

## 2. WILDFIRES IN RUSSIA

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### INTRODUCTION

In 2010 Russia experienced the hottest and driest summer on record. Fast-spreading wildfires in July and August devastated forests and crops, destroyed dozens of villages and surrounding infrastructure, killing 62 people. As over 3,000 rural households were destroyed, thousands of people were forced to seek temporary refuge. Important efforts were undertaken by the government and civil society to contain the fires and assist the victims. This case study provides an analysis of the emergency response to the disaster and compensation and reparation policies in Russia, with a particular focus on the displacement and resettlement of the affected population.

### 1. CONTEXT OF THE DISASTER

#### 1.1. Historical and socio-economic context

Since the disintegration of the USSR in 1991, the Russian Federation experienced various political, institutional, economic and legal reforms. Yet, the federal government has considerable power, and the responsibility over regional matters is shared between the federal bodies (responsible for general policy and decision-making) and the regional administrations (policy adaptation and implementation).

Since the 1990s, Russia has faced a demographic crisis as low birth rates, low life expectancy, and high mortality rates contributed to a fast population decline (-4.25% from 1991 to 2006; Demographic Research Institute, 2011), only slightly mitigated by return and labour immigration from CIS (Commonwealth of Independent States) countries. The situation, however, started improving in

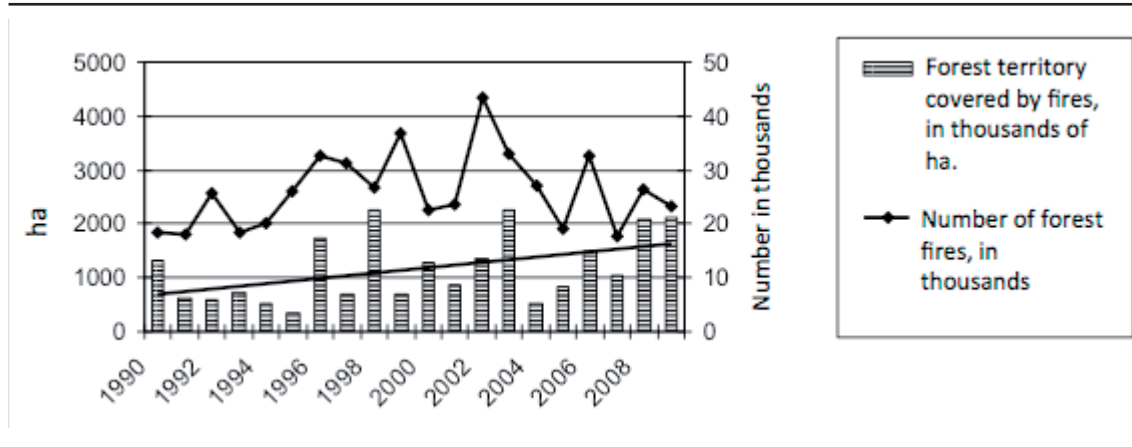
the mid-2000s, and increasing immigration and decreasing natural decline led to an increase of the population by 10,500 thousand people in 2009, the first increase since 1994.

Internal migration accounts for 85% of total migration flows in Russia. On average, 1.9 million people migrate within the country every year (1,910,648 people in 2010, Federal State Statistical Service, 2010b). Federal Law of the Russian Federation N5242-1 (1993) provides a legal basis for internal migration and guarantees freedom of movement and choice of residence within the country for Russian citizens. Among these internal migrants, a majority (55%) migrate within the same federal subject<sup>4</sup>. Main internal migration flows are directed from Northern and Eastern parts of the country (particularly, the Far Eastern federal district) towards the west (Central federal district). Thus, Russia's population is unevenly distributed and concentrated in cities located mostly in the European parts of the country (the Central and Volga federal districts account for 48% of the population; Federal State Statistical Service, 2010b), whose better economic opportunities continue to attract both international and internal migrants. Moscow and the Moscow region attract 93% of internal migrants.

Large areas of the country remain sparsely populated, and rural areas suffer from depopulation: nearly 100,000 people left rural Russia in 2010, mostly young people (14-29 years of age). Rural Russians, who account for 27% of the national total (Federal State Statistical Service, 2010b), often suffer from poor living conditions, limited infrastructure and social services. Nearly half (47%) of

4. The Russian Federation consists of 83 federal subjects, which are administrative units enjoying different levels of autonomy but an equal representation in the Upper House of the Parliament (two delegates for each federal subject).

**Figure 1.** Government statistics on forest fires 1990-2010



Source: Blokov, 2010.

the rural population is older than 40, and about 14% is older than 65, which points at another demographic and social problem, as many elderly people live alone in harsh conditions in the countryside (Federal State Statistical Service, 2010b)

Considering existing demographic and socio-economic problems, the government is currently working on the design of a new framework for the national migration policy for the 2012-2025 period, following the 2002 Presidential Decree, ‘On the improvement of the management of the migration policy’. The project is aimed at harmonizing existing federal and regional legislation and addressing existing gaps in the legislation and the rights of the migrants, to facilitate and optimize migration flows and encourage economic modernization and development in the country. The draft document was to be examined in 2011 by the State Commission for migration policy (Federal Migration Service, 2011). In addition, a Framework for the demographic policy of the Russian Federation until 2025 (Presidential Decree N1351, 2007) contains specific clauses concerning support to the improvement of living conditions and infrastructure in difficult and less developed regions that currently suffer from migration outflows, as well as support to the relocation of people from regions with harsh environment and climatic conditions. Currently, a federal programme ‘Zhilishe’ (‘Housing’; Presidential Decree 675, 2002) is being implemented to improve the living conditions and housing of the population. It includes initiatives to relocate people to better housing, and to provide new accommodation to displaced people, including those displaced by nuclear accidents and disasters. Additionally, a special programme is being implemented to close some old and isolated settlements in the Far Northern areas, with subsidies provided to

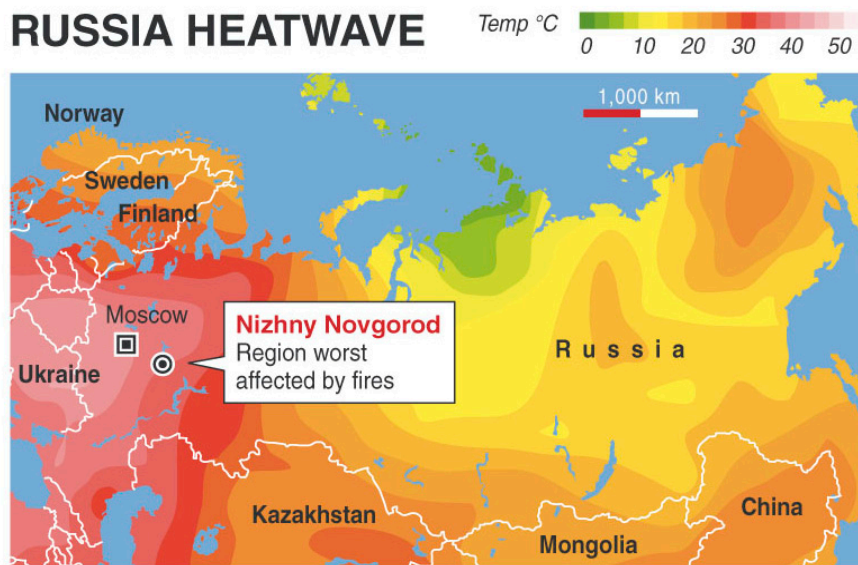
the residents to help them obtain housing in other towns or regions (Federal Law N 211).

## 1.2. Geographical location and environmental characteristics

With an area of 17 million square kilometres, Russia occupies most of Northern Eurasia and is largely covered with biodiversity-rich, little-disturbed ecosystems, many of which are listed as globally significant by the World Wildlife Federation (WWF, 2010). Russia’s forests cover an approximate area of 780 million hectares, representing 22% of the world’s forest resources, and play an important role in the national and local economy (WWF, 2011, Global Forest Watch, 2011).

Wildfires present a major challenge with significant environmental and economic impacts that the Russian government has to confront on a yearly basis. Between 15,000 and 50,000 wildfires are recorded in the country every year, covering from 2 to 17 million hectares and destroying several hundreds of thousands hectares of forest and wood.

These figures vary greatly among regional and governmental agencies, ministries and research institutes, and from year to year, but there is a general acknowledgement of the fact that the total area covered by wildfires has increased over the last decade. According to the Russian Federal Forest Agency (Rosleskhoz, 2011), 90% of forest fires occur as a result of human activity, such as breach of fire safety regulations, negligence, as well as poorly controlled agricultural burning of land (a practice inherited from the Soviet times and still widely used accounts for 10% of wildfires). Natural causes, such as lightning, account for only 10% of forest fires. Peat from swamps that were drained

**Map 1.** Temperatures in Russia during heat wave in August 2010

Source: Reuters.

during the Soviet times constitutes another major fire hazard. Heat and low levels of humidity result in underground peat fires, which are harder and costlier to fight, and can have highly destructive ecological consequences and damage to human infrastructure. Most fires usually burn in vast, scarcely populated areas in Northern Siberia and the Far Eastern region, where fire-fighting efforts are limited because of difficulties of access, high costs and the near-absence of threat to the population. Wildfires that occur in more densely populated areas are generally contained effectively.

## 2. THE DISASTER

An unprecedented heat wave hit Russia in the summer of 2010. Several temperature records were set in the European part of the country. Throughout the entire month of July, Moscow experienced the hottest temperatures recorded in more than 130 years, topping 35 degrees Celsius. The west of the country suffered from its worst drought in decades, destroying crops, raising concerns about food security and economic growth in Russia, and forcing the government to impose a ban on grain exports, which markedly reduced world wheat supplies. Extremely hot and dry weather conditions resulted in intense and fast-spreading forest and peat fires as dry trees and peat caught fire easily. 19 federal subjects of the Russian Federation were affected by wildfires, mainly in the Western and Central parts of the country.

Some spring fires had already occurred in April and May, but regional authorities and the ministries in charge of forest protection claimed that the situation was under control by the beginning of the summer. Serious public, media and government concerns were only raised with the intensification of fires starting on July 29, when several villages were destroyed in the Nizhny Novgorod region within minutes. On July 31, the head of the Russian Ministry for Civil Defence, Emergencies and Disaster Relief (EMERCOM) admitted that the situation was 'complicated', and 30 people were reported to have died (Ministry for Civil Defense website, 2011). On August 2, the President of the Russian Federation, Dmitry Medvedev declared a state of emergency in seven regions, including Vladimir, Voronezh, Moscow, Nizhny Novgorod, Ryazan oblasts, and the republics of Mordovia and Mari El. Despite important efforts mobilised in the following days, new outbreaks of fire continued, and the death toll reached 50 by August 6. Starting August 12, the situation improved, and President Medvedev announced on August 20 that the crisis had been overcome. The fires were significantly reduced by the end of August, but were followed by a short new destructive wave of fires in the Volgograd region on September 2 and in the Altai territory (South Siberia) on September 8. Wildfires were almost completely extinguished by mid-September thanks to the efforts of professional fire fighters and volunteers. Some fires remained in the Far Eastern region and were put out by the third week of October (Ria Novosti News Service, 2010b).

According to the official figures of the Federal Forest Agency published in a report in February 2011, 32,000 wildfires occurred between the end of July and August 2010, covering a total area of 2.1 million hectares, and destroying 193,200 hectares of forest (Russia Federal Forest Agency, 2011). At the same time, by the end of August, independent Russian research institutes of the Russian Academy of Science had identified fires covering a total area of nearly 6 million hectares using advanced satellite technologies, while according to the Global Fire Monitoring Center wildfires had burned over 10-12 million hectares (Yabloko Report, 2010). Up to 400 new wildfires (200 on average) were recorded daily at the peak of the fire season from the end of July to mid-August.

The scale of the fires in the summer of 2010 was unprecedented and resulted in many casualties and material damage. According to official figures of the Ministry of Regional Development stated in October 2010, 199 settlements were entirely or partly burnt down and 3,180 houses destroyed. 62 people died in the fires, including 3 fire fighters. A total of 3,591 families were left homeless. Altogether, 7,237 people were affected, including 3,340 elderly people and 740 children (Ministry of Regional Development Report, 2010). Several industrial and military facilities were destroyed in the fires. A cloud of smoke stretched over 3,000 kilometres, enveloping several highly populated urban centres, including the capital, for several days. Pollutants, particularly carbon monoxide, were measured at two to three times maximum permission concentration levels, aggravating health problems. According to a report of the Ministry of Economic Development (BBC Russian, 2010), the heat wave in Russia increased the mortality rate five times, with 56,000 deaths more compared to the summer of 2009. According to Rosstat, the biggest increase in the mortality rate was recorded in the regions that were most affected by the fires, including Moscow region, Samara, Saratov, Ulyanovsk and Voronezh oblasts. Some residents of large cities, including Moscow, fled from the smog and heat and temporarily sought refuge in less affected regions – some went to their country houses, or to summer resorts in Russia or abroad (Interfax, 2010). Exact nationwide figures of voluntary and forced displacement caused by the fires and smog are not available.

Wildfires reached radiation-contaminated areas in the Bryansk region (close to Chernobyl), and got dangerously close to a nuclear research facility in the Nizhny Novgorod region and a nuclear fuel reprocessing facility in Chelyabinsk Oblast. The release of radioactive material into the atmosphere

was feared, however no increase in radiation levels was detected in the region. (BBC Russia, 2010b).

The fires had a significant environmental impact as they reached natural protected areas, and destroyed some pristine forests, ecosystems and rare species of fauna. It is also estimated that the carbon emissions generated by the wildfires in 2010 amounted to 18% of Russia's annual GHG emissions, raising concerns about their current and future impact on the global climate and temperatures in the Arctic (Ria Novosti News Service, 2010b).

### 3. RESPONSE

Three main phases can be distinguished in the area of disaster management. The first concerns prevention and preparedness – design and implementation of safety standards, elaboration of emergency plans, dissemination of information. The second level is immediate emergency response in the case of disaster (informing the public, evacuating the population, providing first aid, fire fighting). The third level comprises long-term reparations, compensation, and restoration of adequate living conditions and means.

#### 3.1. Legal framework for disaster management

The rights of Russian citizens in disasters are little elaborated and not detailed, and legislation pertaining to ecological disasters focuses mainly on preventive and safety measures, and responsibility for technological hazards and the liquidation of their consequences.

The responsibility to protect civilians, prevent disasters and manage their consequences is regulated by internal legislation in the Russian Federation, and is based mainly on two Federal Laws: Federal Law N68, dated 1994/12/21, 'On the protection of the population and territories from natural and technological hazards', and Federal Law N28, dated 1998/02/12, 'On civil defence'.

The two Federal Laws set out the general responsibilities and duties at different administrative levels (federal, regional and local), as well as the legal rights of civilians, and are complemented by additional regulations and guidelines at the federal and local levels. The general legal rights from which civilians benefit are stated in article 18 of the Federal Law 'On the protection of the population and territories from natural and technological hazards', and include the right for protection of lives, health and property by regional and local authorities in case of disaster, right for information, compensation and allowances, medical assistance,



and free social insurance. Meanwhile, the Federal Law 'On civil defence' provides the basis for the conduction of evacuation of the citizens in case of war or disaster, and assigns this responsibility to local governments.

Forest fire prevention responsibilities are set out in the Forest Code of the Russian Federation that came into force in January 2007 (Federal Law N 200-FZ, 2006). The new code decentralised the control over forest resources, and assigned the responsibility to prevent forest fires to private tenants and local authorities. At the same time, the staff of the forest fire fighting force was significantly reduced, the forest fire fighting air force 'Avialesokhrana' dismantled, and the task of fire fighting distributed between various smaller public and private companies.

The concrete implementation of regulations pertaining to disaster management falls on regional and local authorities (although according to Federal Law 'On the protection of the population and territories from natural and technological hazards', article 19, citizens also have some duties in disaster prevention and relief). However, as it became apparent that the regional governments failed to deal efficiently with the 2010 wildfire crisis, the federal government took over the management of the disaster on July 30, and the disaster management responsibilities were divided between various ministries and overseen by the Prime Minister and the President. The Ministry for Civil Defence, Emergencies and Disaster Relief, which is usually responsible for emergency response in disaster situations that threaten people's lives, took over fire fighting activities, and mobilised more than 160,000 people in fire fighting operations (including several thousands volunteers), whose efforts throughout the summer and autumn helped put out the wildfires.

### 3.2. Evacuation and emergency response

Responsibilities for civil defence in Russian legislation include the provision of information to the population, the evacuation of the population and valuables to safe areas, the provision of shelter and of means of self-defence, and the provision of services, including medical assistance, first aid and accommodation. In theory, every administrative unit should have standard emergency plans for the evacuation of civilians in case of war or natural or technological disaster, as stipulated in the Federal Law 'On civil defence' (1998). Regional and municipal governments are expected to prepare and train the population, possess all necessary equipment and medical supplies, and organise and conduct evacuations.

The Ministry for Civil Defence, Emergencies and Disaster Relief (EMERCOM) and the Ministry of Interior and the Defence Ministry provide troops to assist with evacuation, guarantee the safety of people, and maintain order. Existing guidelines, such as those issued by the All-Russian Scientific Research Institute for Civil Defence and Emergency Situations, describe the standard procedures for the management of evacuations, including the creation of special evacuation committees and units at designated points of departure and arrival, the specific duties of each actor involved, and the provision of transport, shelter and medical support.

The wildfires in 2010 demonstrated that not all municipalities were prepared for emergency situations. The residents of the rural settlements were usually informed about the necessity of evacuating by units of the EMERCOM or by the police that patrolled in the region. Evacuation was not always assisted, and the people were expected to leave their settlements on their own means. However, later on, buses were provided by the authorities for those who did not have their own transport. Some people refused to leave their villages, for fear of looting. Many elderly people died in their burning houses, as they had nowhere to go and were not ready to leave their homes (Argumenty i Fakty, 2010, Ria Novosti News Service, 2010b; Moscow Komsomolets, 2010). Some rural settlements were difficult to access because of poor infrastructure, which made evacuation difficult or sometimes impossible. A prisoner camp in the Republic of Mordovia could not be evacuated as the single railroad that connected it to nearby settlements had been dismantled in 2006 (Gazeta News Service, 2010a).

There are few available official statistics concerning the temporary resettlement of the victims and evacuees (it is unclear whether the evacuees were registered in the temporary camps), and most information comes from individual testimonies and investigative journalism. It appears that the provision of temporary shelter varied qualitatively and quantitatively across the regions. Many victims of the fires who lost their houses initially went to live with friends and relatives. Others were relocated to nearby settlements, where temporary shelter was set up in schools, sanatoria, hospitals and nursing homes. Residents of the village of Mokhovoe that burned down in the Moscow region on July 31 were relocated to a nearby Army barracks. In the Volgograd region, temporary resettlement camps were set up, offering three hot meals a day, medical and psychological care, as well as help with the recovery of lost documents and identification papers (Russia Region Press, 2010). In the Altai region,

60 people were temporarily accommodated in a local hospital, and some elderly people 'agreed to temporarily stay in nursing homes' (Russian Red Cross, 2010). Many citizens temporarily offered rooms in their apartments and houses to the victims – their offers were posted on the Ministry of Regional Development's website. Many displaced people were able to move into their new houses by the end of October, and the majority had moved by the end of November, although as reported by some journalists, some people who did not qualify for new housing had to stay in their temporary shelter, often unfit for the region's harsh winter climate. It appears that the victims were not always satisfied with the way evacuations were conducted. Some complained about the lack of assistance, others about the fact that they were kept in the temporary shelters with little available information, and could not return home for lack of transport. Some reported insulting treatment by government officials (Rosbalt News Agency, 2010).

Medical assistance was provided by the Ministry of Healthcare and Social Development and the EMERCOM. According to the Ministry of Healthcare and Social Development's website, 1,652 victims of wildfires received free medical assistance in August and September: the majority received outpatient assistance, and about 140 were hospitalised (Ministry of Health and Social Development, 2010 and Ministry of Regional Development, 2010a). Special medical units were created to provide medical assistance to fire fighters. A medical train circulated in the regions affected by the wildfires carrying doctors to assist victims, volunteers and fire fighters.

Other services made available to the victims included social and psychological support, as well as assistance with administrative matters. Education services were provided from September for all temporarily resettled children, either through the organisation of classes in the places of temporary accommodation, or via the provision of transport to local schools.

### 3.3. Compensations, reparations and costs

According to article 18 para. 1 of the Federal Law 'On the protection of the population and territories from natural and technological hazards', all citizens are entitled to compensation for lost property in the event of natural disaster. The actual amounts of compensation and allowances are, according to the same article, para. 2, 'to be defined by the legislation of the Russian Federation and the legislation of the [federal] subjects of the Russian Federation'. In practice, however,

the insurance and compensation policies proved inefficient (Kremlin stenographic report, 2010). As highlighted by President Medvedev at a meeting on October 13, only 16% of the houses that burned down were insured. The amount of compensation for wildfires in 2010 had to be determined on an ad-hoc basis by the ministries and local governments. Every person qualifying for compensation received 10,000 Rubles (roughly 330 USD or 240 Euros) soon after the fires, enough to cover initial expenses (clothes, sheets, food). Retired people received an additional 25,000 Rubles. In addition, early in August, the government promised 200,000 Rubles to each victim for the loss of personal goods (paid jointly from the federal and regional budgets), and families of the deceased received 1 million Rubles. Those who lost their houses were entitled to either a financial compensation up to 2 million Rubles, accommodation in existing houses, or a new house built by the government. According to the statistics of the Ministry of Regional Development, most of the families (2,202) opted for new houses, while 1,061 families opted for monetary compensation, the amount of which was based on the cost of the property lost, calculated on average real-estate prices in the region concerned. Only 139 families chose to move to existing houses in other towns (Kremlin stenographic report, 2010). Although precise figures are not available, media reports suggest that some were helped by the government, but it is probable that many chose their new place of residence independently, and some might have moved to other regions (a right guaranteed through the Federal Law N5242-1 'On the right of Russian citizens to freedom of movement and choice of residence within the Russian Federation').

From September to November 2, 145 new houses were built under the supervision of the Ministry of Regional Development, and the last evacuees in the Volgograd region and Altai krai were able to move in on November 30. The houses were often built in the original settlements to satisfy the demands of the victims, and followed the original street-plans (Vesti News Service, 2010). According to the construction plans published on the Ministry of Regional Development's website, 79 settlements were rebuilt, out of the 199 reported as destroyed. However, the Minister of Regional Development had announced mid-August that some of the original settlements could not be rebuilt: their residents therefore received apartments in nearby towns, or new houses constructed in nearby reconstructed settlements. As an example, the village of Verkhnyaya Vereya, in the Nizhny Novgorod oblast, which was entirely destroyed on July 29 with 341 houses burned down, was reconstructed in September,

and 60 additional houses were built to host people from nearby settlements that had been destroyed. The residents of the village of Mokhovoe, located in the Moscow region, where 15 residential buildings burned down, were relocated to a nearby village Beloomut, where 150 new individual houses had been constructed for the fire victims (Ministry of Regional Development, 2010b).

Following the request of the President, the infrastructure in the affected rural settlements was improved. Gas was provided to 19 settlements, and important social services introduced with the construction of maternity clinics, a nursery for 120 children, a playing field, playgrounds, shops, and a post office. The Ministry of Regional Development had further plans for the construction of additional social facilities (such as maternity houses, healthcare centres, schools, sports centres, art houses), roads, and electrical networks up to the end of 2011. According to the figures of the Ministry, by October 13, 10,933 billion Rubles (US\$ 358 million, 264 million Euros) had been distributed by the federal government and sent to the regions to finance material aid and reconstruction works (Ministry of Regional Development, 2010c).

### 3.4. Public response

As is often the case following major sudden humanitarian disasters, the wildfires galvanised civil society, resulting in various acts of solidarity and assistance. Many volunteered to fight fires that encircled settlements and wildlife reserves. Youth political parties, churches, NGOs, such as the Russian and the Estonian Red Cross, businesses, and individuals from all over the country collected and donated clothes, furniture, and electrical equipment to the victims who had lost all their possessions. As mentioned above, some people offered accommodation, and some owners of hotels provided rooms for temporary shelter. More than 40 large national and international companies donated funds for relief and reconstruction, and some companies made contributions in-kind (for instance, Samsung provided 2,000 televisions for the affected families) (Kremlin stenographic report, 2010).

The international community also provided assistance. Fourteen countries sent staff and equipment to help with fire fighting operations. Some countries raised funds (such as Switzerland, which contributed 360,000 Euros); some offered rehabilitation programmes for victims and helped in the construction of the new houses. The International Federation's Disaster Relief Emergency Fund (DREF) provided CHF 111,772 (US\$ 144,000, 101,000 Euros) to the Russian Red Cross for humanitarian aid to affected families (Relief Web, 2010).

The role of the media and the Internet was crucial in raising public awareness, complementing official figures that often understated or even played down the facts, denouncing the lack of political response and cases of social injustices, during the crisis and throughout the reparation period. Information and advice on how to help were posted on personal blogs, and helped mobilise public action.

## 4. ANALYSIS AND IMPLICATIONS

### 4.1. Criticism of the government response and policy

The main criticisms directed at the government concerned the failure to prevent the fires, which were aggravated by a slow, poorly coordinated and under-financed response. Many environmental NGOs and experts condemned the reforms of the Forest Code conducted by then President Putin in 2007, which resulted in spending cuts, the decentralisation and the dismantling of a forestry management and fire control system that had functioned effectively for decades, with professional, trained fire fighters and appropriate ground and air equipment. Following the 2010 summer disaster and these criticisms, President Medvedev requested to review the Forest Code and increase the budget allocated to protection from wildfires. Some proposals were reviewed and amendments accepted by the State Duma in December 2010 (Federal Law N 422, 2010), and the Federal Forest Agency presented additional proposals for amendments of the Code in February 2011, which essentially consisted of restoring the controls over the protection from fire to the Federal Forest Agency, increasing the staff and designing an efficient monitoring and warning system.

Negligence and failure to implement regulations by responsible authorities were another important cause of the disaster and of the extent of its consequences. Prime Minister Putin fired the head of the Federal Forest Agency, who had played down the extent of the fires at the beginning of the summer and claimed that the situation was under control. A new presidential decree in August, 'On additional measures for the prevention and liquidation of the emergency situation, related to fire safety' attributed personal responsibility to the governors for fire prevention and liquidation, and compensation to the victims. On September 4, the President requested the Prosecutor-General to conduct an investigation on the unpreparedness to manage wildfires among local authorities, who had not reacted to the disaster in a timely manner, and did

not implement existing regulations on disaster prevention and emergency evacuation plans. Local authorities were accused of dereliction of duty and legal proceedings were initiated against some members of regional administrations, including in Moscow and Ryazan oblasts (Gazeta News Service, 2010b and 2010c).

The allocation of compensation and the reparation process also sparked many questions and criticisms. First, not all victims of wildfires qualified for compensation. Owners of houses that burned from ground fire (caused by agricultural burning) or fires that occurred outside of the peak period, or in regions that were not declared as threatened, were not entitled to compensation. Those who could not provide a proof of residence for lack of registration documents were also forced to open legal proceedings, and some had to continue residing in temporary shelters in poor living conditions. Mass media regularly denounced compensation injustice and housing problems, which led to official investigations by the Investigation Committee of the Russian Federation in May 2011 (Ria News Service, 2011).

According to the official figures, of the 3,591 families that had been left homeless, only 3,402 received new housing or indemnity. Thus, 189 families seem not to have received any form of compensation. The reasons for this are unclear, but this figure perhaps includes the 150 owners of burned property that had not been found, as reported by the Minister of Regional Development. These owners had perhaps moved to another region prior to the fires and did expect to be compensated.

Some beneficiaries of compensation complained about fraud, as their new housing turned out to be smaller than their initial property. Moreover, the quality of the new hurriedly built houses was not always appropriate for the local climate. It became evident at the beginning of the winter that the thermal insulation of the new houses was poor, and the heating system was not powerful enough to heat the houses, or too costly for the elderly. Some new settlements were built in swampy areas, which could affect residents' health and comfort. Those who complained were reportedly insulted by local government officials (Radio Free Europe, 2010, Rosbalt News Agency, 2010).

Some people did not always have a choice despite the initial offers of various compensation schemes by the federal government: most elderly people were resettled in new houses and were not offered financial compensation as an alternative, on the grounds that they would be more exposed to fraud if they tried to rebuild their houses without the government's help. According to the testimony

of the residents of the village of Mokhovoe, they were not given a choice, and were relocated to new individual houses on the outskirts of a nearby village (Beloomut; Bigg and Kirilenko, 2010). In fact, many of the fire victims would have rather returned to their settlements, to which they were emotionally attached. Many, especially older people, who previously lived in apartments, were not ready to look after a house, which would be physically more demanding and more costly to maintain.

All told, the disaster pinpointed many legislative and institutional gaps in the management of emergency situations in Russia, as well as organisational weaknesses and a lack of professionalism at many levels of the country's administration.

## 4.2. Displacement and Resettlement

The disaster led to the resettlement of a section of the affected population, and governmental decisions and action in the aftermath of the disaster seem to have greatly shaped the patterns of displacement. Migration theory often refers to urbanisation processes, as difficult living conditions, natural hazards and a lack of job opportunities push people from rural areas to urban centres with better possibilities, services and infrastructure. It is possible that the wildfires and the destruction of settlements resulted in the departure of some people from rural areas to larger Russian cities. Younger families may have indeed been tempted to seek better opportunities in urban centres. But about a third of the victims preferred to take the financial compensation offered by the government, and there is no information on their subsequent movement and place of residence.

However, two thirds of the victims chose to move into the houses built by the government, which means in most cases that they remained in or close to their original settlement. Nearly half of the affected population were elderly and were not ready to leave the region with which they were familiar to start a new life elsewhere. At the same time, the compensation schemes designed by the government made it more economically advantageous to opt for new houses rather than to accept financial compensation, and in this sense the government perhaps encouraged a return policy within the affected population through promises of better housing and improved infrastructure and services. Such a view squares well with regional development policy, which has been designed to reverse the depopulation of rural areas.

While few people moved great distances as a result of the fires, much short-range displacement occurred. For example, official statistics show that



only 79 settlements have been restored out of the 199 initially reported as having been destroyed (Ministry of Regional Development, 2010b). Consequently, more than half of the settlements that burned down were abandoned. The reasons for this are not stated, but in some cases the government claimed that certain settlements could not be repaired, and new houses were built in nearby locations (it is not clear whether the residents were consulted prior to the decision and whether or not they agreed with it). In some cases the abandonment of settlements may have been a result of social modernisation policy: in October 2010, the Minister of Regional Development Victor Basargin requested the President's permission to examine the possibility of relocating the residents of very small isolated settlements to larger villages, where they could benefit from better social facilities and services, and find employment opportunities. This project was suggested to be implemented as part of the federal target programme 'Zhilishe'. Additionally, this would also reduce the costs of roads and infrastructure maintenance, and limit the vulnerability of the population in case of wildfires. According to the Ministry for Regional Development (Ministry for Regional Development videoconference, 2010), the population supported this policy and relocations have started in the Vladimir oblast. This policy again seems to have encouraged rural development, rather than an urbanisation process.

Overall, it seems that population displacement was limited and rather tightly controlled by the Russian government, which perhaps used the opportunity to support a policy encouraging the development of rural areas and preventing their depopulation.

## CONCLUSIONS AND RECOMMENDATIONS

Despite potentially good intentions, the way compensation and resettlement were planned, organised and implemented can legitimately be criticized. Choices were sometimes imposed upon the victims, some social injustices occurred, and work was conducted too hastily and with little consideration of the actual needs of the population.

Another criticism concerns the long-term implications of the disaster. As President Medvedev acknowledged, the heat wave that hit Russia in 2010 may have been an illustration of the effects of climate change and a hint of the challenges to come. Judging by the trends of the last decade, wildfires are likely to become more destructive

every year. As a result, rebuilding burned houses and infrastructure is not a sustainable policy, and further displacement of the population to more developed and less vulnerable areas may be a better solution.

Given people's reluctance or incapacity to abandon their homes and lifestyles on the one hand, and the risks of depopulation and loss of control of vast swathes of the country's territory on the other, the government will have to address the issue through a more sustainable approach. This would include increasing the resilience of the population, through stronger preventive, warning and protection systems, improved implementation of evacuation procedures and appropriate legal and institutional frameworks (including the revision of the Forest Code). Investments required for these adaptation measures will certainly be less than the cost of annual reparation and emergency response.

Where resilience cannot be built, voluntary migration can prove to be a positive adaptation strategy and reduce the vulnerability of the population (as well as reducing fires, most of which are caused by human activity and negligence). However, this would require appropriate conditions and mechanisms that would facilitate the relocation and the integration of people to new areas. These conditions and mechanisms could include improved infrastructure, subsidies to acquire housing in a new location, help with transport, help with integration into the local community, taking into account the fact that many of the people concerned are elderly or unemployed and thus have special needs. This would require an appropriate legal and administrative support, and therefore a revision of existing migration legislation. Some of these gaps have already been registered in the above-mentioned draft document for the new framework for the migration policy for 2012-2025, but the concrete policies and mechanisms would need to be further elaborated and described in greater detail in binding legal documents and guidelines. A few programmes already present in Russian legislation under the umbrella programme 'Zhilishe' (such as subsidies to people moving out of the Far Northern regions), could be used as a model for a resettlement and regional development policy supporting internal migration from wildfire-prone regions to safer areas.

Migration and development policies could well complement each other and improve the conditions of the population in the face of environmental hazards, through the assisted relocation of people to settlements with better infrastructure for protection from wildfires, transport and communication. Better employment opportunities available

in larger settlements and regional urban centres could help improve the livelihoods of rural residents. As for now, many make a livelihood from forest ecosystem services such as wood, berries, hunting: better employment opportunities would therefore make them less dependent on their immediate environment and more resilient to future disasters. The development of regional settlements and towns would at the same time help reverse current migration flows, reduce the pressure on larger urban centres in the west and centre of Russia, and perhaps even attract new migrants to the new modernised areas.

More generally, this case helps illustrate the complex relationship between natural disasters, migration and development, as environmental disasters can influence trends in population displacement and regional development, but can at the same time be mitigated through appropriate migration and development policies. Therefore, environmental factors and risks should be considered in both migration and development policy, and disaster prevention and relief policies should integrate migration and development as possible adaptation strategies. There is a great potential for improvement of Russian legislation and policies in this domain. ■

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