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NEWS IN BRIEF

Locusts

Early warning system

At the Third International Early Warning Conference in Bonn, Germany (March 2006), WMO revealed a pilot project for an early warning system to prepare populations against locust plagues. Progress in weather forecasting has led to increasingly accurate predictions of conditions conducive to locust breeding, from which plagues generally emerge.

WMO's presentation of the pilot project included an introduction to locusts and the damage caused by them; the importance of meteorological information for their monitoring and control; and technological advances and operational tools in meteorology that facilitate locust monitoring and prediction.

The West African Pilot Project on Early Warning Systems Desert Locusts aims to develop more effective and efficient operational tools and information for

monitoring and predicting locust development and migration at national level. Another objective is to build capacity to plan control operations.

The project will target Mauritania and Senegal. In 2004, a massive locust swarm caused widespread and catastrophic damage to crops and vegetation throughout areas of North Africa.

Monitoring and control

WMO and the United Nations Food and Agriculture Organization (FAO) organized a workshop on meteorological information for locust monitoring and control in Muscat, Oman, in April. It was attended by experts and representatives of National Meteorological and Hydrological Services (NMHSs) and National Locust Control Centres (NLCCs) of 11 countries in north-eastern Africa and south-western Asia.

The objective was to target roles and responsibilities and to

coordinate and plan more effectively in the event of future locust outbreaks. A special concern was the dissemination of daily weather data to the NLCCs and international organizations and the potential use of advanced weather forecast model products for locust monitoring and control.

It was recommended that several products should be provided by each NMHS to its corresponding NLCC:

- Daily rainfall and temperature weather station data (to be sent by e-mail);
- Map of daily satellite rainfall estimate product or 00 hour rainfall forecast from numerical weather prediction models;
- Forecast weather products for rainfall, temperature and wind;
- Position of the inter-tropical convergence zone during the summer season.

Initially, these products could be obtained from the Internet as graphic files but the ultimate aim is to provide this information in

digital format for input into a geographical information system. Also, the NMHSs of Oman and Egypt will be considered as providers for assistance in numerical weather prediction and satellite products to the NLCCs in neighbouring countries in their respective regions.

Other recommendations were made with a view to facilitating this work. They included the establishment of high-level formal agreements, joint task forces, and focal points between NMHSs and NLCCs in each country; training courses and manuals for NLCC staff on using weather products and for NMHS staff on locust issues. The facilities of NMHSs and NLCCs should be improved. WMO and FAO were urged to provide resources (equipment, training) for countries not able to provide satellite and NWP products.

WMO and FAO should prepare a joint brochure on locust meteorology for decision-makers, donors and the general public.

Agricultural meteorology and climate information in the South-West Pacific

An effective climate information system is one which provides climate information that is easy to understand, meets users' requirements, and becomes available to them in a timely fashion so that they can use it for taking appropriate decisions.

Close collaboration between climate information producers and end-users ensures that climate information systems are continuously improved. Strengthened collaboration among National Meteorological and Hydrological Services (NMHSs) and related agencies facilitates the sharing of experiences, technologies and human resources.

Agrometeorological applications in the sectors of agriculture, forestry and fishing have tremendous socio-economic potential for all developing countries.

Experts meeting in Indonesia in March agreed that, in the South-West Pacific, the focus of activities should be on strengthening linkages between the producers and users of climate information, the use of modern technologies in climate forecasting, climate-forecast applications and economic impacts of agrometeorological information.

To this end, it will be necessary to review and recommend applications of seasonal-to-interannual climate forecasts. It will also be necessary to assess the existing level of interaction with user communities in the applications of climate forecasts and how user needs can be met more effectively.

Appropriate risk-management strategies to address current and future climate change and climate extremes should be formulated and promoted through improved communication and more targeted applications.

The economic impacts of applying agrometeorological information in the South-West Pacific will be demonstrated through specific case-studies.

Ways and means will be sought to foster a multidisciplinary approach to applying weather and climate information in agriculture, forestry and fisheries.

The use of remote-sensing techniques will be evaluated for monitoring crop growth phases, crops lost to climate hazards, and crop production. Their applications in operational agrometeorology will be promoted.

Weather, climate, and farming

With WMO guidance, roving seminars are being developed by NMHSs to increase the interaction between NMHSs and the agricultural community. The overall goal is to make farmers more self-reliant by helping them

become better informed about weather and climate issues that influence their crop production.


This kind of information can improve farmers' risk management and ensure sustainable use of natural resources. Topics will include basic weather and climate information provided by NMHS experts, applications of weather and climate in agricultural decision-making, and pest and disease control provided by agricultural extension agents.

The first roving seminars are planned to be held in Ethiopia and Colombia.

World Water Forum

The Fourth World Water Forum was convened in Mexico City in March 2006. The Forum is the largest international event on freshwater. It seeks to enable multi-stakeholder participation and dialogue to influence water policy-making at the global

FLASH FLOOD GUIDANCE FOR CENTRAL AMERICA



The US National Aeronautics and Space Administration (NASA) has established the Central American Flash Flood Guidance System (CAFFGS) at the Costa Rica Meteorological Service in San José. The Centre is co-located with the weather forecasting centre.

It has been installed on a limited-access, high-security computer system. Costa Rica receives data from the GOES satellite (five channels, including infrared information) directly onto a dedicated server.

Precipitation estimates are made in Costa Rica, making use of an algorithm already installed on the system of the Meteorological Service. Imagery is stored for the previous seven days with a selective archive of images prior to the previous ten days.

Meteorological input is provided by high-resolution models provided by the US National Weather Service and run on a workstation at the San José office. Three domains with three different grid sizes—regional, national and local—can be used. Currently, the numerical weather prediction output tends to overestimate the rainfall. Data from 12 real-time raingauges can be accessed. Bias is adjusted, using all the data across Central America, which may not allow for local influences.

Layers in the geographical information system used include the output from the soil-moisture model and basin mean areal precipitation (based on the satellite data). An antecedent moisture index is then calculated.



The countries of Central America are prone to flash floods engendered by tropical cyclones every year.

Using the forecast rainfall from the numerical weather prediction models and the antecedent moisture index, areas of potential flash flooding can be identified and flash flood guidance can be issued for each country in the Central American Isthmus (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama).



The WMO booth at the Fourth World Water Forum (Mexico City, March 2006) attracted many visitors.

level, in pursuit of sustainable development.

The Forum's main theme was "Local actions for a global challenge". It was addressed through five framework themes: water for growth and development; implementing integrated water-resources management; water supply and sanitation for all; water management for food and the environment; and risk management.

WMO prepared various documents on risk management through a wide consultative process, which included a "virtual forum". Risk is described therein as a function of the magnitude of the hazard, the degree of exposure of a society or community to the hazard and the

vulnerability of society against damage caused by the hazard. The management of risk consequently has to take into account those three components to form a systematic process, comprising all forms of activity. These include structural and non-structural measures to avoid or limit adverse effects of hazards.

Three technical sessions were co-convened: "The importance of information for integrated water-resources management", "Flash floods" and "Drought management". Two other sessions were co-convened on the topics of "Integrated flood management" and "International collaboration in flood management".

Drought management

Within the World Water Forum theme of "Drought management" (see previous item), the WMO presentation was entitled "Managing drought risks—role of improved preparedness and management". Current methods of drought management are largely crisis-driven and there is an urgent need for a more risk-based management approach to planning at the national and regional levels. An effective risk management approach would include a

timely and user-oriented early warning system with rapid dissemination of information to users.

Effective management of, and preparedness for, droughts requires free and unlimited

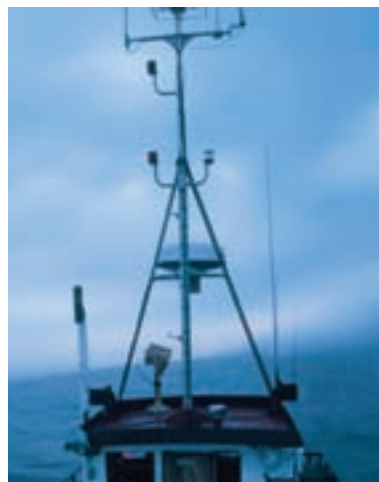
access to relevant information that allows monitoring, assessment and prediction.

The growing frequency of droughts requires effective use of the media to better inform and educate the general public and

VOLUNTARY OBSERVING SHIPS

WMO's Voluntary Observing Ships (VOS) programme is a worldwide programme in which some 6 700 ships from 55 countries are currently participating. These ships observe and report weather conditions on the high seas. The data they provide are critical for marine meteorologists to determine prevailing conditions over the ocean, where observations are scarce. These data are essential input for numerical weather prediction models to produce weather forecast guidance for the oceans. They enable meteorologists to improve the accuracy of their marine forecasts, especially in the short-term, and they have also been incorporated into climatological applications.

Port Meteorological Officers (PMOs) are representatives of their National Meteorological Service as far as contact with the maritime authorities is concerned. Their role is an important one and the effi-



ciency of the voluntary system of ships' observations often depends on the initiative displayed by these officers.

Port Meteorological Officers visit ships in their programme several times a year. During these visits, meteorological instruments are calibrated or repaired, the meteorological log books are inspected and the ships' officers are trained, if required. Weather briefings are also provided, as needed.

An international workshop for PMOs was held in Germany in March 2006. Major aims were to inform of recent developments, enhance communications and promote global standards of service.

A number of recommendations were made. These concerned, among others, ship security, recruiting more Voluntary Observing Ships, education and outreach, improved data submission, proper installation of instruments on ships, reporting on observing practices, and monitoring.

COMING EVENTS

5-7 July: International Workshop on Antarctic Sea-Ice Thickness (Hobart, Australia)

17-21 July: WMO Conference on Living with Climate Variability and Change: Understanding the Uncertainties and Managing the Risks (Espoo, Helsinki, Finland)

4-8 September: Joint Meeting of the Expert Team on Satellite Utilization and Products and Expert Team on Satellite Systems (Geneva)

7-13 September: Regional Association III (South America)—14th session (Lima, Peru)

18-22 September: Tenth WMO Symposium on Education and Training, "Meteorological and Hydrological Education and Training for Disaster Prevention and Mitigation" (Nanjing, China)

28 October-3 November: Commission for Agricultural Meteorology—14th session (New Delhi, India)

policy-makers about their potential impacts and the need to adopt better preparedness and management strategies.

With the development of water resources in arid and semi-arid regions, not only are the irrigated lands more exposed to drought, they have to face their growing frequency. Governments, therefore, should introduce structural and non-structural policies, in parallel with their development plans, to be able to cope with the increasing risks.

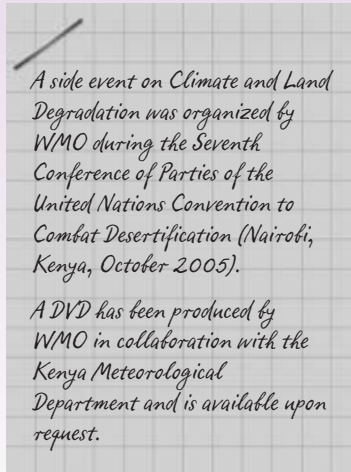
Countries should develop policies aimed at effective drought management. Such policies should emphasize preparedness and incentives over insurance, insurance over relief, and relief over regulation.

The bottom-up approach followed in local action can complement the top-down approach and lead to a much more powerful mode of development. Local communities would become key players in the development process.

New WMO Project Office

A WMO Project Office has been established in Mexico to support the National Water Commission in its aim to achieve integrated, sustainable management of Mexico's water resources.

The Project Office is part of an Agreement of Cooperation signed between Mexico and WMO on



2 September 2005. The Secretary-General of WMO and the Director-General of Mexico's National Water Commission (CONAGUA) signed the complementary agreement during the Fourth World Water Forum (see pages 2 and 3) in the presence of the Secretary-General of the Forum and the Permanent Representative of Mexico with WMO.

Public education and outreach

National Meteorological and Hydrological Services (NMHSs) have a vital role not only in preparing accurate weather forecasts and warnings, but also in ensuring that those products and services are delivered to the public and other users, and that they are properly understood and acted upon for maximum effectiveness.

In this regard, NMHSs also have an important role to play in educating users in how to use such products. WMO has therefore taken the initiative to develop a project to help NMHSs educate their public. The aim is to increase understanding of the usefulness of public weather services, as well as to increase awareness of the uncertainty in weather forecasts. It also aims to promote better understanding of the Earth Sciences in primary and secondary schools.

The expected result is that the public will be better equipped to make informed decisions and to respond appropriately to official information disseminated by the NMHSs. This will result in a reduction in the loss of life and livelihood from severe weather events and better use being made of weather information in daily socio-economic and leisure activities.

Climate events in 2005

The year 2005 was one of the two warmest years on record since 1850, with an estimated global surface temperature of +0.47°C to +0.58°C above the annual average (see *WMO Statement on the Global Climate in 2005* (WMO-No. 983)). Long-term drought continued in parts of the Greater Horn of Africa, putting 11 million people at risk from starvation.



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Persistent drought conditions caused one of the worst wildfires in south-western Europe.

The boreal summer 2005 brought an unusually wet monsoon that caused massive flooding in parts of India. Long-lasting heavy rainfall led to major floods in many parts of Europe.

The Atlantic hurricane season was the most active season on record with an unprecedented 27 named tropical storms (the average is ten), of which seven were major hurricanes (see box below).

Australia had its hottest year on record.

HURRICANES



The 2005 hurricane season brought unprecedented damage to North and Central America and the Caribbean.

WMO's Hurricane Committee met in Puerto Rico in March/April. Emphasis was given to the value of cooperation among the National Meteorological Services of the North and Central America and Caribbean region for the exchange of information, forecasts and warnings.

In the record-breaking 2005 hurricane season, the list of assigned names was exhausted for the Atlantic Basin and the Greek alphabet was used for the first time. After considerable debate, the Committee decided that the Greek alphabet would continue to be used.

In view of the deaths and damage associated with five major hurricanes in 2005, the Committee decided to replace *Dennis* with *Don*, *Katrina* with *Katia*, *Rita* with *Rina*, *Stan* with *Sean* and *Wilma* with *Whitney*.

During the closing ceremony of the Committee meeting, the Executive Director of the Puerto Rico Emergency Management Agency presented WMO with a certificate in recognition of its valuable commitment and contributions to the field of disaster management.

