Network, 15 August, p. 15, http://www.fire.uni-freiburg.de/intro/about4_2010-Dateien/GFMC-RUS-State-DUMA-18-September-2010-Fire-Report.pdf (accessed 2015-01-12); and European Commission (2015) Europe in a changing climate, Centre for Climate Adaptation, http://www.climateadaptation.eu/russia/forest-fires/ (accessed 2015-10-15).

figure was nearly 5 000 higher than in July 2009. Pollution levels in July 2010 were five times higher than normal.[216] In all of Russia mortality rates increased by 18 per cent and in August 41 300 more people died than in August 2009.[217] With temperatures so high people became desperate to cool off. Between 1 June and 15 July it is estimated that around 2 000 Russians had drowned whilst swimming and 95 per cent of those drowning had consumed alcohol.[218] More than 60 000 flights were cancelled or delayed during the period of forest fires.[219] The heatwave caused widespread drought, ruined crops and was blamed for nearly 800 wildfires that blanketed Moscow in smog.[220] President Dmitry Medvedev declared a state of emergency in seven regions and Prime Minister Vladimir Putin personally oversaw the firefighting operations.[221]

Drought, high temperatures and fires destroyed one-third of Russia's 2010 grain crop and affected over 13.3 million hectares of cropland.[222] Because of the grain losses the government imposed a ban on the export of wheat.[223] Total damage and losses amounted to approximately 1.4 per cent of GDP.[224]

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[216] Maier, F., Obregón, A., Bissoll, P., Achberger, C., Kennedy, J. J., Parker, D. E., Bulygina, O. and Korshunova, N. (2011) 'Summer heat waves in Eastern Europe and western Russia in State of the Climate in 2010', *Bulletin of the American Meteorological Society*, Vol. 92, S210; *Christian Science Monitor* (2010) 'Russia Wildfires: Thick, Toxic Smog Chokes Moscow Residents', 8 August; and Met Office (2015) 'The Russian heatwave of summer 2010', http://www.metoffice.gov.uk/learning/learn-about-the-weather/weather-phenomena/case-studies/russianheatwave (accessed 2015-01-12).

[217] Goldammer (2010) *The Western Russian Wildfires of 2010*, Global Assessment Report on Disaster Risk Reduction, http://www.preventionweb.net/english/hyogo/gar/2011/en/bgdocs/GFMC_2010.pdf (accessed 2015-02-17). [this is the first mention of this work]

[218] Met Office (2015) 'The Russian heatwave of summer 2010', http://www.metoffice.gov.uk/learning/learn-about-the-weather/weather-phenomena/case-studies/russianheatwave.

[219] Goldammer (2010) *The Western Russian Wildfires of 2010...* .

[220] Marshall, Michael and Hamzelou, Jessica (2010) 'Is climate change burning Russia?', *New Scientist*, 12 August; and Relief Web (2010) 'Russia's Medvedev cancels fire emergency in 3 regions', Relief Web, 12 August, http://reliefweb.int/report/russian-federation/russias-medvedev-cancels-fire-emergency-3-regions (accessed 2014-03-13).

[221] Lazarev, Sobolev, Soboleva and Sokolov (2012) *Trial by Fire…* , p. 12.

[222] Maier et al. (2011) 'Summer heat waves in Eastern Europe and western Russia…'.

[223] Ferris, Elizabeth, Petz, Daniel and Stark, Chareen (2013) *The Year of Recurring Disasters: A Review of Natural Disasters in 2012*, The Brookings Institution and London School of Economics, Table 8, p. 56.

[224] Porfiriev, B. (2012) 'Economic issues of disaster and disaster risk reduction policies: International vs. Russian perspectives', *International Journal of Disaster Risk Reduction*, Vol. 1, pp. 55–61; Yanitsky (2012) 'The 2010 Wildfires in Russia…', p. 67; and Maier et al. (2011) 'Summer heat waves in Eastern Europe and western Russia…'.

In total, Russia deployed 166 120 responders, 133 000 of whom came from EMERCOM.[225] In addition 2 000 MoD troops and 3 000 MVD personnel were despatched to assist the firefighters.[226] Around half a million people were rescued and 4 600 villages were saved. The NCMC in Moscow took over the overall coordination and operational management of the disaster and communicated with the 535 teams on the ground as well as with the 40 regional operational centres. There were 300–400 forest fires breaking out every day and the use of aircraft discharging water in order to extinguish the numerous forest fires thus proved to be fairly effective. It was also found that monitoring the spread of fires with the help of satellites as well as mobile ground and air reconnaissance groups was very useful. Many temporary living facilities were established for the people affected and psychological support was offered.[227]

The scale of the fires led to foreign offers of assistance on a case-by-case basis, mainly involving high-technology equipment. Arriving international relief teams were allowed to pass border checkpoints and customs in a simplified way and were integrated into local emergency management systems, coordinated by EMERCOM. Furthermore, information was shared on a regular basis with the UN OCHA, the European Commission's Monitoring and Information Centre, NATO's Euro-Atlantic Disaster Response Coordination Centre, and the ICDO.[228]

According to experts the normal west-to-east movement of weather systems was blocked. This was a naturally occurring weather phenomenon common to Eurasia that led to the persistent weather in the summer of 2010. It is not known whether, or to what extent, climate change affects the frequency or intensity of blocking during summer.[229] This blocking event also helped trigger the floods in Pakistan and may even be behind the torrential rain in China that led to a deadly landslide. The climatic pattern known as El Niño was also a factor involved. There is evidence to suggest that climate change increases the number of heatwaves and makes them longer.[230] Climate models show a rapidly increasing risk of such heatwaves in western Russia by the end of this century.[231]

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[225] IPI (2011) *Responding to Natural Disasters: What Role for the OSCE?*, pp. 4–5, International Peace Institute, 2 June, http://reliefweb.int/sites/reliefweb.int/files/resources/Full_Report_1489.pdf (accessed 2015-04-12).

[226] Ferris, Petz and Stark (2013) *The Year of Recurring Disasters…* , Table 8, p. 56.

[227] IPI (2011) *Responding to Natural Disasters…,* pp. 4–5.

[228] IPI (2011) *Responding to Natural Disasters*…, pp. 4–5.

[229] Roffey (2014) *Climate Change and Natural Disasters*….

[230] Marshall and Hamzelou (2010) 'Is climate change burning Russia?'.

[231] Trenberth, K. E. and Fasullo, J. (2012), 'Climate extremes and climate change: The Russian Heat Wave and other Climate Extremes of 2010', *J. Geophys. Res*. Vol. 117, pp. 1–12; and Watts, Anthony (2011) 'NOAA finds climate change blameless in 2010 Russian heat wave', 9 March, http://wattsupwiththat.com/2011/03/09/noaa-findsclimate-change-blameless-in-2010-russian-heat-wave/ (accessed 2014-03-21).

The government tried to play down the scale of the disaster, the damage caused and hence the degree of its 'criticality' by controlling information flows. Although wildfires began in some regions in early May 2010 and continued to spread into July, the government did not begin communicating about the disaster until late July 2010. Government information focused on those consequences of the disaster that were brought under control. The tactic used was to limit information, again, in order to convince the citizens how effective federal authorities were.[232]

EMERCOM came under heavy criticism during the forest and peat-bog fires in central Russia, when large areas were covered by a blanket of smoke.[233] The state responded slowly to the unfolding crisis and proved unable to stop the fires without assistance from ordinary citizens. The authorities had problems coordinating information and assistance and providing prompt help to the victims. There was a severe shortage of fire fighters, fire engines, and basic equipment, which motivated scores of volunteers to participate, demonstrating a grassroots activism.[234]

The examination of Russia's response to the 2010 fires reveals two important findings. First, the government firefighting and other emergency forces were not capable of effectively preventing and containing the fires and, second, ordinary Russian citizens, acting in ad hoc firefighting units, proved to be a useful force in combating the fires.[235] In addition, local authorities had no strategies for fighting wildfires. Also evident was the state of neglect of former peat mining operations: peat bogs had been drained and could therefore catch fire.[236]

Citizens' use of crowdsourcing platforms to address emergencies

During the summer of 2010, the use of the Internet by Russian citizens to inform and to be informed spread through independent websites or blogs. This had not previously been the case and it drastically changed the working conditions for federal and regional authorities, forcing them to introduce different kinds of information filtering.[237]

In the first days of the wildfires, the Runet (the Russian Internet) became a major source of information about the disaster for the general public, while the traditional state-controlled media downgraded the scale of the emergency and stated that

[232] Pynnöniemi and Busygina (2013) 'Critical infrastructure protection and Russia's hybrid regime', p. 570.
[233] Dobrolyubov (2013) 'Emergency at the Defense Ministry…', pp.27–31.
[234] Giuliano, Elise (2013) 'Assigning Blame after Natural Disasters in Russia', PONARS Eurasia Policy Memo No. 281, September, p. 2. [first mention of this work]
[235] European Commission (2015) 'Europe in a changing climate', Centre for Climate Adaptation, http://www.climateadaptation.eu/ (accessed 2015-10-15).
[236] Yanitsky (2012) 'The 2010 Wildfires in Russia…', pp. 57–75.
[237] Pynnöniemi, Katri and Busygina, Irina (2013) 'Critical infrastructure protection and Russia's hybrid regime', *European Security*, Vol. 22, No. 4, p. 569.

everything was under control.[238] One interesting development was seen when, in response to the wildfires and the delays in handling the situation by authorities, activists created the first major crowdsourcing platform to address social emergencies. In August 2010, the 'Virtual Rynda: an Atlas of Help'[239] was developed by a group of volunteers.[240] Spontaneously organised crowdsourcing platforms and social media played a significant role in the fight against wildfires in 2010 and later during the floods in 2011.[241]

In an emergency situation, a crowdsourcing application can be used to mobilise a variety of resources, from crisis mapping, analytical resources and expertise to material, humanitarian aid and the coordination of emergency operations, as well as the actual response on the ground, including fighting fires and participating in clean-up operations.[242]

The platform had three columns: 'help requests', 'help offers' and 'help provided'. It provided an infrastructure where anybody could post a request for help or an offer to share a particular resource. The service helped to create a match between the request and the most relevant available resources.[243] It was possible to mobilise a wide audience to respond to an emergency, and in particular to fill the gaps created by the insufficient response of the authorities. Around 200 000 people visited the platform and left more than 1 600 messages.[244]

The activity of Internet users was not limited to sharing information about the fires. Dozens of groups were launched across the blogosphere and social networks, motivated by distrust of the government and its capacity to provide appropriate emergency response. Activists took on leadership responsibilities in organising

[238] Khokhlova, V. (2010) 'Russia: Towns and Villages on Fire', Global Voices, 1 August, http://globalvoicesonline.org/2010/08/01/russia-towns-and-villages-on-fire-5/ (accessed 2014-10-15).

[239] Rynda comes from the time of the Russian wildfires, ringing the bell traditionally used to call people to help.

[240] Ushahidi (2010) 'First Ushahidi deployment in Russia receives "Internet Oscar"', 1 December, http://blog.ushahidi.com/2010/12/01/Internet-oscar/ (accessed 2014-10-15).

[241] Asmolov, G. (2014a) 'Natural Disasters and Alternative Modes of Governance: The Role of Social Networks and Crowdsourcing Platforms in Russia', pp. 98–114, in Livingstone, S. and Walter-Drop (eds.) *Bits and Atoms: Information and Communication Technology in Areas of Limited Statehood*, Oxford, Oxford University Press.

[242] Asmolov, G. (2014b) 'Virtual Rynda – The Atlas of Help: Mutual Aid as a Form of Social Activism', in Zuckerman, E. and LeJeune, L. (eds.) *Global Dimensions of Digital Activism*, Cambridge, MA, MIT Center for Civic Media, http://book.globaldigitalactivism.org/chapter/virtual-rynda-the-atlas-ofhelp-mutual-aid-as-a-form-of-social-activism/ (accessed 2016-01-20).

[243] Asmolov, G. (2014b) 'Virtual Rynda – The Atlas of Help: Mutual Aid as a Form of Social Activism'.

[244] Global Voices (2010) 'Russia: Post-Emergency Sustainability of Crowdsourcing Projects', 23 October, https://globalvoices.org/2010/10/23/russia-post-emergency-sustainability-of-crowdsourcing-projects/ (accessed 2016-01-20).

emergency response operations. Two problems were information overload and the difficulties of optimising resource allocation. Another aspect was that site visitors came mostly from Moscow or St Petersburg, while the platform was used in other regions of Russia to a very limited degree.[245] Despite the initial, politically neutral position, bloggers found themselves in a situation where they had, unwillingly, to participate in a political clash with supporters of the Russian ruling party United Russia.[246]

After the experiences of the wildfires in 2010 the concept of crowdsourcing also gained popularity with the government around 2011, promoted by President Dmitry Medvedev. The authorities preferred to initiate development of their own crowdsourcing projects rather than collaborate with existing citizen-based platforms. The government-affiliated Dobrovoletz.rf platform was developed and managed by RosSoyuzSpas, an organisation of retired emergency response professionals affiliated with EMERCOM[247] in order to engage volunteers in emergency response. Dobrovoletz.rf was used in response to floods in the Amur area in the Russian Far East in 2013 (see the next chapter).[248]

The platform was primarily used as an internal system for the exchange of messages and the sharing of photographs, summary reports and general information. The researcher G. Asmolov suggests that the main purpose of tools like Dobrovoletz is not the engagement of people in response to an emergency or collaboration between the emergency services and spontaneous volunteers, but primarily controlling volunteers' resources. Volunteers were seen as a threat to the image of state institutions, as well as to the capacity of the state to keep monopoly control over the crisis situations. Accordingly, the authorities perceived volunteers not as a resource but primarily as a threat or problem that needs to be regulated. Volunteers expressed their lack of trust in and desire to collaborate with platforms like Dobrovoletz affiliated with the official emergency response institutions. This lack of trust resulted in increasing polarisation between citizen projects and state-affiliated platforms.[249]

It can be concluded that the role of this type of digital tool in disaster response should be examined within the political context of the power relationship between

[245] Asmolov, G. (2014b) 'Virtual Rynda – The Atlas of Help: Mutual Aid as a Form of Social Activism',.

[246] Global Voices (2010) 'Russia: Bloggers Clash With the Ruling Party', 8 September, https://globalvoices.org/2010/09/08/russia-bloggers-clash-with-the-ruling-party/ (accessed 2016-01-20).

[247] MChS (2013) 'Help affected by floods in Far East', http://en.mchs.ru/news/item/477952/ (accessed 2016-01-20).

[248] Asmolov, Gregory (2015) 'Controlling the crowd? Government and citizen interaction on emergency-response platforms', *The Policy and Internet Blog*, 7 December, http://blogs.oii.ox.ac.uk/policy/controlling-the-crowd-government-and-citizen-interaction-on-emergency-response-platforms/

[249] Asmolov (2015) 'Controlling the crowd?...'.

citizens who developed and used the tools and the authorities' attempts to control their use.

Consequences of the forest fires

The Public Commission on Investigation of Causes and Consequences of the Wildfires in Russia in 2010 concluded that it was government policy that indirectly had led to the fire catastrophe of 2010.[250] EMERCOM became involved, but as it turned out only gave priority to not allowing the fires to reach human settlements.[251] Many observers criticised the government for its inefficient response to the disaster. One action which had a dramatic effect was that a new Forest Code had been introduced 2007, resulting in responsibilities being transferred from federal to regional level. The federal forest protection service and its 24 regional bases and sub-regional units with specialised forest firefighters were then abolished. This included a loss of 70 000 forest wardens to ensure sustainable forest management and reduce illegal forest activities. They had also been responsible for the prevention of forest fires.[252] In particular, people found out that the system of forest protection had not been cut back either in Ukraine or in Belarus, which is why those countries were able to cope with similar forest fires.[253]

EMERCOM responded to the criticisms of its handling of the forest fires in 2010 by saying that it was coping well with its main job of providing disaster relief. It argued that fighting forest fires at the early stages was not part of its responsibility. That was the job of the Forest Patrol aerial units, whose capability had been severely weakened following the adoption of new forestry legislation.[254] In addition, the new Forestry Code was written from the perspective of the user of forests as a resource rather than from the standpoint of protecting forest ecosystems. Another reason for the large-scale catastrophe was the lack of an efficient strategy for putting out wildfires.[255] In addition years of poor planning contributed to the severity of the fires, as fires swept through peat bogs, which had been initially drained (and not re-flooded) by engineers to provide a source of peat for electrical power stations.[256] The prime source of around 70 per cent of forest fires was assessed to be violations of fire safety rules by people while in forests in the dry weather.

[250] European Commission (2015) 'Europe in a changing climate…'.
[251] Yanitsky (2012) 'The 2010 Wildfires in Russia...', pp. 57–75.
[252] Goldammer (2010) *Preliminary Assessment of the Fire Situation...*
[253] Yanitsky (2012) 'The 2010 Wildfires in Russia…', p. 65.
[254] Dobrolyubov (2013) 'Emergency at the Defense Ministry…', pp.27–31.
[255] Yanitsky (2012) 'The 2010 Wildfires in Russia…', p. 62–64; Lazarev, Sobolev, Soboleva and Sokolov (2012) *Trial by Fire…* , p. 12; and Giuliano (2013) 'Assigning Blame after Natural Disasters…', p. 3.
[256] Ferris, Petz and Stark (2013) *The Year of Recurring Disasters…,* p. 59; and *New York Times* (2010) 'Past Errors to Blame for Russia's Peat Fires', 12 August.

The national and international media, as well as citizens' websites and blogs, had spread the notion that state structures were unable to respond quickly and accurately to the situation and of local citizens being left to face the catastrophic situation alone.[257] One of the aims of the official communications was to discredit the notion that the severe consequences were caused by unskilled and powerless firefighters and security forces. The construction of a positive image, in the official information, of the government and its role and functions in responding to the situation was crucial for the political leadership's image and credibility.[258]

During the summer 2010 fires, Prime Minister Vladimir Putin was the most active, or at least the most visible, government leader in the media, even at the expense of Sergei Shoigu, the long-serving minister of EMERCOM. Shoigu generally has appeared often in the media during natural and technological disasters, but he was totally removed from the media scene during the summer 2010 fires. Putin has also based his political image in part on his ability to manage emergencies. Governing of the crisis was through Putin's personal control and extreme centralisation of power during the 2010 fires. One aspect of this was tightly linked to the implementation of a video surveillance system on reconstruction sites in the devastated areas so that he personally could oversee the work.

Putin used different terms to describe the disaster over time, as the initial 'forest fires' (*lesnye pozhary*) turned into the more general 'natural fires' (*prirodnye pozhary*). The concept of 'natural fires' first appeared in official communications on 4 August 2010. The change in the classification of the disaster thus conveys a shift from potential accusations directed at the forest management agencies to a statement that the situation was unmanageable.[259]

Putin and Medvedev tried to deflect responsibility from the federal government. Some experts criticised Putin directly, alleging that he personally pushed the Forest Code through parliament, benefiting companies with which he and Medvedev were associated, and which prioritised profits rather than sustainable forestry.[260] Due to this, many regions were not well prepared in 2010 when the huge wildfires broke out. During the summer of 2010 local fire brigades, EMERCOM and the Armed Forces tried to fill the gaps but they were understaffed and had insufficient or inadequate firefighting equipment.[261]

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[257] Greenpeace Russia (2010) 'The Russian Ministry of Emergency Situations Underestimates Data on the Area Affected by Forest Fires in Russia by at Least 6.5 Times', 27 August, http://www.greenpeace.org/russia/ru/news/4932769 (accessed 2014-12-08).

[258] Bertrand, Eva (2012) 'Constructing Russian Power by Communicating During Disasters', *Problems of Post-Communism*, 59:3, pp. 31–40, http://dx.doi.org/10.2753/PPC1075-8216590303 (accessed 2014-10-20).

[259] *Ibid*.

[260] Giuliano (2013) 'Assigning Blame after Natural Disasters…', p. 3.

[261] Goldammer (2010) *Preliminary Assessment of the Fire Situation in Western Russia*....

The forest fires and drought during 2010 revealed that some regional administrations ignored or tried to cover up appeals for help and distressing reports of the real magnitude of the disasters to avoid being blamed for their handling of the situation.[262] The federal response to the wildfires is difficult to assess in detail.[263]

The Russian government responded after the fires with several policy initiatives to improve forest fire management, among them initiatives for short-term investments in fire suppression and prevention equipment; organisational changes in federal responsibilities for fire prevention and firefighting; and more transparency and accountability by posting satellite photographs of all territories affected by forest fires on the Internet.[264]

After the fires were extinguished, the federal government organised the large-scale provision of aid to the affected population and began reconstruction works in the burned villages. In a short period of time it built new houses for all villagers who had lost their homes. In addition, villages that had suffered received public goods such as new roads and gas infrastructure. The reconstruction process was under the direct control of Putin. His visits were widely broadcast by Russian media. Putin also publicly criticised regional and local-level authorities. The heads of the most affected villages were asked to resign, shifting the blame on to local authorities and framing the national government as a saviour.[265]

5.2 Flooding 2012–2014

More than 500 cities and towns and tens of thousands of villages a year face the threat of floods in Russia. Seven devastating floods occurred in Russia in the past 20 years (1995–2014) causing widespread damage.[266] An increase in flooding events in the first decade of the 21st century has been reported for several Russian river basins, including the Volga, Ob and Don. Many cities and regions of Russia are partially flooded once within a period of eight to 12 years.[267] Runoff increased by 5–15 per cent in many rivers in the last decades of the 20th century.

[262] Akimov and Porfiriev (2012) 'The Institutional Framework and Governance…', p. 76.
[263] Giuliano (2013) 'Assigning Blame after Natural Disasters…, p. 3.
[264] European Commission (2015) 'Europe in a changing climate…'
[265] Lazarev, Sobolev, Soboleva and Sokolov (2012) *Trial by Fire*...p. 13.
[266] *TASS* (2014) 'Threat of flooding remains in Siberia', 9 June, http://itar-tass.com/en/russia/735378 (accessed 2015-03-15).
[267] Matishov, G. G., Chikin, A. L., Berdnikov, S. V. and Sheverdyaev, I. V. (2014) 'The Extreme Flood in the Don River Delta, March 23–24, 2013, and Determining Factors', *Doklady Earth Sciences*, Vol. 455, Part 1, pp. 360–363; and WWF Russia and OXFAM (2008) *Russia and Neighbouring Countries: Environmental, Economic and Social impacts of climate change* (eds. I. E. Chestin and A. Nicholas), WWF Russia, Oxfam GB.

Observations of past data on floods suggest that there is an increase in the frequency of large flood events.[268]

In the spring and summer of 2001, one of the earth's largest floods occurred in Lensk on the Lena riverbank (Sakha Republic).[269] In 2002–2007, the Lena, one of the world's ten largest rivers, experienced two floods more severe than any previously recorded.[270] Ice-jam-induced floods in the Lena River Basin are expected to become more frequent.[271] EMERCOM has identified the most dangerous and most ice-jam-prone stretches of rivers in northern Russia, which will require the most attention by EMERCOM.

To warn of rising water levels over a certain limit, a large number of water-rise control points are set up each year in flood-prone areas. If there is a rapid rise in water level, the information is transmitted to the integrated dispatch services, regional and NCMC.[272]

Some cities in Russia are used to flooding. St Petersburg, for example, has experienced more than 300 floods since the city was founded in 1703. Storm surges from the Baltic Sea into the Neva River have resulted in flooding in St Petersburg and these floods have become more frequent.[273] A consequence of this was the construction of the St Petersburg dam from 1978 to 2011 to protect the city. It was first used on 28 November 2011.

Significant floods are on the increase in several river basins and the costs to human life and property are extensive. This has been a challenge for President Putin and the government. The country's leadership needs to be perceived as able to respond to these recurring floods and is implementing adequate flood control measures.[274] In order to see how EMERCOM and the government handled a couple of the most serious flood incidents from 2012 to 2014, these will be discussed more in detail below.

[268] Roshydromet (2008) *Assessment Report on Climate Change*...
[269] WWF Russia and OXFAM (2008) *Russia and Neighbouring Countries: Environmental…*
[270] Perelet, Renat, Pegov, Serguey and Yulkin, Mikhail (2007) *Human Development Report 2007/2008, Fighting climate change: Human solidarity in a divided world*. Climate Change. Russia Country Paper, United Nations Development Programme (UNDP).
[271] National Intelligence Council (2009) *Russia: The Impact of Climate Change to 2030*, Special Report, NIC 2009-04D, Joint Global Change Research Institute and Battelle Memorial Institute, Pacific Northwest Division, p. 16.
[272] MChS (2013) 'All-Russian flood – what awaits citizens', 29 March, http://en.mchs.ru/articles/interviews/item/395980/ (accessed 2014-04-02).
[273] Perelet, Pegov and Yulkin (2007) *Human Development Report…*; and Roshydromet (2008) *Assessment Report on Climate Change…*.
[274] Josephson, Paul (2014) *Russian Rivers in Crisis*, IREX Scholar Research Brief, July.

Floods in 2012

On 7 July 2012, heavy rains, the equivalent to five months of rain during one night, hit the town of Krymsk and neighbouring towns in Russia's Krasnodar Region on the Black Sea coast, resulting in torrential floods. In Krymsk, the flood waters reached 5 metres over the normal level within hours.[275] The flood killed at least 171 people (mostly in Krymsk) and 3 910 were injured.[276] The Russian Investigative Committee put the number of those killed in the floods at 162. According to the calculations of a special commission, the floods destroyed 5 185 houses and negatively affected 26 475 people in the cities of Gelendzhik, Krymsk, Novorossiysk and several settlements. Power lines, distributing pipelines, culverts, bridges and local roads were damaged, as was the federal highway the M-4 Don. Villages were flooded, roads were washed away and electricity supply was disrupted.[277] The total cost of the flood damage in the area was estimated at 1 billion roubles.[278]

Emergency assistance was slow to arrive and there were critical comments in the press.[279] The government's poor handling of the situation and the widespread distrust of the authorities' actions raised questions about the Russian government's preparedness for the 2014 Winter Olympics. Meteorologists indicated that they had warned the EMERCOM regional branch of the impending storm in the mountains that surrounded Krymsk four hours in advance. However, survivors of the flood say they received no prior warnings.[280] The Russian government acknowledged that it had received word of the pending floods at 10pm the evening before, but for some reason it decided not to warn the population. Although the government denied them, rumours persisted that the flood was caused by the deliberate opening of a sluice gate. No evidence of this was ever found. The flood hit at about 2am. President Putin arrived in the region later the same day.[281]

Russia's EMERCOM minister accused local officials of not doing enough to prevent the floods and this initiated discussions on Russia's readiness for natural disasters.[282] The local government was criticised and said to have been aware of the rapidly rising water, and yet its efforts to warn people with the use of sirens

[275] *Gazeta.ru* (2012) 'This could happen again' (in Russian), 9 July, http://www.gazeta.ru/social/2012/07/09/4675249.shtml (accessed 2014-12-10).
[276] Dzutsev, Valery (2012) 'Government Unaccountability Blamed for Poor Response to Krasnodar Floods', *North Caucasus Weekly*, 13 July, Vol. 13, Issue 14, pp. 13–15; and *New York Times* (2012) 'After Russian Floods, Grief, Rage and Deep Mistrust', 10 July.
[277] *Pravda* (2012) 'Natural disasters exhaust Russian economy', 13 July.
[278] *Ibid.*
[279] Giuliano (2013) 'Assigning Blame after Natural Disasters…, p. 2.
[280] *Gazeta.ru* (2012) 'This could happen again'.
[281] Ferris, Petz and Stark (2013) *The Year of Recurring Disasters…*, pp. 21–22; and *New York Times* (2012) 'After Russian Floods, Grief, Rage and Deep Mistrust', 10 July.
[282] *Reuters* (2012) 'Russia mourns flood victims, local officials blamed', 9 July.

and loudspeakers were inadequate since most people were sleeping.[283] The federal authorities have acknowledged that failing to warn residents was a major mistake, and the head of the region, Vasily Krutko, was dismissed.[284] A court in southern Russia convicted four local officials of criminal negligence in failing to alert residents to flash flooding in the city of Krymsk in 2012.[285]

According to Putin, the victims of the disaster in the Kuban area in Krasnodar Region were to be paid up to 160 000 roubles from the federal and regional budgets, and the families who lost relatives would receive 2 million roubles. The president also said that new houses in place of the lost ones would be built with money from the federal treasury. The flooding was not the first to occur in the Krasnodar Region. Just two years earlier, in October 2010, a flood occurred in Kuban and caused widespread damage with 17 people killed, 7 500 people injured, and 1 500 homes flooded.[286] The government response was insufficient to provide for the immediate needs of those who were permanently or temporarily homeless and to handle the consequences. This provided an opportunity for NGOs, volunteers and donations to fill the gap, which they did with 2 000 tons of humanitarian aid and 2 500 volunteers coming from all over Russia.[287] The Russian government faced growing pressure to install a new emergency warning system and improve weather forecasting after survivors complained that little was done to prevent people from being killed due to the floods.[288]

Federal leaders again used the tactic of identifying and blaming the local leaders responsible for the handling of the disaster. The federal government was more successful in doing this in the flood disaster than with the widespread wildfires in 2010 described above.[289] Putin ordered an inquiry into why warnings were not given and who should have given them.[290]

Floods in 2013

Extremely heavy rainfall occurred again in Russia and China in July 2013, which caused the Amur River to rise to record levels and flood surrounding areas. This was the worst flooding in 120 years (see the cover photograph).[291] The area around Komsomolsk-on-Amur was the worst hit. The Amur is the last free-flowing major

[283] Lindemann-Komarova, Sarah (2015) 'Earth Hour 2015 is over as spring thaw in Siberia begins … Natural Disaster Response in Putin's Russia', *Johnson's Russia List*, 3 April.
[284] *New York Times* (2012) 'After Russian Floods, Grief, Rage and Deep Mistrust', 10 July.
[285] *New York Times* (2013) '4 Officials Convicted of Negligence Over Russia Flooding', 19 August.
[286] *Pravda* (2012) 'Natural disasters exhaust Russian economy', 13 July.
[287] Lindemann-Komarova (2015) 'Earth Hour 2015 is over as spring thaw in Siberia begins …'.
[288] *Reuters* (2012) 'Russia floods spur calls for emergency warnings', 16 July.
[289] Giuliano (2013) 'Assigning Blame after Natural Disasters…', p. 3.
[290] *Reuters* (2012) 'Russia mourns flood victims, local officials blamed', 9 July.
[291] NIBR (2013) 'Flood crisis response in Russia's Far East', Norwegian Institute for Urban and Regional Research International Blog, 22 October, http://www.nibr.no/en/news/other-nibr-news/flood-crisis-response-in-russia%E2%80%99s-far-east.aspx (accessed 2015-11-09).

river in Asia located along the border of eastern Russia and northern China. Originating in the Khentii Mountains of Mongolia, the Amur-Heilong River is the world's tenth longest river flowing eastward until it connects with the Strait of Tartary. The river spans five distinct ecological regions, from grasslands and boreal forests to desert and tundra. The Amur River, which serves as a natural border between Russia and north-east China, was running at record high levels – around 7 metres over the average level.[292]

Evacuations began in Khabarovsk, the administrative capital of the Far Eastern Federal District.[293] About 32 000 people had to be evacuated and 4 000 homes and 190 000 residents in 235 villages or small towns suffered some form of property damage. On the Chinese side of the Amur, the flood killed 200 people; on the Russian side, no one died.[294] Over 1 million square kilometres (km) of Russia's Yakutia region was submerged by water. It was unique in that it spread over more than 2 000 km from west to east, while its width was more than 500 km according to the NCMC.[295] Meteorologists cited several contributing factors for the record-breaking precipitation and high waters: an abnormal change in air circulation, a snowy winter followed by a late spring, forest fires, and logging eliminating trees that retain moisture.[296]

EMERCOM employees used UAVs to monitor the flood situation in the Khabarovsk Territory.[297] EMERCOM had assessed the potential risk and impact of flooding beforehand and was able on this occasion to give the population a timely warning. Providing a response in time was important for preventing more damage and probably the loss of life. The evacuation of people away from the affected areas went quite smoothly as the area was not densely populated. In some places there was enough time to save livestock, in other places the focus had to be solely on rescuing people.[298] The authorities deployed a large number of emergency personnel and thousands of troops to guard abandoned homes in order to prevent looting.[299] The MoD deployed 25 000 troops to deal with the extensive flooding and cooperated well with EMERCOM which had no real trouble

[292] IFRC (2013) 'Russian Far East sees worst flooding in 100 years', 26 August 2013, Report from the International Federation of Red Cross and Red Crescent Societies.
[293] *Ibid*.
[294] Lindemann-Komarova (2015) 'Earth Hour 2015 is over as spring thaw in Siberia begins … '; and *BBC* (2013) 'Russia battles huge far east flood - 20,000 evacuated', 19 August.
[295] *RIA Novosti*, 'Russia's emergency situations minister said Wednesday that flooding caused by weeks of torrential rains across three far-eastern regions was a federal emergency', *RIA Novosti*, 7 August.
[296] Lindemann-Komarova (2015) 'Earth Hour 2015 is over as spring thaw in Siberia begins …'.
[297] Topolsky, Teterin and Gavrilov (2015) 'Use of Unmanned Aerial Vehicles in the interests of EMERCOM…', p. 4.
[298] NIBR (2013) 'Flood crisis response in Russia's Far East... '.
[299] *BBC* (2013) 'Russia battles huge Far East flood - 20,000 evacuated', 19 August.

coordinating the relief activities.[300] The damage, however, was again very extensive.[301]

The water reservoirs of the Zeiskaya and Bureiskaya hydroelectric power stations were completely full, and water began to spill over the dams.[302] Throughout 2014, government compensation to flood victims was distributed and amounted to 40 billion roubles. This provided money to cover harvest and material losses, new homes for those who lost them and capital repairs to the houses still standing.[303] This was the most costly flood disaster in Russia's history. There was also widespread flooding in neighbouring provinces of China.[304]

Putin went to the region after the start of the flood – late according to some critics – and immediately took control of crisis management. He gave detailed orders, reprimanded inefficiencies and criticised excessive bureaucracy. Putin expressed disappointment with local leaders' management of the crisis and demanded action at a detailed level concerning issues such as deliveries of fuel, the repair of roads and food provision to flood victims.[305] Again, for the government it was a priority to neutralise any social and negative political consequences of this natural disaster. Some observers pointed out that this appeared more important than taking the right decisions to limit the consequences of the disaster. Putin promised to create a governmental commission for preventing and managing the consequences of river floods in its Far East.[306]

According to the Norwegian Institute for Urban and Regional Research analysis, the impact of the flood could have been reduced had two of the major hydroelectric power stations (Zeisk and Bureisk [cf. above]) been prepared to store more water than was forecast to come. Water levels in dams were instead set high to achieve the highest possible production of energy and keep the water levels higher than permitted by federal authorities. Had the water level been lower initially, the dams could have burst as they filled up and the impact of the flooding would probably have been far more serious.[307]

The flood confirmed some of the weaknesses of the Russian governance system as a whole. The first is a management system in which people at subordinate levels are reluctant to make independent decisions for fear of being blamed by the federal

[300] Galeotti, Mark (2013) 'On Shoigu, Russia and militarization', *Moscow News*, 28 August.
[301] *BBC* (2013) 'Russia battles huge Far East flood – 20,000 evacuated', 19 August.
[302] *Russia Beyond the Headlines* (2014) 'Flooding hits southern Siberia and Russian Far East', 6 June.
[303] Lindemann-Komarova (2015) 'Earth Hour 2015 is over as spring thaw in Siberia begins …'
[304] *BBC* (2013) 'Russia battles huge Far East flood – 20,000 evacuated', 19 August.
[305] NIBR (2013) 'Flood crisis response in Russia's Far East… '.
[306] Stanovaya, Tatiana (2013) 'Russia's Far East Goes Underwater', Institute of Modern Russia, IMR, 10 September, http://imrussia.org/en/analysis/politics/550-russias-far-east-goes-underwater (accessed 2015-01-12).
[307] NIBR (2013) 'Flood crisis response in Russia's Far East...'.

or government authorities. A crisis management system depends on rapid and well-coordinated actions of all actors at all levels. Russia showed during this flood crisis that it could handle a crisis of this magnitude fairly well due to its experience in handling extreme events, among them, floods. A number of improvements have been made, installing modern anti-flood technologies, an efficient flood forecast-warning system, high-level flood risk assessment and flood-related databases. The number of EMERCOM staff in the Far East district is also to be doubled, and more resources including equipment will be stored in the region.[308]

The now Defence Minister Sergei Shoigu has become a popular politician and successful top manager in Russia.[309] Shoigu acted in his new role as head of MoD, as he was the director of operations aimed at managing the situation and still controlled EMERCOM actions, in spite of Vladimir Puchkov being its new minister. Putin discussed relief measures mainly with Shoigu instead of with Puchkov, making obvious his view of the line of command. This also resulted in rumours of a merger of MoD and EMERCOM. This would strengthen the military and weaken the civilian control over handling emergency situations.[310] In the end, this did not happen.

According to Putin, to avoid major flooding in the future, a system of regulating water resources should be established in the Far East and, if necessary, new hydroelectric power stations should be built.[311] As one of the dams was eventually breached, apparently due to negligence, the minister for Far East development and the president's envoy to the Far East Federal District, Viktor Ishaev, was removed from office. The number of flaws in flood crisis management that were revealed provided good excuse to replace him so as to limit criticism of the higher levels of leadership.[312]

Floods in 2014

Again in May 2014, wide regions of Siberia and North Caucasus were affected by massive floods. On this occasion, 22 545 persons were evacuated in 25 municipalities in the republics of Khakassia, Altai, Tuva and the Altai Territory in Siberia as well as in the Republic of Adygeya in the North Caucasus. According to the national emergency response centre of EMERCOM, severe damage was reported with more than 4 000 houses and 12 motorways flooded. In addition, more than 1 500 persons had to be sheltered in evacuation centres.[313] At least six died

[308] *Ibid*.
[309] *Nezavisimaia Gazeta*, 22 August 2015.
[310] Stanovaya (2013) 'Russia's Far East Goes Underwater…'; and *Russian Defence Policy* (2013) 'Golts on Shoygu's Tenure (Part I)', 8 September, https://russiandefpolicy.wordpress.com/category/shoygus-reforms/page/4/ (accessed 2015-11-09).
[311] Stanovaya (2013) 'Russia's Far East Goes Underwater… '.
[312] NIBR (2013) 'Flood crisis response in Russia's Far East... '.
[313] IFRC (2014) *Russian Federation 2014 Annual Report*, January–December 2014, International Federation of Red Cross and Red Crescent Societies.

and up to 10 000 lost their houses in Altai, where the area covered by water had a population of 37 000.[314] Between June and September 2014, large territories of Siberia were affected with a total population of more than 200 000 people, of whom over 40 000 were evacuated to safe places. Many people criticised rescue teams for being too slow to act.[315]

Putin allocated funds from the federal budget in 2014–2015 to the affected regions to develop methods for assessing and compensating losses from emergencies and natural disasters, and to develop standard procedures for how government agencies should best handle the aftermath of emergency situations and natural disasters.[316]

These examples have shown that flooding is a regular occurrence in Russia and climate change will probably increase the risks further. Preventative measures should therefore be high on the agenda for EMERCOM. So far the improvements made to limit the effects of flooding seem to have had limited effects. Instead the highest leadership has opted for managing the situation by blaming officials on the regional or local levels.

[314] IFRC (2014) 'Russia: Floods – Emergency Plan of Action', 11 June, Relief Web, Report from the International Federation of Red Cross and Red Crescent Societies, 11 June; and *Moscow Times* (2014) 'Heavy Floods Hit Russia's Siberia', 3 June.

[315] IFRC (2015) *Emergency Plan of Action Final Report Russia: Massive floods*, 15 January, Report from the International Federation of Red Cross and Red Crescent Societies.

[316] President of Russia (2014) 'Instructions following meeting on disaster relief work following floods in Russian regions', 10 September, http://eng.kremlin.ru/acts/22940 (accessed 2015-02-25); and Federal law (2015) 'On Changes to legislation to bring order to mechanisms providing citizens help in restoring (or replacing) property lost as a result of fires, floods and other natural disasters', No. 694881-627, February.

6 Discussion and conclusions

6.1 Organisation

EMERCOM has rapidly grown into an important so-called power ministry with its own uniformed personnel and the third-largest of Russia's forces. A number of previously independent organisations and new tasks have been incorporated into it. An integrated system for handling emergencies is in place and functions fairly well. EMERCOM has become an impressive organisation with vast resources in personnel (including military rescue units), equipment and means of transport on land, air or water. It is important to remember how vast Russia is geographically and why it is difficult to have central resources that can be used at short notice in a crisis situation far from Moscow. There is a large and complex set of ministries, federal agencies, regional and local authorities that need to cooperate well and coordinate their actions to be able to handle an emergency situation in a rapid and efficient manner. The RSChS is an important addition in the emergency structure as well as the NCMC if they are used and operated in an efficient way. Most elements are in place to achieve an effective crisis management system.

The Civil Defence Troops were part of the Armed Forces until they were transferred to EMERCOM after the dissolution of the Soviet Union. When the Armed Forces were to be downsized it was decided that the Civil Defence Troops' knowledge and capabilities should be transferred to EMERCOM under Shoigu's command. This was at a time when President Yeltsin needed a loyal force that he could depend on. At the same time it gave Shoigu a more powerful role in the government, which resulted in him becoming a member of the Security Council. The military personnel with specific capabilities for civil defence, chemical, biological and radiological protection, demining and underwater operations could be well used for handling different types of high-risk emergency. The Civil Defence Troops were later transformed into the Rescue Military Units in 2011 and integrated into the Search and Rescue Service of EMERCOM in peacetime. These units have had a leading role in many serious emergency situations in and outside Russia.

Russia's system for handling emergencies is still centralised. NGOs represent a new element in the emerging crisis management structure in Russia, and could become part of a trend towards a decentralised system. However, NGOs are not an integrated part of the system, even if some local-level cooperation sometimes occurs.[317]

[317] Pursiainen, Hedin and Hellenberg (2005) *Civil Protection Systems in the Baltic Sea Region…',* pp. 17–18.

Several reforms and improvements have been made to clarify roles and responsibilities relating to the management of natural disasters and technological accidents since EMERCOM was established. There are large numbers of laws and regulations in place and federal target programmes to improve disaster risk reduction and emergency capabilities. There is a large organisation from the central to local levels. In spite of this, when disasters occur authorities are often blamed for not giving warnings in time or handling the situation well as seen from the examples discussed of flooding and wildfires. Personnel and equipment are not lacking; it is more a question of whether the organisation is performing its work in an efficient manner.

6.2 Response versus prevention

The frequency and scale of natural disasters and industrial accidents have increased in recent years. Different factors such as climate change, urbanisation processes, development of the energy sector and ageing industries as well as the ageing infrastructure are contributing to this trend. A slow shift is taking place towards more mitigation and prevention components rather than, as previously, only being reactive to emergencies and disasters when they have already occurred.

The budget allocations for EMERCOM are, however, still mostly focused on preparedness and response. Both planning and response capabilities have been much strengthened. Characteristic of the emergency system is a centralised management and monitoring role with a subordinated regional structure.[318]

The effects disasters have on the population and infrastructure are exacerbated by several factors such as settlements in disaster-prone areas, land and water degradation, lack of regulations and standards which take into account hazard risks, and failure to comply with building codes and land-use plans. Early warning systems for various hazards can be developed to monitor heatwaves, forest fires and hydro-meteorological events such as floods. Flood risk reduction measures can range from soft measures such as developing flood management plans to hard measures such as investment in flood protection schemes. A combination of regulatory, structural and protective measures can be taken by both the government and the public to reduce risk, reduce the country's vulnerability to natural hazards and adapt to climatic changes. Another important adaptation measure is to strengthen the technical capacity of emergency responders, including increased use of UAVs and social media. Moreover, ensuring that the public is aware of the risk of natural hazards and is educated in preparedness and response measures could improve the situation.

[318] EMERCOM of Russia (2014) Web site, http://en.mchs.ru/Forces_and_Facilities/National_Emergency_Management_Centre (accessed 2013-12-20).

6.3 Weaknesses in the crisis management system

It is generally accepted that an efficient crisis management system depends on rapid and well-coordinated actions of all actors at all levels. There is, however, a clear weakness in the Russian governance system for handling serious emergencies. In the Russian crisis management system officials at subordinate levels are reluctant to make independent decisions for fear of being blamed by the federal authorities and will sometimes wait until they are ordered to act by higher, central levels. To this can be added that the legislation on natural disasters and technological accidents is often not clearly formulated to ensure a clear division of responsibilities between federal and regional or local levels when emergencies occur.[319]

Another reaction noted was that officials did not report how serious the situation really was so as not to be blamed. This is of course very negative for handling an emergency when rapid decisions are needed to allocate resources according to how the crisis is developing in the affected area. Another aspect is that leaders initially try to deny that there is a crisis and claim that everything is under control. Sometimes there is also a tendency on the part of regional and local leaders to spread disinformation. Another is that authorities tend to focus on short-term issues, such as compensation and the need for shelters or reconstruction, to satisfy the immediate expectations of the general public, while they neglect the more long-term issues after an emergency and preventing future incidents. Those tasked with managing the crisis are, in other words, well aware of the 'blame game' after the event where leaders identify 'scapegoats' so as to avoid being blamed themselves. Apart from a tendency to deny that a crisis is developing, regional and local officials are very careful about taking any decisions before these have been cleared by higher authorities, resulting in delays or inaction until orders come from above. This was also observed in the examples given in this report.

For disaster risk management to be effective, institutional structures and management tools to respond to weather-induced catastrophic events should be key elements of local and national adaptation strategies. The effect of climate change on Russia will significantly increase Russia's exposure to natural hazards. Most hazards that lead to disasters cannot be prevented but their effects can be mitigated. Hazards may be natural in origin, but it is the way in which societies have developed that can promote a good way of handling disasters. Disaster risk reduction employs measures at all levels to curb disaster losses through reducing exposure to different hazards and enhancing the coping and adaptive capacities of

[319] AP/CAT (2005) 'Comparative analysis of the Inter-ministerial Management…', pp. 85 and 89.

vulnerable populations. There is general agreement that adaptation can be an important tool for managing risks, reducing vulnerability and building resilience.

Another general weakness in the Russian governance system is that when a high-ranking leader like Shoigu is promoted to another position he will usually take with him his closest colleagues and place them in prominent posts in the new organisation. This means that when such promotions take place this can result in a significant loss of managerial capacity and know-how, as was seen in EMERCOM when Shoigu left.

6.4 The media and social media's role

Media attention will be great when emergency situations occur. Disasters and emergencies result in political leaders and federal institutions coming under pressure to act to show the media and the general public that they are in control of the situation so that they will not be criticised or blamed for inaction. An illustrative example of this is the way in which the highest political leaders dealt with the summer 2010 forest fires and heatwave. The forest fires affected relatively densely populated areas situated in the European parts of Russia, including Moscow which suffered from smog from the fires. This resulted in much national and international media attention, as well as in social media platforms. These spread the notion that state structures were unable to respond fast enough or describe the real situation accurately. Many locals felt disillusioned and abandoned by the authorities when trying to fight the fires. Similar situations could be seen after the floods in 2012 and 2013.

Most of the warnings by scientists and leaders of NGOs concerning the probability of wildfires before 2010 and risks of floods were ignored. EMERCOM is a powerful but an autonomous organisation that is not oriented towards interacting with the local populations, volunteer firefighters and other volunteers. The Ministry has its own system of communications and notification, which is not accessible to the general public or NGOs.[320]

There is a trend of increasing politicisation and towards greater media attention to disasters and crisis management. One consequence is the increasing importance of crisis communication. Media reporting, even if not free but restricted, as in Russia, creates expectations as to how a crisis needs to be managed. Russian leaders tend to be wary of crises as they can heighten instability and loss of trust by the general public, and as a consequence undermine the legitimacy of the state and its leaders.

A new aspect has been the use by citizens and NGOs of social media during emergencies to better inform the general public of the situation and to provide help as the authorities were perceived to be too slow or ineffective in taking action, and

[320] Yanitsky (2012) 'The 2010 Wildfires in Russia…', p. 73.

even tried to limit information flows. Control over the population has always been important for the leadership in Russia and this new development with social media was perceived as a threat rather than as a help. The government's response was to initiate its own Internet platform to try to channel volunteers' activities, but with limited success. The use of social media can be very useful in such emergency situations like the widespread wildfires 2010. This has also been found in other emergency situations in- and outside Russia.

6.5 Natural disasters a challenge for the political leadership's credibility

A positive image of the government's role and functions in responding to the situation was given priority during emergencies. During the crises described above, Putin (as prime minister or president) was the most active, or at least the most visible, government leader in the media, even at the expense of Sergei Shoigu when he was the minister for EMERCOM. Putin wanted to demonstrate that it was he who controlled the situation. Putin was also visible in the media as he instructed his ministers or high-ranking officials on what they should do.[321]

The examples of the floods in 2012–2014 and forest fires in 2010 illustrate how leading politicians deal with a crisis and how hierarchical relationships are structured between federal and regional governments during a disaster in Russia. The subordination of regional and local authorities to federal structures often took place by distancing the federal centre from the regional powers, mainly through the use of communication tools showing federal leaders' total control over the regional powers.[322]

In spite of the increased visibility of Putin during the crises, as discussed above, the emergency response and relief actions were perceived by those affected as inadequate. There were several reasons for this and one was poor coordination among the various bureaucracies and between federal and regional/local levels that had responsibilities to deal with aspects of the crisis.

Other reasons were new legislation and cost-reducing measures that had earlier weakened the federal environmental protection agency, a new forest code resulting in the near-elimination of forest wardens and fire brigades, and a lack of funding for NGOs which might assist those in need. There was a feeling among many involved that the president must order a response for anything at all to happen. In virtually every case, the government's response was to blame officials on the regional or local levels but never higher up on the federal level.

[321] Bertrand, Eva (2012) 'Constructing Russian Power by Communicating…', pp. 31–40.
[322] *Ibid*, pp. 31–40.

6.6 International cooperation

Disaster risk reduction is one area where Russia hopes to improve and develop its international relationships and cooperation. The head of EMERCOM has indicated that Russia will fulfil the UN Sendai Framework for Disaster Risk Reduction 2015–2030.[323] This will involve implementing a number of initiatives and commitments to strengthen international cooperation so as to promote regional and global networks of crisis management.[324] Russia has developed and discussed with the EU a plan of action in order to develop an effective and efficient multilateral international emergency management mechanism designed for international response to high-profile catastrophes and crises.[325] It is hoped that the implementation of this will open the way to a Global Emergency Management System. According to Russia there is also a need for international emergency rapid response forces.[326]

EMERCOM's 'humanitarian convoys' are a good illustration of how the resources of the Ministry can be used for international operations and in conflict areas. It is worth noting that international rules and regulations for how humanitarian aid transport should be carried out were not followed in this case and that independent verification of the contents of the transports was not permitted. This has also shown the international community's limitations in trying to influence this kind of unilateral action by a state.

[323] Third World Conference on Disaster Risk Reduction (2015) 'Sendai Framework for Disaster Risk Reduction 2015-2030', A/CONF.224/CRP.1, 18 March.

[324] MChS (2015) 'Vladimir Puchkov: Investing in risk reduction more effective than paying for consequences of disasters', 4 September.

[325] Russian Federation (2011) 'Statement made at the Global Platform for Disaster Risk Reduction', An Official Statement made by Mr Yuri Brazhnikov, Director of the International Cooperation Department and Head of the Russian National Emergency Response Corps, Ministry of the Russian Federation for Civil Defense, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM of Russia), Russian Federation, at the third session of the Global Platform for Disaster Risk Reduction, May 2011; and *RIA Novosti* (2011) 'Russia: Medvedev urges global system to fight disasters', 14 April.

[326] Russian Federation (2011) 'Statement made at the Global Platform for Disaster Risk Reduction'….

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Appendix 1

Definitions

Accident

In the context of hazardous industrial facilities, accident means the destruction of structures or technical devices used at a hazardous industrial site, an uncontrolled explosion and/or emission of hazardous substances.[327]

Disaster

Disasters – technological or natural – are defined in Russia as disturbances of the current activity of a populated region due to abrupt technological or natural impact (catastrophes or accidents) resulting in socio-economic or ecological damage, which requires special management efforts to eliminate it.[328] A disaster is severe changes in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic or environmental effects that require immediate emergency response to satisfy critical human needs and that may require external support for recovery (IPCC).[329]

Disaster risk

The likelihood over a specified time period of severe alterations in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic, or environmental effects that require immediate emergency response to satisfy critical human needs and that may require external support for recovery (IPCC).[330]

Disaster risk reduction

The conceptual framework of elements considered with the possibilities to minimise vulnerabilities and disaster risks throughout a society, to avoid

[327] Federal law No. 116-03 of 21 July 1997 on industrial safety of hazardous industrial facilities.
[328] Petrova (2008) 'Natural hazards as pre-conditions ... ', p. 250.
[329] IPCC (2012) *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change*, Figure SPM1. Intergovernmental Panel on Climate Change, Field, C. B., Barros, V.. Stocker, T. F., Qin, D., Dokken, D. J., Ebi, K. L., Mastrandrea, M. D., Mach, K. J., Plattner, G.-K., Allen, S. K., Tignor, M. and Midgley, P. M. (eds.), Cambridge, UK and New York, Cambridge University Press.
[330] *Ibid.*

(prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development (UNISDR).

Disaster risk management

Processes for designing, implementing and evaluating strategies, policies and measures to improve the understanding of disaster risk, foster disaster risk reduction and transfer, and promote continuous improvement in disaster preparedness, response, and recovery practices, with the explicit purpose of increasing human security, well-being, quality of life, resilience, and sustainable development (IPCC).[331]

Emergency

Conditions within a particular territory which are the result of a failure, a dangerous natural phenomenon, a spontaneous accident or other disaster which may cause or has caused human victims, damage to human health or to the natural environment, and/or significant damage to property or livelihoods.[332] Emergencies in Russia can be classified by the sources that cause them as natural, man-made, military, biological and social. This includes infectious diseases of humans, farm animals and plants. Ecological disasters are a special type of emergencies.[333] In Russia emergencies are classified according to:[334]

1. number of people affected;
2. the extent of the damage to property; and
3. the surface area of the affected territory.

Emergencies are further divided into:[335]

a) **local** emergencies. The territory exposed to emergency, where people's life conditions are broken, does not extend beyond the territory of the facility, the number of people killed or injured being not more than 10 persons, or the amount of environmental damage and material losses (hereinafter – the amount of property damage) is not more than 100 000 roubles;

[331] *Ibid.*
[332] Federal law No. 68-03 (1994) 'On community and area protection against natural and technological disasters', 21 December.
[333] Russia Federation Government Decree No. 304 'On the classification of natural and man-made disasters, emergency situations of natural and man-made disasters', 21 May 2007.
[334] Government of Russia, Decree No. 1094, 13 September 1996, 'The classification of natural and technological emergencies'.
[335] MChS (2013) *Natural and Man-made Risk Assessment in the Russian Federation*, 14:3 Working together on Macro-Regional Risk, Saint Petersburg University of State Fire Service and Ministry of the Russian Federation for Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters.

b) **municipal** emergency. The emergency zone does not extend beyond the territory of a settlement or intra-city areas of a city of federal significance. The number of casualties is not more than 50 people killed or injured, or the amount of property damage is not more than 5 million roubles. And this emergency cannot be qualified as a local emergency;

c) **inter-municipal** emergency. The emergency zone covers the territory of two or more settlements, intra-city areas of a city of federal significance or inter-settlement territories, the number of casualties is not more than 50 people or the amount of property damage is not more than 5 million roubles;

d) **regional** emergency. The emergency zone does not extend beyond the territory of one subject of the Russian Federation, the number of casualties, killed or injured is over 50 but not more than 500 people, or the amount of property damage is more than 5 million roubles, but not more than 500 million roubles;

e) **inter-regional** emergency. The emergency zone covers the territory of two or more subjects of the Russian Federation, the number of casualties is over 50 but not more than 500 people, or the amount of property damage is more than 5 million roubles, but not more than 500 million roubles; and

f) **federal** emergency. The number of casualties, killed or injured is more than 500 people, or the amount of property damage is more than 500 million roubles.

Extreme events

These comprise a facet of climate variability under stable or changing climate conditions. They are defined as the occurrence of a value of a weather or climate variable above (or below) a threshold value near the upper (or lower) ends (‘tails’) of the range of observed values of the variable.[336]

Industrial safety

In the context of hazardous industrial facilities industrial safety means protecting the vital interests of an individual or society against accidents at hazardous industrial sites and against the consequences thereof.[337]

Mitigation

Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards (UNISDR). Disaster mitigation activities relate to environmental management, land use and urban planning and the engineering protection of critical facilities. The definitions

[336] *Ibid.*
[337] Federal law (1997) ‘On industrial safety of hazardous industrial facilities’, No. 116-03, 21 July.

of mitigation measures are different in the context of disaster risk reduction and climate change.[338] Mitigation, as defined by the UN International Strategy for Disaster Reduction (ISDR), means 'structural and non-structural measures undertaken to limit the adverse impact of natural disasters, environmental degradation and technological hazards'.[339]

Resilience

The ability of a system and its component parts to anticipate, absorb, accommodate or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration or improvement of its essential basic structures and functions (IPCC).[340]

Risk

Risk is the combination of the probability of an event and its negative consequences. The probability of harmful consequences, or expected loss of life, injury to persons, property, livelihoods, or disruption of economic activity (or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions (UNISDR).

Risk assessment

A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods and the environment on which they depend. The process of conducting a risk assessment is based on a review of both the technical features of hazards such as their location, intensity, frequency and probability, and also the analysis of the physical, social, economic and environmental dimensions of vulnerability and exposure, while taking particular account of the coping capabilities pertinent to the risk scenarios.[341]

State of emergency

A special legal regime for any subject of the Russian Federation which allows restrictions to be imposed on the rights and freedoms of citizens and organisations and which entails additional obligations.[342] According to Article 3 a state of emergency can be introduced only in circumstances which pose a direct threat to the lives and safety of citizens, or to the constitutional system, and which call for emergency measures, such as natural, technological or ecological emergencies,

[338] United Nations (2006) *On Better Terms – A Glance at Key Climate Change and Disaster Risk Reduction Concepts, A Product of the Working Group on Climate Change and Disaster Risk Reduction of the Inter-Agency Task Force on Disaster Reduction (IATF/DR*), United Nations, Geneva, Switzerland.
[339] *Ibid.*
[340] IPCC (2012) *Managing the Risks of Extreme Events and Disasters…* .
[341] United Nations (2006) *On Better Terms …* .
[342] Federal Constitutional law of 30 May 2001, Article 1, on the State of Emergency.

including epidemics and epizootic diseases resulting from accidents, hazardous natural phenomena, catastrophes and other natural disasters liable to cause death or injury to persons or damage to the environment, considerable damage to property or disruption to the vital activities of the population and which call for urgent relief operations. A state of emergency can be declared by a decree of the president of the Russian Federation and submitted to the Federal Assembly for approval.[343]

Technological disaster

A technological disaster is a disturbance of current activity of a populated region due to abrupt technological impact (catastrophe, accident, crash) resulting in social, economic and (or) ecological damage, which requires special management efforts for its elimination.

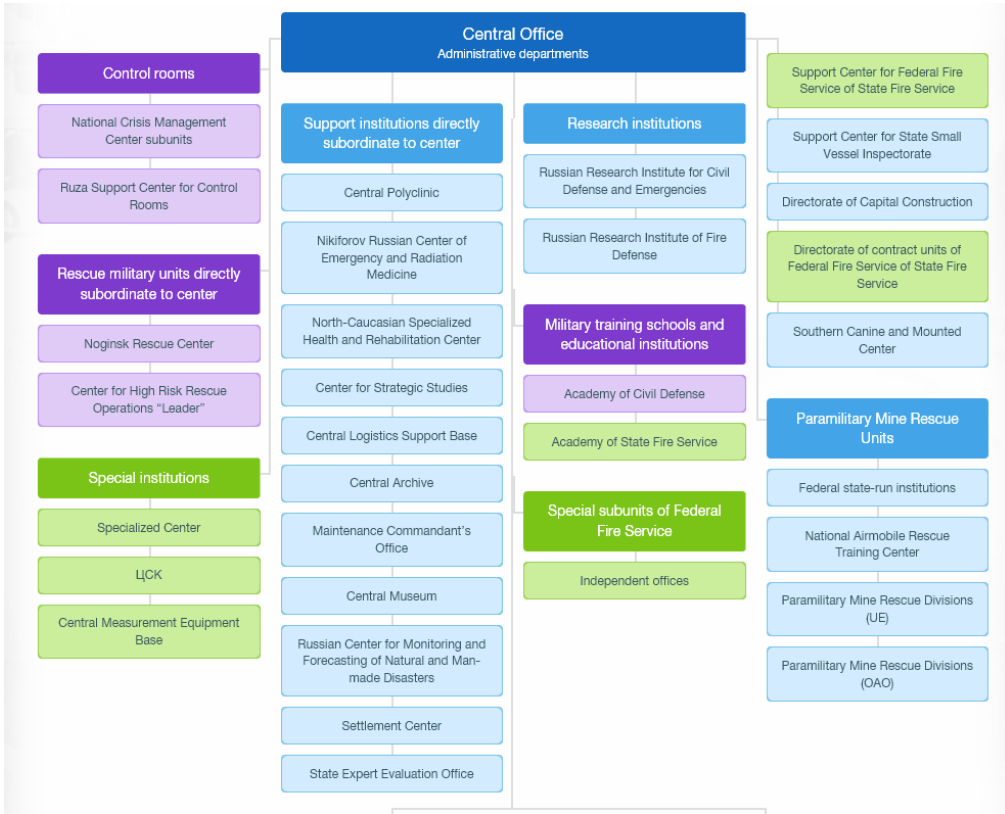
Vulnerability

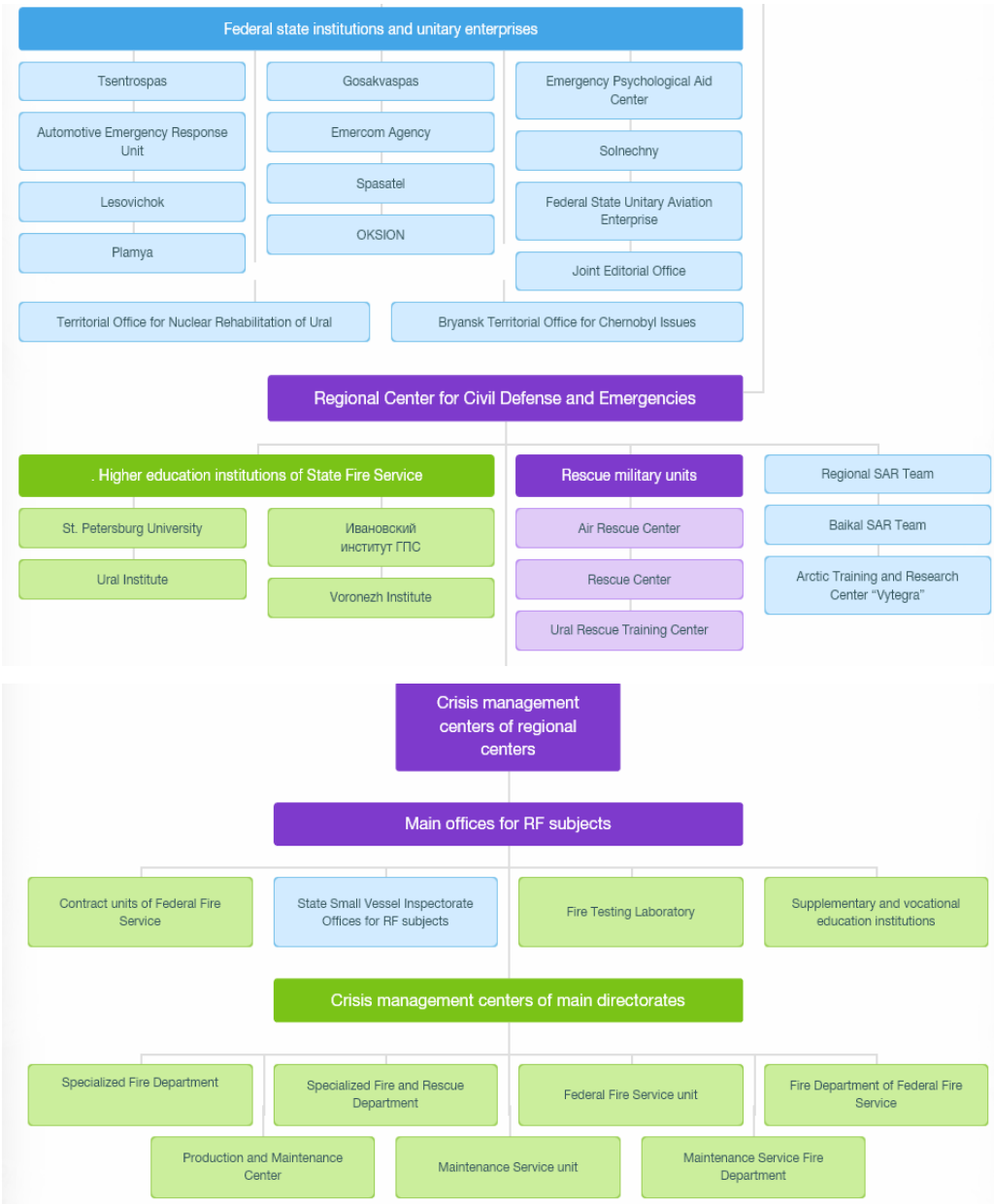
Vulnerability to climate change is the degree to which geophysical, biological and socio-economic systems are susceptible to, and unable to cope with, adverse impacts of climate change (IPCC).[344]

[343] AP/CAT (2005) *Comparative analysis of the Interministerial Management of Major Hazards*…, p. 77.
[344] *Ibid.*

Appendix 2

EMERCOM's organisation





Source: http://en.mchs.ru/ministry/Structure (accessed 2015-10-15)

Appendix 3

Tasks of the military rescue units (SVF) according to the EMERCOM website[345]

In peacetime:

- maintain the readiness of the SVF units and fulfil their assigned tasks,
- update the use of weapons, equipment and other material and technical means intended for use in the rescue and other emergency operations,
- participate in the activities for the prevention and elimination of emergency situations,
- participate in preparation of forces and means for the prevention and elimination of emergency situations, as well as provide public education in the field of civil defence, and
- participate in the research and development work on the creation, testing and introduction of new technical means for the protection of the population and territory, items of material and cultural value in emergencies, as well as on the development of means for rescue and other emergency operations.

In handling emergencies:

- conduct radiation, chemical and non-specific bacteriological (biological) detection/ intelligence in the areas of emergency,
- participate in rescue and emergency situations due to natural and technological disasters in Russia and in foreign countries with which the Russian Federation has agreements,
- participate in pyrotechnic works related to disposal of bombs and landmines, as well as in humanitarian demining,
- participate in the cleaning up and decontamination of personnel/citizens, buildings, structures, property and territories,
- participate in the delivery of goods to an emergency zone, including delivering humanitarian aid to foreign countries,

[345] MChS, Civil Defence Troops….

- participate in providing the affected population with food, water, basic necessities, other supplies and services, and dwellings for temporary residence, as well as providing first aid to the population affected,
- participate in the evacuation of items of material and cultural value from area of emergencies,
- participate in the work on the restoration of objects, and
- implement measures jointly with the other troops (forces) and resources of federal authorities for counter-terrorism.

In wartime:

- conduct radiation, chemical and non-specific bacteriological (biological) detection/ intelligence in the field of rescue and other emergency operations,
- provide input of civil defence in infected (contaminated) areas and flood catastrophe areas,
- participate in rescue and other emergency operations in infected (contaminated) areas and flood catastrophe areas,
- participate in pyrotechnic work related to disposal of bombs and landmines,
- participate in the cleaning up and decontamination of personnel/citizens, buildings, structures, property and territories,
- participate in the evacuation of items of material and cultural value in contaminated areas and areas with catastrophic flooding,
- participate in handling the consequences of the use of weapons of mass destruction,
- participate in the implementation of individual measures of territorial defence and ensure martial law regime, and
- participate in the restoration of objects.

Appendix 4

EMERCOM selected agencies and institutes

The Academy of Civil Defence of EMERCOM of Russia is a scientific centre for education and training of military and civil specialists, including foreign specialists, in the field of civil defence and prevention and elimination of emergencies, and for applied scientific research. Since 1995 the Academy has trained military specialists in the field of civil defence, prevention and protection against emergencies from CIS countries.

The Institute of Development of MChS, Institute of Specialized Training has faculties for engineering, training of foreign military and management staff.

The Federal State Institute All-Russian Research Institute on Problems of Civil Defence and Emergencies was founded in 1976 and its tasks cover civil defence, forecasting, and the prevention and elimination of natural and technological emergencies. Areas covered are technologies for space monitoring and decision support in crisis situations, salvage and rescue technologies, methods for the protection of populations and areas against emergencies, systems of communication, and warning and information technologies. Under the Institute there is a decision support centre for crisis situations, a centre for new technologies in risk management of natural disasters and technological disasters in agreement with the Council of Europe, and a CIS Agency on monitoring and forecasting of emergencies. There are branches of the Institute in St Petersburg, Rostov-on-Don, Yekaterinburg, Krasnoyarsk and Khabarovsk, and the Privolgsky regional department is in Nizhniy Novgorod.[346]

The Centre of Civil Defence Strategic Studies (CCDSS) was established for research into issues of strategic importance for the MChS's operations in the sphere of protection of the population and areas against natural disasters and technological disasters, civil defence and dangers arising from military activities. It develops strategies for the Unified Emergency Prevention and Response State System in Russia (RSChS) and identifies priorities in science and engineering of strategic interest for EMERCOM.[347]

Academies and institutes for the Firefighting Service

The State Academy of Fire Service (Moscow) is the main firefighting engineering facility in Russia with branches in Khabarovsk, Tyumen', Krasnoyarsk and Nizhniy Novgorod.[348] It and the **St Petersburg University State Institute of Fire**

[346] MChS, http://en.mchs.ru/document/224107 (accessed 2015-04-15).
[347] EMERCOM of Russia 15 Years 1990–2005, EMERCOM, leaflet.
[348] *Ibid*.

Service of the MChS provide professional and scientific specialised education up to doctoral level. The **Ivanovo State Institute of Fire Service of the MChS** provides education to bachelor and master's degree levels. In addition, the **Voronezh Fire-Technical Polytechnic and Fire College** gives specialised training to the polytechnic level. Russia also has several practical training centres, the best-known being the **Noginsk International Rescuers' Training Centre** near Moscow, which offers training, with Russian rescuers, for 'military, para-military and civil experts from the CIS and other foreign countries'.[349]

The Federal State Institute All-Russian Scientific Research Institute of Fire Defence (VNIIPO)

The Institute in Moscow was established in 1937 and is one of the world's largest centres for scientific developments in the area of fire safety and protection.[350] It is the main fire engineering research centre in Russia. The Institute participates in research and in implementation of state scientific and technological policy in the field of fire safety. It maintains extensive information on fire emergency situations, regularly analyses the information, and provides support for the implementation of management decisions. The **VNIIPO Extreme Situation Modelling Centre (Situation Centre)** provides information and expert support for management decisions for operations management agencies in responding to major fires and technological emergencies at critically important sites.[351]

EMERCOM-Demining is the centre for humanitarian demining and special blasting operations. Established in 2000, in 2003 it became a joint stock company. Operations are performed in accordance with International Mine Action Standards and the centre develops national standards in humanitarian demining.[352]

The State Small Vessels Inspectorate was established in 1984 for technical control of small boats including safety and boathouses in the internal waters and territorial sea of Russia.[353]

The State Establishment Centre of emergency psychological aid of MChS was established in 1999 and comprises specialists and departments at the regional centres of the MChS and at organisations, institutions, military installations,

[349] MChS (2013) *Natural and Man-made Risk Assessment in the Russian Federation…'*, pp. 53–57.
[350] EMERCOM of Russia 15 Years 1990–2005, EMERCOM, leaflet.
[351] Kopylov and Khasanov (2009) 'Use of Predictive Modeling Packages for Effective Emergency…', pp. 32–45.
[352] EMERCOM-Demining – Centre of Humanitarian Demining and Special Blasting Operations, http://www.emercom-d.com/en_about.htm (accessed 2013-03-08).
[353] MChS, 'State Small Vessels Inspectorate', http://en.mchs.ru/Forces_and_Facilities/State_Small_Boat_Inspectorate (accessed 2015-03-10).

search-and-rescue detachments and fire departments. They provide psychological aid to victims and their families.[354]

The Federal State Health Care Institute All-Russian Centre of Emergency and Radiation Medicine A. M. Nikiphorov (FGYZ VCERM), was established in 1997. Its main tasks are medical aid, monitoring of people suffering from accidents, catastrophes and natural disasters, determining the relationships between diseases and the consequences of accidents and catastrophes, conducting scientific research and implementing the results in clinical practice, training of medical staff and interacting with national, foreign and international organisations.[355]

The State Supervision Agency (SSA) performs inspections in such areas as fire safety, civil defence and emergency situations protection. Currently, more than 15 500 inspectors work to ensure the security of more than 2.3 million objects (buildings).[356]

[354] MChS, Centre of emergency psychological aid of the Russian Emergencies Ministry, http://en.mchs.ru/Forces_and_Facilities/Center_of_emergency_psychological_aid_of (accessed 2015-03-05).

[355] FGU 'All-Russian Center of emergency and radiation medicine named after A.M. Nikiphorov', http://en.mchs.ru/document/224110 (accessed 2015-04-02).

[356] Sharafutdinova, Elena, Avdeenko, Tatiana and Bakaev, Maxim (2014) 'Design and Implementation of the Integrated Information System for the Russian Ministry of Emergency Situations', 9th International Forum on Strategic Technology (IFOST), Cox's Bazar, Bangladesh, 21–23 October 2014, pp. 238–241, http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=6991112 (accessed 2015-04-02).

8 Appendix 5

Examples of major disasters in Russia

Volcanoes

There is significant volcanic activity on the Kamchatka Peninsula with 29 historically active volcanoes and dozens more in the Kuril Islands. Kliuchevskoi (elevation 4 835 m), which erupted in 2007 and 2010, is Kamchatka's most active volcano. The Avachinsky and Koryaksky volcanoes threaten the cities of Petropavlovsk-Kamchatskiy.[357] Two earthquakes occurred in 2006 – the first measuring 7.9 on the Richter scale and the second 6.2 – 70 km east of Tilitchiki in Kamchatka.[358] In June 2013 the Kamchatkan volcano Shiveluch emitted columns of hot volcanic ash and gas up to 9 km above sea level. Since May 2009 Shiveluch has been spewing ash periodically up to 3–10 km.[359] Other active volcanoes include Bezymianny, Chikurachki, Ebeko, Gorely, Grozny, Karymsky, Ketoi, Kronotsky, Ksudach, Medvezhia, Mutnovsky, Sarychev Peak, Tiatia, Tolbachik and Zheltovsky.[360]

Earthquakes

A large earthquake occurred in the Skovorodino district of the Amur River region on 14 October 2011 with a magnitude of 7 on the Richter scale.[361] The 2008 earthquake in Chechnya had a magnitude of 4.7 on the Richter scale, damaged roads, power supplies and communications across the Caucasus, and was felt as far away as Georgia and Armenia. It was centred 40 km east of Grozny.[362]

The Nevelsk earthquake (on Sakhalin Island) occurred on 2 August 2007 with a magnitude of 6.2 on the Richter scale. The first symptoms of the major seismic event were recognised as early as 1997.[363] Earthquakes of magnitudes 5.0 and 5.2 on the Richter scale in Kaliningrad on 21 September 2004 were unexpected. They

[357] *CIA World Factbook* (2015) 'Russia natural hazards …'.
[358] *AFP* (2006) 'Russian Fed.: Hundreds evacuated after Kamchatka quakes – report', *Agence France-Presse*, 22 April.
[359] Disaster Report (2013) 'Reports of recent natural disasters', News 24 hours a day, http://www.disaster-report.com/2013/02/natural-disasters-in-russia-2013.html.
[360] *CIA World Factbook* (2015) 'Russia natural hazards…'
[361] Khanchuk, A., Safonov, D., Radziminovich, Ya., Kovalenko, N., Konovalov, A., Shestakov, N., Bykov, V., Serov, M. and Sorokin, A. (2012) 'The largest recent earthquake in the Upper Amur region on October 14, 2011: First results of multidisciplinary study', *Doklady Earth Sciences*, Vol. 445, Issue 1 (July), pp. 916–919.
[362] BBC (2008) 'Deadly earthquake hits Chechnya', 11 October.
[363] Tikhonov, Ivan N. and Kim, Chun U (2010) 'Confirmed prediction of the 2 August 2007 MW 6.2 Nevelsk earthquake (Sakhalin Island) Russia', *Tectonophysics*, Vol. 485, Issue 1-4 (April), pp. 85–93.

caused moderate damage in the Kaliningrad exclave, and less damage in northern Poland and in southern and western Lithuania.[364]

Droughts

Large-scale droughts occurred in 1972, 1975, 1979, 1981, 1995, 1998 and 2002. The droughts of 1975 and 1981 were unprecedented since 1891. The total grain harvest in the country was about 23 per cent of the average.[365]

The air crash of the Yak-42 jet in September 2011 while carrying the Yaroslavl Lokomotiv ice hockey team – one of the leading teams in the Russian Hockey League – led to criticisms of Russian air safety. The aircraft crashed after take-off from Yaroslavl, killing 44 of the 45 on board (one crew member survived). Russian Transport Minister Igor Levitin revealed that 38 per cent of the 332 active airfields (most over 40 years old) in Russia still only have dirt runways, and the government planned to modernise 70 civilian airfields. The government has blamed crews and owners of aircraft for a series of serious accidents. It is well known that there are many too old aircraft flying in Russia, lacking modern safety equipment.[366] EMERCOM wants to equip all general aviation aircraft operated in Russia with satellite tracking systems to help search and rescue operations.[367]

Airbus A321 exploded in mid-air shortly after departure from Sharm el-Sheikh

EMERCOM sent 76 rescuers from Tsentrospas and Leader teams to the area. The A321 was operated by Kogalymavia, which works under the Metrojet brand. The aircraft collapsed at high altitude shortly after departure from Sharm el-Sheikh to St Petersburg. Fragments of the jet fell over an area of 20 square km. Experts (including British and US intelligence agencies) believe that the jet burst into flames in the air due to a bomb explosion. There were 217 passengers onboard (214 citizens of Russia, including 25 children) and seven crew. All died.[368]

[364] Gregersen, S., Wiejacz, P., Dębski, W., Domanski, B., Assinovskaya, B., Guterch, B.. Mäntyniemi, P., Nikulin, V.G., Pacesa, A., Puura, V., Aronov, A. G., Aronova, T. I., Grünthal, G., Husebye, E. S. and Sliaupa, S. (2007) 'The exceptional earthquakes in Kaliningrad district, Russia on September 21, 2004', *Physics of the Earth & Planetary Interiors*, Vol. 164, Issue 1/2 (September), pp. 63–74.

[365] Roshydromet (2008) *Assessment Report on Climate Change*... .

[366] Felgenhauer, Pavel (2011) 'High Profile Disasters in Russia: Transport Minister Retains His Post', *Eurasia Daily Monitor*, Vol. 8, Issue 174 (22 September), pp. 1–3.

[367] *Russian Aviation* (2015) 'EMERCOM wants to equip all the general aviation aircraft operated in Russia with satellite tracking systems', 23 March.

[368] MChS (2015) 'Vladimir Puchkov: Russian Emergencies Ministry carrying out search operation at plane crash site round the clock', 5 November; and *Russian Aviation* (2015) 'EMERCOM announced the first results of its work at the site of A321 crash', 5 November.

The meteor shower in Chelyabinsk

On 15 February 2013 a meteorite entered Earth's atmosphere over Russia.[369] The object exploded over Chelyabinsk Oblast at a height of about 23 km, generating a bright flash, small fragmentary meteorites and a powerful shock wave.[370] It was the largest airburst on Earth since the 1908 Tunguska event.[371] The estimated size of the object prior to its entering the atmosphere was estimated to be 17 metres [in diameter?] and the blast released hundreds of kilotonnes of energy with a mass of around 7 000 metric tonnes.[372] About 1 500 people were injured, two seriously. All of the injuries were due to indirect effects rather than the meteorite itself, mainly from broken glass from windows that were blown in when the shock wave hit. Some 7 200 buildings in six cities across the region were reported to have been damaged by the explosion. It is the only meteorite known to have resulted in a large number of injuries.[373] The cost of the damage from the meteorite fall has already exceeded 1 billion roubles.[374] Because of the large military industry presence in the area, police set up special surveillance and protection, and enacted plan 'Fortress'.[375] Overall 24 127 people and 4 327 units of equipment were used in dealing with the consequences, including 18 787 people and 3 563 units of equipment of EMERCOM.[376]

Mysterious craters are formed in Siberia

These are believed to be caused by methane gas eruptions in melting permafrost areas. One crater is close to a major gas production plant and it could be a disaster

[369] Yeomans, Don and Chodas, Paul (2013) 'Additional Details on the Large Fireball Event over Russia on Feb. 15, 2013', NASA/JPL Near-Earth Object Program Office, 1 March, http://neo.jpl.nasa.gov/news/fireball_130301.html (accessed 2015-09-02); and *Associated Press* (2013) '100 injured by meteorite falls in Russian Urals', 15 February.

[370] Kolesnikova, Lina and Hough, Emily (2013) 'Chelyabinsk meteorite strike', *Crisis Response*, Vol. 9, Issue 1, pp. 12–13, http://www.academia.edu/6366849/CRISIS_RESPONSE (accessed 2015-09-02).

[371] Popova, Olga P. et al. (2013) 'Chelyabinsk Airburst, Damage Assessment, Meteorite Recovery, and Characterization', *Science*, 342, p. 1069.

[372] *Nature* (2015) 'Russian meteor largest in a century Explosion rivalled nuclear blast, but rock was still too small for advance-warning networks to spot', 15 February 2013.

[373] Wikipedia (2015) Chelyabinsk meteor, http://en.wikipedia.org/wiki/Chelyabinsk_meteor (accessed 2015-10-12).

[374] Russian Radio (2013) 'The Ministry of Emergency Situations (Emercom) of the Russian Federation could not find traces of meteorite in Chebarkul Lake in the Urals', 16 February.

[375] Kolesnikova and Hough (2013) 'Chelyabinsk meteorite strike ….'.

[376] APEC (2013) 'Elimination of Consequences of Meteorite Crash in Chelyabinsk Region', Information submitted by Russia, 7th Senior Disaster Management Officials Forum, Bali, Indonesia, 21–22 August, Asia-Pacific Economic Cooperation, http://www.apec epwg.org/public/uploadfile/act/13_epwg_sdmof_022.pdf (accessed 2015-10-05); and Kartashova, Anna et al. (2013) 'A field study of the Chelyabinsk airburst event', Proceedings of the IMC, Poznan, pp. 1–5, https://www.researchgate.net/publication/266265723_A_field_study_of_the_Chelyabinsk_airburst_event (accessed 2015-10-05).

waiting to happen. Scientists are still not sure what caused the craters and there are seven craters in the Arctic area.[377]

The Sayano-Shushenskaya hydroelectric power plant explosion 2009

The August 2009 generator explosion at the Sayano-Shushenskaya dam in the Yenisey River in Russia caused flooding of a machine room that killed 75 workers. The station was operating in spite of known problems, with one faulty generator.[378] The whole eastern Siberian electricity network almost collapsed.[379] Poor management and technical flaws were the basic cause of the accident.[380] The parliamentary commission investigating the accident identified as irresponsible 19 of the facility's management personnel, including the director and chief engineer.[381]

[377] TIS Forum (2015) 'Natural Disaster Looms for Russia as Mystery Craters Appear', 26 February, http://truthisscary.com/2015/02/natural-disaster-looms-for-russia-as-mystery-craters-appear/ (accessed 2015-08-10).
[378] Antonova, Maria (2009) 'Dam Disaster', *Russian Life*, Vol. 52, Issue 6 (November/December), pp. 7–8.
[379] Pynnöniemi and Busygina (2013) 'Critical infrastructure protection…', p. 3.
[380] Hasler, Joy P. (2010) 'What Went Wrong: Disaster on the Yenisei', *Popular Mechanics*, Vol. 187, Issue 2 (February), pp. 47–79.
[381] *Current Digest of the Post-Soviet Press* (2009) 'Accidents/Disasters', Vol. 61, No. 51/52 (21 December), pp. 13–14.

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Russia has regularly experienced major natural disasters and they are becoming more frequent. This is one reason why it is of interest to better understand how Russia's system for disaster management and the EMERCOM are organised, have developed and manages severe emergency situations. In a relatively short time, Sergei Shoigu transformed a volunteer search and rescue team into a ministry. The EMERCOM is an impressive organisation with vast resources in personnel (including with military personnel), equipment and means of land, air and water transport.

A general overview is given of natural disasters in Russia followed by a more detailed description of the widespread forest fires in 2010 and the floods in 2012–2014. This is done to analyse how EMERCOM and the Government managed these and how efficient the Russian governance system is in an emergency situation. Major disasters will challenge the political leadership and its credibility if disasters are not prevented or the response is not handled in an efficient manner.

The report establishes that there are clear weaknesses in the Russian governance system for managing serious emergencies. Officials at subordinate levels are reluctant to make independent decisions for fear of being blamed by the federal authorities and will sometimes wait until they are ordered to act by higher central levels. In addition officials do not always report how serious the situation really is so as not to be blamed. This is of course very negative for handling an emergency when rapid decisions are needed to allocate resources due to how the crisis is developing in the affected area. Another aspect is that leaders initially try to deny that there is a crisis and claim that everything is under control. Those tasked with managing the crisis are, in other words, well aware of the 'blame game' after the event where leaders identify 'scapegoats', and act accordingly.

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