

Extremely cold winter, followed by an unusually hot summer, challenged Russian authorities this year, says **Lina Kolesnikova**, who looks at the effects of the extreme heat on Moscow and its surrounding areas

Moscow heat wave disaster

ACCORDING TO THE HEAD OF THE Russian Weather Forecasting Bureau, Alexis Lyakhov, this summer was the hottest for at least 130 years.

In July 2010, the average temperature in the European part of Russia was eight degrees Celsius higher than usual for this time of the year and in August, it was 5.4°C higher. The average temperature in July–August was 38°C.

Abnormally hot weather left the Russian capital tense for nearly two full months. Drought was also a problem. In the Moscow area there was only 15 to 20 per cent of normal precipitation; in Moscow itself, only 25 per cent. The situation was further complicated by strong winds.

The heat created a gloomy situation in the highly populated city. Muscovites consumed 200,000 to 280,000 m³ of water more than usual. Water in the ‘cold’ pipe was about 26°C and could have been a factor in the spread of infection. The emergency ambulance service reported around 11,000 calls per day; the average is around 7,500. The media indicated a mortality increase of 50 to 60 per cent in Moscow; the authorities confirmed an increase of 50.7 per cent in July 2010 (compared to July 2009). They also noted a slight increase in neonatal deaths.

Sales of individual protection items sky-rocketed. For example, more than two million individual gas masks were sold in Moscow alone. This number would have been even higher, but for shortages in the distribution chains.

A ring of burning forests and peat bogs in the Moscow area led to thick smog, which enveloped the capital at the beginning of August and, along with smoke and an acrid smell of burning, made the environment in this already polluted capital catastrophic for its inhabitants.

The concentration of hazardous substances in the air increased more than fivefold. The smoke provoked coughs, shortness of breath, nausea, vomiting and watering eyes. Many Muscovites complained about increasing insomnia, depression and psychological irritability. Home-made protective masks were useless.



The road situation also deteriorated, complicated by the lack of visibility, which was reduced to 40 – 50 metres at times. This led to such huge traffic jams that on some days, international and national airports had to cancel or delay most flights. Dealing with hundreds of stranded people who had been trying to

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get away for the summer with their children was a tough situation for airport personnel.

Smoke also penetrated buildings and underground stations. At some metro stations, passengers could not see trains approaching the platforms. Air conditioning systems could not cope with the smell of burning, and this led to respiratory difficulties in many places – even in hospital operating theatres.

Unfortunately, the authorities did not respond to this smog situation effectively, particularly with regards to information dissemination and safety guidance. There was no proper explanation of how to avoid carbon monoxide poisoning; pharmacies quickly sold out of the relevant medical equipment for people with special needs, such as oxygen pillows. For a long time, there was no provision of evacuation measures for vulnerable groups of the population, such as pregnant women, people with respiratory or heart disease, etc.

In July and August the European part of Russia struggled with forest, bush and peat bog fires. More than 50 people died

and more than 2,500 houses were burned, leaving at least 3,500 people homeless.

According to information from EMERCOM of Russia, at the end of July, there were 575 forest fires covering the area of 53,416 hectares. The alarming statistics showed dangerous dynamics in the appearance of new fires compared with past experience – up to 400 new fires in a day.

An estimated 166,000 people (professionals and volunteers) and more than 25,000 vehicles, including about 40 aircraft and helicopters, were involved in the firefighting efforts. Federal operational control was linked to more than 500 local operational control groups operating in carefully selected – and typically the most risky – areas. Fourteen countries provided assistance with manpower and equipment. The production of backpack fire extinguishers was quickly organised; 7,000 were produced in a short period of time in July–August.

September is not an easy month for EMERCOM either. Some other Russian regions – for example, Sakhalin and Transbaikalia – also experienced unusually extreme fires. Both regions are characterised by difficult access. Blazes from neighbouring Kazakhstan were fanned by winds and spread to the Altai region; it took a joint response from EMERCOM of Russia and Kazakhstan to bring the fire under control. Six people were killed and hundreds of villagers had to be evacuated in Kazakhstan, while more than 1,000 people were left homeless on the Russian side of the border.

Experts believe that it will only become possible to cope with all the wildfires by the beginning of November, with assistance of continuous snowfall

Despite some critics, the Minister of EMERCOM of Russia praised firefighters and their work during the emergency period: more than 4,500 towns and villages with a total population of over half a million people were saved thanks to the co-ordinated efforts of this agency.

So far, there are no exact numbers for the material damage and the impact on the country's budget resulting from the 2010 summer heat wave, wildfires and smog.

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EMERCOM of Russia was left with more than 2,700 damaged vehicles and over 250 kilometres of hose was damaged beyond repair.

The agricultural sector was badly affected – as much as 30 per cent of the harvest could be lost to fires, abnormal heat and drought. As a result, Russia introduced a ban on exports of cereals effective from mid-August.

Independent experts believe that the total damage could be as high as US\$300 billion (approximately €228.5 billion). In all cases, the consequences of this summer disaster will be felt for many years.

LOCAL RESPONSE

Prior to adoption of the *New Forest Code* few years ago, firefighting came under Federal supervision. But now, according to the *New Forest Code*, all firefighting activities are delegated to the regional authorities. Many experts pointed out their lack of necessary professional experience and expertise, saying that the lack of special equipment played crucial role in delivering the rather weak local response in many regions affected by wildland fires.

In some areas, the situation was even worse. Contracts for firefighting (for example, in forests) were signed with organisations that were insufficiently prepared and had little success in fighting the fires because they had little or no experience in this area. There were, however, examples of varying levels of preparedness – the Republic of Tatarstan achieved a high degree of control over the fires, with almost all of these being extinguished on the day of registration.

The Minister of EMERCOM of Russia, Sergey Shoygu (*CRJ* 6:1) admitted that 24,000 residential areas are located out of the reach of EMERCOM's firefighting services. For these villages, the local population had to organise volunteer firefighting crews. EMERCOM of Russia has prepared a programme and is currently delivering training to these crews.

But it is not just insufficient preparedness on the part of the operational teams that played a role. Just before the summer, more than 500 forest wardens lost their jobs, despite the weather forecast suggesting a very dry summer for this region.

The lack of preparedness and ability to deal with fires by decision-makers at regional and local levels was another major weakness. In order to deal with this problem, Sergey

Shoygu believes it is vital to force all mayors and governors to pass an exam on crisis and disaster management before their inauguration.

EMERCOM decided to develop a new 3-D training simulator, to help train firefighters to deal with three-dimensional fires. At the same time it will continue to work with the public, especially children, teaching citizens how to behave in emergency situations.

According to public opinion polls, Russian citizens rated authorities with a score of three out of five on how they responded to the summer disasters – heat wave, wildfires and smog. Most of the population thinks that people are to blame for wildfires, not nature.

Some blame the low environmental awareness culture of the Russian population (for example, persisting in having picnics in

non-authorised areas), corruption of local authorities and the timber industry Mafia as being the main underlying causes of this summer's catastrophes. **CRJ**

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