

MAJOR OUTPUTS OF THE BUREAU OF METEOROLOGY

The Bureau of Meteorology output structure derives from its four basic missions and objectives. From the mid-1980s until 1998-99, the Bureau planned and reported against an output-based program structure. With the introduction of the Outputs/Outcomes framework in 1999-2000, the program structure was replaced by an Output structure. Figure A4.1 provides a mapping from the Program framework used previously in Bureau Annual Reports to the Output structure adopted in the Portfolio Budget Statements of 1999-

2000, and reflecting the common base of the two structures in the Bureau’s basic objectives.

The 2000-01 Output structure involves:

- four Output Groups (Meteorological and Related Data and Products, Meteorological and Related Research, Meteorological and Related Services and International Meteorological Activities) corresponding closely to its four basic missions and basic output objectives (Climate Record, Scientific Understanding, Community Welfare

| BASIC (OUTPUT) PROGRAM | MAJOR PROGRAM | | Program | Output | MAJOR OUTPUT | OUTPUT GROUP |
|------------------------|---------------------------|-----------------------|--------------------------------------|---------------------------------|--|--|
| MONITORING | MONITORING AND PREDICTION | | Observations | Observational Data | Meteorological and Related Data and Products | Meteorological and Related Data and Products |
| | | | Engineering Communications | Processed Data and Products | | |
| | | | Computing | | | |
| | | | Analysis and Prediction | | | |
| RESEARCH | SCIENTIFIC DEVELOPMENT | | Pure Research | Pure Research | Meteorological and Related Research | Meteorological and Related Research |
| | | | Strategic Research | Strategic Research | | |
| | | | Applied Research | Applied Research | | |
| | | | Supporting R and D | | | |
| SERVICES | SERVICES | WEATHER SERVICES | Severe Weather Warning Services | Severe Weather Warning Services | Weather Services | Meteorological and Related Services |
| | | | Public Weather Services | Public Weather Services | | |
| | | | Marine Services | Marine Services | | |
| | | | Aviation Weather Services | Aviation Weather Services | | |
| | | | Defence Weather Services | Defence Weather Services | | |
| | | | Special Weather Services | Special Weather Services | | |
| | | CLIMATE SERVICES | Climate Data Bank | Archived Data | Climate Services | |
| | | | Climate Data Service | Climate Data Service | | |
| | | | Climate Monitoring Service | Climate Monitoring Service | | |
| | | CONSULTATIVE SERVICES | Meteorological Advisory Service | Meteorological Advice | Consultative Services | |
| | | | Special Investigations | Special Investigations | | |
| | | HYDROLOGICAL SERVICES | Water Resources Assessment | Water Resources Assessment | Hydrological Services | |
| | | | Flood Warning Service | Flood Warning Service | | |
| | | | Hydrometeorological Advisory Service | Hydrometeorological Advice | | |
| INTERNATIONAL | INTERNATIONAL ACTIVITIES | | International Activities | WMO Contribution | International Meteorological Activities | International Meteorological Activities |
| | | | | Multilateral Activities | | |
| | | | | Bilateral Activities | | |
| | | | | | | |
| | CORPORATE ACTIVITIES | | Public Education | | | |
| | | | Training | | | |
| | | | Executive Management | | | |
| | | | Management Services | | | |

Figure A4.1. Alignment of the 1998-99 Program structure (left) with the Output structure effective from 1999-2000 (right) for planning and reporting Bureau of Meteorology operations.

- and International Cooperation);
- seven Major Outputs (Meteorological and Related Data and Products, Meteorological and Related Research, Weather Services, Climate Services, Consultative Services, Hydrological Services and International Meteorological Activities) which result from subdividing the Meteorological and Related Services Output Group according to the nature of the service; and
 - twenty-two Outputs based on a subdivision of the seven Major Outputs by function, user or outcome as appropriate for planning and management purposes.
- The planned outcomes from, and brief descriptions of, the seven Major Outputs follow.

Meteorological and Related Data and Products

Planned Outcome: Satisfaction of present and future needs for continuous reliable data and information on Australian weather and climate.

Description: Meteorological and Related Data and Products is the major output of the basic observation, communications and data processing systems established to maintain a round-the-clock nationwide weather watch and to meet present and future national and international needs for raw and processed meteorological data. The basic observation, communications and data processing systems which make up the core of this major output provide the common foundation on which virtually all the research, services and international functions of the Bureau of Meteorology depend. The observation system includes a Bureau-staffed surface and upper air network of 50

stations, a surface network of over 800 synoptic observation stations, a 6000-strong volunteer rainfall network and a range of other specialised networks and facilities such as radars and satellites. The communications system consists of an integrated network of satellite, radio, telegraph, facsimile and computer facilities for data collection and forecast and warning dissemination. The major analysis and prediction centres are the National Meteorological and Oceanographic Centre in Melbourne and the seven Regional Forecasting Centres, one in each State and the Northern Territory. Engineering, workshop and computing facilities, which support and maintain the data collection and processing systems in the Bureau Head Office and the Regions, are also key contributors to this output.

Meteorological and Related Research

Planned Outcome: Advancement of meteorological science and understanding of the mechanisms of Australian weather and climate.

Description: Meteorological and Related Research includes both research undertaken in fulfilment of the Bureau's responsibilities, as a national research agency, to contribute to the advancement of meteorological science in Australia, and the development of an integrated comprehensive description and scientific understanding of Australia's weather and climate, and the development of the application of meteorology in the national interest. The main research activities are carried out by the Bureau of Meteorology Research Centre in collaboration with the operational areas of the Bureau.

Weather Services

Planned Outcome: Enhanced community safety and well-being through the effective use of weather and related services by the general public and other major social and economic sectors.

Description: Weather Services encompass the provision of a wide range of forecast, warning and information services to the general public, national and international shipping and aviation, the Department of Defence and other users. It consists of six component outputs:

- Severe Weather Warning Services;
- Public Weather Services;
- Marine Services;
- Aviation Weather Services;
- Defence Weather Services; and
- Special Weather Services.

These are based on the data and products produced on a round-the-clock basis by the National Meteorological and Oceanographic Centre and the seven Regional Forecasting Centres as part of the Meteorological and Related Data and Products Output Group.

Climate Services

Planned Outcome: Enhanced community safety and well-being through the effective use of climate and related services by the general public and other major social and economic sectors.

Description: Climate Services encompass the provision of climatic data and advice to the general public and a wide range of specialist users. Long-term climatic data, obtained from the basic and special observational networks and stored in the National Meteorological Data Bank, are published in the form of climatic summaries and atlases and made available in both hard copy and computer-compatible form for use in research, design and application to all walks of life. Climate services

also include the month-to-month and year-to-year monitoring of major climate fluctuations such as droughts and floods and, to the extent possible, the prediction of climatic anomalies likely to affect agriculture and other sectors of the economy.

Consultative Services

Planned Outcome: Enhanced community safety and well-being through the effective use of meteorological consultative services by the general public and other major social and economic sectors.

Description: Consultative Services includes the provision of advice and the conduct of investigations involving the application of meteorology to such fields as agriculture, engineering, architecture, health, tourism, urban planning and design. Services are provided to Government and private users, on a public interest, cost recovery or commercial basis, as appropriate. The services are coordinated by the Bureau Head Office in Melbourne but draw on data and expertise from throughout the Bureau

Hydrological Services

Planned Outcome: Enhanced community safety and well-being through the effective use of hydrological and related services by the general public and other major social and economic sectors.

Description: The Bureau's Hydrological Services include water resources assessment, hydrometeorological advice for design, and other aspects of operational hydrology including, in particular, the provision of flood warning and forecasting ser-

vices. These services depend heavily on the information collected through the Bureau's basic national meteorological observation networks. The flood warning service also operates a special purpose network of rain-fall and river level stations in cooperation with State and Local Government agencies. Flood Warning Centres operate in all Regional Offices of the Bureau.

International Meteorological Activities

Planned Outcome: International cooperation and goodwill including the benefits of global meteorological cooperation under the Convention of the World Meteorological Organization and related international meteorological treaties and agreements.

Description: International Meteorological

Activities encompass Australia's involvement in the programs and activities of the World Meteorological Organization (WMO) and in a range of other multilateral and bilateral activities with neighbouring countries in the South-West Pacific and South-East Asia. Australia is particularly active in the WMO through the operation of one of the three World Meteorological Centres of the WMO World Weather Watch Programme. Bilateral arrangements exist with China, India, Indonesia, Iran, Japan, the Republic of Korea, the Russian Federation, and the Socialist Republic of Vietnam, in particular. A fundamental principle embodied in the Convention and traditions of WMO is that of voluntary contribution to the total international system and the free exchange of essential data and products between the National Meteorological and Hydrological Services of all countries. Australia benefits greatly under this system, particularly through free access to the meteorological satellite data of Japan, the USA, China, the Russian Federation and Europe.