



METEOROLOGY IN THE SERVICE OF SPORTS

by Godwin O. P. Obasi*

World Meteorological Day commemorates the coming into force on 23 March 1950 of the Convention of the World Meteorological Organization (WMO). Each year, WMO celebrates the Day by focusing on a theme of topical or current interest to humankind. In view of the growing support and recreational activities, the theme for World Meteorological Day 1996 was selected to be "Meteorology in the service of sports". As this year also marks the 100th anniversary of the modern Olympic Games, the choice is both appropriate and timely. World Meteorological Day in 1996 offers a unique opportunity for national authorities and the general public to consider and appreciate the role and support which climate, weather and water services provide to organized

games and individual sports and recreational activities.

Weather is an important factor in the world of sports, especially outdoor sports, such as football, baseball, athletics, tennis, skiing, boating and golf. The experience and skills of National Meteorological and Hydrological Services (NMHSs), which are supported by all the programmes of WMO, contribute to providing these activities with relevant, timely and accurate information about weather and climate. Historical climate records provide the basis for planning sporting events. For major events, such as the Olympic Games, the All-Africa Games, the Asian Games, the Commonwealth Games and the Pan-American Games, an analysis of the available climatological data is normally needed years in advance to determine the general suitability of a site. Climate information, such as temperature, relative humidity, winds,

required to ensure the safety of participants and spectators. Trying to clear a golf course or evacuate a stadium of several thousands of people during emergency situations in adverse weather conditions can result in death and injury.

In staging major sporting events, several millions of dollars are invested by organizers, sponsors, the media and the spectators. In the case of the Olympics for example, it is estimated that, on any one day, some 250,000 to 500,000 people are involved in sporting activities, whether as organizers, athletes or spectators. Cancelling or postponing sporting events can therefore have serious economic consequences and, prior to investing large amounts of capital in developing sporting venues or preparing for major events, the commercial sector concerned is particularly interested in climate and weather information. There have even been occasions when sporting events have been cancelled because of unfavourable weather conditions, such as high winds, lightning or flooding which occurred during the competition. In fact, owing to the short-term variability of weather conditions, which may result in unequal conditions for competitors, a number of organized sporting events, which normally take place outdoors, now take place in semi-protected environments in enclosed or covered stadiums

precipitation and the quality of air and water, contribute to a great extent not only to site selection but also to the strategy of training and preparation of athletes. In some cases, additional meteorological and hydrological measurements are carried out on site in order to provide more specific information or advice. Under certain circumstances, especially when severe weather is anticipated, special studies and preparations are

In view of the sensitivity of sporting events to weather and climate, many opportunities exist for NMHSs to provide increased support to sports. Weather information routinely provided by them is used by the general public for recreational and non-com-

Fog over the giant men's slalom during the X Olympic Winter Games Grenoble in 1968.





petitive sports, such as cycling, hiking, cross-country skiing, rock climbing, gliding, sailing and many others. Furthermore, information about the occurrence of severe weather, such as heavy rain, flash floods or strong winds, is used by athletes, organizers and spectators in planning for sporting events. Information on ultra-violet radiation, heat stress, wind chill and the quality of the air and water are important elements for all outdoor sports and for fitness 'enthusiasts. Such information has to be supplied to them at least daily and, in the case of severe weather, immediately.

Advances in science and technology enable NMHSs to provide more accurate and detailed weather information and advice in support of sporting events. Observations using modern, sophisticated equipment, such as Doppler radar, automated surface and upper-air recorders, high-resolution geostationary satellite systems, real-time lightning-detection networks and forecasts derived from high-resolution numerical weather prediction models help to provide up-to-the-minute data, information and forecasts. The improvement in seasonal to inter-annual forecasts resulting from advances in long-range forecasts and, in particular, the higher accuracy achieved in one-to-five-day forecasts and now-casting have enhanced the capability of NMHSs to provide increasing levels of support to all types of sports.

Another area where NMHSs can begin to assist the sports community, and where WMO is planning to cooperate with the International Olympic Committee, is that of "environmentally sustainable sports". In this respect, WMO and the IOC have agreed to sign a Memorandum of Understanding. The Memorandum will emphasize matters of common interest between the two organizations, especially the contributions which WMO and its Members can



Emil Zutopek and Gaston Reiff in the rain at the Games of the XIV Olympiad in London in 1948.

provide in the areas of weather, climate and water services to the protection of life and property, to safeguarding the environment and to the use of these services in sports. Following the United Nations Conference on Environment and Development (UNCED) (Rio de Janeiro, June 1992), which expressed concern about the natural environment and the impact of sports on sustainable development, the IOC has added "environment" as the third dimension of the organization of the Olympic Games, in addition to sport and culture. Since UNCED, other major sports organizers have also been considering the issue of clean air and water, use of renewable energy, conservation of natural habitats, use of natural lighting, and other environmental issues. It is to be hoped that these organizers will also take into consideration the role of NMHSs in supplying weather and climate data and information. On their part, the NMHSs should work closely with or-

ganizers of sports at national and regional levels and contribute to "green games" through public awareness and information initiatives aimed at athletes, organizers and spectators.

The theme "Meteorology in the service of sports" for World Meteorological Day 1996 is an opportunity for national authorities, the general public and the sports community, as well as meteorologists and hydrologists, to reflect on the important application of accurate and timely weather, climate and water data and information to sports. This World Meteorological Day should be an occasion to forge new partnerships to enhance meteorological and hydrological services to the sports community at national, regional and international levels. Everyone who engages in sports and recreational and leisure activities will come to appreciate the important and beneficial support which NMHSs and WMO can give to sporting activities.

*Secretary General, WMO