

Heat Wave of 2007 Devastates Europe

On July 24, 2007, Reuters news service¹ reported that: "Twelve Romanians died and firefighters, soldiers and volunteers battled wildfires across southeastern Europe on Tuesday as a heat wave broke temperature records across the Balkans. There was a blackout in many parts of Macedonia and some parts of Albania and northern Greece as power lines struggled to cope with temperatures of over 40 degrees Celsius and an increased load from air conditioners. In Romania, new deaths pushed the toll from the heat wave up to 30. After forecasts of easing temperatures, health officials were preparing to downgrade emergency measures from 'Code Red,' although in some parts of the country temperatures soared to an all-time record of over 44 degrees Celsius (111.2 Fahrenheit). Some 19,000 Romanians have been admitted to hospitals in the region's second devastating hot spell this year. More than 35 people died in Romania, Turkey and Greece in June when the mercury shot up to 46 degrees Celsius. Serbia battled 50 forest fires on what meteorologists predicted would be the hottest day of the year, with the temperature topping 43 degrees Celsius...."

That same day, the BBC reported that over 500 people had died in Hungary from the heat wave in the previous week.²

Notes:

1. <http://uk.reuters.com/article/worldNews/idUKL2477782520070724?sp=true>.
2. <http://news.bbc.co.uk/2/hi/europe/6914490.stm>.

environmental civil society organizations. For example, the Russian Hydrometeorological Service (Roshydromet) is projecting a significant increase in hazardous events (floods, snow avalanches and mudflows, hurricanes, squalls, etc.) as recent tendencies

for warmer, wetter climates continue. From 1991 to 2006, the number of hazardous events in Russia more than doubled, increasing from 153 to 387 events annually.

Roshydromet is paying particular attention to the likely continuation of this trend, both in the shorter term (to 2015) and longer term (to 2050). Risks are expected to be highest in the northern Caucasus and Volga-Vyatka economic zones, Sahkalin, Kemerovo, Ulyanovsk, Penza, Ivanovo, Lipetsk, Belgorod, Kaliningrad, and the Republic of Tatarstan. The most vulnerable sectors are considered to be water supply, hydropower, pipeline transport, river transport, the safety and maintenance of buildings and structures, and public health. The energy sector may benefit due to a reduction in the heating season and increased energy saving programs. The agriculture sector also may benefit as a result of improved crop growing conditions and increased productivity.

Countries in the southern Caucasus—such as Armenia, Azerbaijan, and Georgia—also are faced with more severe flooding events. National concern has generally focused on

immediate disaster response rather than longer-term problems. Model simulations of regional climate change (Hovsepian and Melkonyan 2007) by the Armenian national hydromet service (supported in part by the World Bank) suggest both positive and negative consequences. Productive agriculture will be able to extend to higher elevations and growing seasons will be longer. Increases in flooding, however, could require a major expansion in water storage reservoirs by as much as 2 billion cubic meters for effective flood regulation. More sporadic rainfall recharge will require improvements in national water management strategies and improvements in water efficiency.

Water resource management issues in Central Asia are already a core element in regional dialogue. Water specialists know that despite some recent successes—such as the World Bank-supported project to restore the Northern Aral Sea—melting glaciers and reduced snowpack due to warming trends over the next few decades will exacerbate water scarcity issues, especially for irrigated agriculture. Plans for extensive hydropower development in Tajikistan to serve major regional power needs, to cite another example, will also need to take these factors into account.

Responses by Partner Countries on Adaptation

The European Union has an ambitious program of research. While emphasizing European problems and solutions, the EU also looks at developing-country and global approaches to both mitigation and adaptation. This is increasing understanding of problems and solutions, while also spurring significant policy debate on the response to adaptation between the European Commission and EU member states, candidates, and acceding countries.

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Turkey

Active since the 1980s, the EU research program on climate change has increased in recent years and played an important role in providing scientific information to the Fourth IPCC report. Under the 6th Framework Programme, over 45 research projects were launched in seven areas: (1) carbon and nitrogen cycle sources and sinks, (2) atmospheric pollutants and their regional impacts, (3) stratospheric ozone and climate interactions, (4) climate dynamics and variability, (5) prediction of climate change and its impacts, (6) adaptation and mitigation strategies, and (7) observing and forecasting systems. Technical meetings are held among and across thematic research teams to help foster information sharing. The 7th Framework Programme announced in December 2006 allocates 1.9 billion euros for climate change and the environment over the next six years.

On the policy side, the European Commission released a Green Paper in June 2007 that looks at options for an EU response on adaptation to climate change (CEC 2007). The paper lays out the technical bases for action, raises key questions for the public (to be covered in four public meetings and through the Internet), and sets the stage for a proposed policy response in a White Paper planned for November 2008.

Ongoing research and policy analyses, which will support the White Paper, were discussed at a November 2007 International Symposium on Future Climate, Impacts, and Responses held in Brussels. Based on those discussions, it seems likely that the EU policy response will first target the review and adjustment of existing community-wide legislation (such as the Water Framework Direc-

tive and agricultural policies) and responses in process (such as the Floods Directive) to eliminate disincentives and conflicts with sound adaptation policies. Financial incentives from the EU for encouraging “soft” adaptation measures to reduce impacts, which will help in both the short and longer term, are also likely in the years ahead.

World Bank Engagement on Adaptation

ECA is already including climate considerations in its investment lending portfolio. Watershed projects under way in Armenia, Tajikistan, and Turkey, for example, include support for farming and forest systems adapted to drought. Irrigation and water

management projects under way in Albania, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Romania, Tajikistan, and Uzbekistan support improved water management and conservation approaches, which will further ensure climate resilience. Flood management investments in Poland, Romania, and Serbia help mitigate the effects of extreme weather events, which are expected to increase in the decades ahead.

The ECA Region's strategic goal on climate change is to assist partner countries in meeting their obligations to mitigate the global impacts of climate change and expand national adaptation planning and investments to reduce impacts in vulnerable locales and sectors. The Region is focusing its efforts on three client groups. First, in the case of EU members and candidate and acceding countries, the Bank will support their efforts to respond to new Community-wide legislation and initiatives as well as any national initiatives. This work will expand as the EU's policy position is presented in November 2008 and as EU Council action on that paper is taken in early 2009. For the second group of clients outside of this direct linkage to the EU, the Bank will help inform decision makers and the public on emerging national adaptation planning and resilient infrastructure investments. Finally, as in all Bank Regions, ECA staff must have the state-of-the-art tools to improve advice and facilitate financing of "climate-proofed" investments.

While there is global consensus on the importance of addressing climate change, the many uncertainties on actual impacts by sector, by location, and over time presents an understandable barrier to action in some cases. A number of ECA clients are considering what action can be taken in the very near term to improve national disaster risk reduction and adaptation. For example, if flooding is already more severe and more frequent, then improvements in disaster risk reduction and management in the next few years set the stage for longer-term adapta-

tion response. A pilot program in southeastern Europe (SEE) (in cooperation with the United Nations and other organizations) has recently been completed that is paving the way for a longer-term, phased program on Disaster Risk Reduction and Adaptation. The objectives of this effort would be to extend financing to countries in and beyond SEE to implement activities to promote disaster risk reduction and adaptation. A flexible approach is envisaged with two elements: (1) regional projects such as meteorological and flood early warning systems and regional insurance pools and (2) country-specific investments such as emergency management, flood control, strengthening enforcement of land use plans, and development controls.

Another "win-win" activity is the strengthening of national weather and climate forecasting services. A recent review found that 20 to 30 years ago, weather forecasting and overall provision of hydromet services in many ECA countries were at the leading edge of world capacity. But the status of most weather services among the Bank's ECA clients has deteriorated considerably in the last two decades, mainly as a consequence of persistent underfinancing. The scope of the accumulated problem is so great that without massive modernization, networks in

some ECA countries are on the way to becoming completely dysfunctional. This has very serious implications for both short-term forecasting (where up to 35 percent of flood damage can be mitigated if a flood warning is issued in reasonable time), mid-term climate projections (for example, for designing new hydropower plants), and longer-term climate work. The Bank is currently lending to Russia to improve its hydrometeorological services and is expanding both its analytical support and proposed lending to other countries.

In mid-fiscal year 2008, the ECA Region launched an ambitious program of sector work to advance the dialogue on medium- and longer-term adaptation needs. This will lead to a region-wide aggregation of understanding in key sectors and regions in Spring 2008 and a series of targeted subregional analyses in vulnerable sectors over fiscal years 2008–09. The approach to the latter includes (a) reviewing observed impacts in targeted areas, (b) aggregating and peer-reviewing existing forecasts of climate change in these areas, (c) funding value-added downscaling models and sectoral impact assessments, (d) using these assessments to frame adaptation options, (e) assessing institutional capacity, (f) engaging decision makers and stakeholders, and (g) scaling up the assessments for ECA-wide applications in fiscal years 2009–10.

Selected References

CEC (Commission of the European Communities). 2007. *Adapting to Climate Change in Europe—Options for EU Action*. Green Paper. Brussels: EC.

Hovsepian, A., and H. Melkonyan. 2007. *Model Simulations of Climate Change over the South Caucasus during 21st Century*. Washington, DC: World Bank.

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Poland