**WMO Survey on existing capabilities to produce National Climate Monitoring Products**

The purpose of this questionnaire is to assess existing capabilities of each WMO-affiliated National Hydrological or Meteorological Service to produce six national climate monitoring products (NCMPs) at the national or regional level, as recommended by the WMO Expert Team on National Climate Monitoring Products (ET-NCMP). The recommended NCMPs are as follows:

1. Monthly area-average mean temperature anomaly time series (°C)
2. Monthly area-average total precipitation anomaly time series (% of average)
3. Monthly area-average standardized precipitation index
4. Monthly area-average percent of days with daily maximum temperature above the 90th percentile (%)
5. Monthly area-average percent of days with daily minimum temperature below the 10th percentile (%)
6. Significant climate and weather events relevant to the area or region.

These NCMPs serve to generate consistent and comparable analyses for various national and regional assessments, including the annual *WMO Statement on the status of the Climate*. The ET-NCMP is currently developing specifications and computer software for producing these NCMPs.

The ET-NCMP also aims to determine a focal point for each country who will accept responsibility for producing and disseminating these NCMPs for their respective country or region. The focal point will:

* collaborate with ET-NCMP to develop methodologies for producing the NCMPs;
* compute and prepare a monthly analysis on the current state of the climate for their country/region using the computer software developed for the NCMPs; and
* disseminate the prepared analysis and NCMPs to WMO and other institutions in a specified timeframe.

We are kindly inviting you to complete this questionnaire and send to xxxx@xxxx.xx by *day month year*.

For more information on Commission of Climatology OPACE 2 Expert Team on National Climate Monitoring Products, please visit <http://www.metoffice.gov.uk/hadobs/opace2_tt_ncmp/>.

We greatly appreciate your time. Thank you.

**Contact information:**

Name:

Position:

Institution:

Address:

Country:

Email address:

**Questions**

Please respond to as many questions as possible and circle as many answers as needed.

**Monthly area-average mean temperature anomaly time series (°C)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. Do you produce an area-average mean temperature anomaly time series for your region/country? | a) yes | b) no |  |  |
| 2. If yes, for which region/countries?  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 3. For which period of time? | a) 1980- today | b) 1950-today | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 4. For which time resolution? | a) monthly | b) seasonal | c) annual |  |
| 5. What are the observations used? | a) daily max temperature | b) daily min temperature | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 6. # stations with historical data (≥ 30 years) used | a) ≤ 10 | b) ≤ 20 | c) ≤ 100 | d) > 100 |
| 7. # stations with recent data (< 30 years) used | a) ≤ 10 | b) ≤ 20 | c) ≤ 100 | d) > 100 |
| 8. # stations with real-time data (past month) used | a) ≤ 10 | b) ≤ 20 | c) ≤ 100 | d) > 100 |
| 9. What is the reference period? | a) 1971-2000 | b) 1981-2010 | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 10. What are the sources of data? | a) meteorological office | b) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 11. What are the observing networks? | a) airports | b) volunteers | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 12. What are the types of stations? | a) manned | b) automated | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 13. How often is this product updated? | a) monthly | b) seasonal | c) annual |  |
| 14. Where is this product published? Please provide name of the reports/scientific articles and http/ftp addresses. | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 15. Comments? | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Monthly area-average total precipitation anomaly time series (% of average)**

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| --- | --- | --- | --- | --- |
| 16. Do you produce an area-average total precipitation anomaly time series for your region/country? | a) yes | b) no |  |  |
| 17. If yes, for which region/countries?  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 18. For which period of time? | a) 1980- today | b) 1950-today | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 19. For which time resolution? | a) monthly | b) seasonal | c) annual |  |
| 20. What are the observations used? | a) daily precipitation | b) daily rain and snow | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 21. # stations with historical data (≥ 30 years) used | a) ≤ 10 | b) ≤ 20 | c) ≤ 100 | d) > 100 |
| 22. # stations with recent data (< 30 years) used | a) ≤ 10 | b) ≤ 20 | c) ≤ 100 | d) > 100 |
| 23. # stations with real-time data (past month) used | a) ≤ 10 | b) ≤ 20 | c) ≤ 100 | d) > 100 |
| 24. What is the reference period? | a) 1971-2000 | b) 1981-2010 | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 25. What are the sources of data? | a) meteorological office | b) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 26. What are the observing networks? | a) airports | b) volunteers | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 27. What are the types of stations? | a) manned | b) automated | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 28. How often is this product updated? | a) monthly | b) seasonal | c) annual |  |
| 29. Where is this product published? Please provide name of the reports/scientific articles and http/ftp addresses. | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 30. Comments? | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Monthly area-average total standardized precipitation index**

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| --- | --- | --- | --- | --- |
| 31. Do you produce an area-average total standardized precipitation index for your region/country? | a) yes | b) no |  |  |
| 32. If yes, for which region/countries?  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 33. For which period of time? | a) 1980- today | b) 1950-today | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 34. For which time resolution? | a) monthly | b) seasonal | c) annual |  |
| 35. What are the observations used? | a) daily precipitation | b) daily rain and snow | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 36. How often is this product updated? | a) monthly | b) seasonal | c) annual |  |
| 37. Where is this product published? Please provide name of the reports/scientific articles and http/ftp addresses. | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 38. Comments? | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Monthly area-average percent of days with daily maximum temperature above the 90th percentile and**

**Monthly area-average percent of days with daily minimum temperature below the 10th percentile (%)**

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| --- | --- | --- | --- | --- |
| 39. Do you produce an area-average percent of days with daily maximum temperature above the 90th percentile for your region/country? | a) yes | b) no |  |  |
| 40. Do you produce an area-average percent of days with daily minimum temperature below the 10th percentile for your region/country? | a) yes | b) no |  |  |
| 41. If yes, for which region/countries?  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 42. For which period of time? | a) 1980- today | b) 1950-today | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 43. For which time resolution? | a) monthly | b) seasonal | c) annual |  |
| 44. How often is this product updated? | a) monthly | b) seasonal | c) annual |  |
| 45. Where is this product published? Please provide name of the reports/scientific articles and http/ftp addresses. | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 46. Comments? | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Significant climate and weather events relevant to the area or region**

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| --- | --- | --- | --- | --- |
| 47. Do you produce a report on significant climate and weather events for your region/country? | a) yes | b) no |  |  |
| 48. If yes, for which region/countries?  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 49. For which period of time? | a) 1980- today | b) 1950-today | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 50. For which time resolution? | a) monthly | b) seasonal | c) annual |  |
| 51. For which climate and weather events? | a) heat waves | b) cold waves | c) flood | - |
|  | d) drought | e) snow storms | f) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 52. How often is this product updated? | a) monthly | b) seasonal | c) annual |  |
| 53. Where is this product published? Please provide name of the reports/scientific articles and http/ftp addresses. | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 54. Comments? | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Computing environment**

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| --- | --- | --- | --- | --- |
| 55. Which computing environment are you using to produce your climate monitoring products? | a) PC MS Windows | b) Unix/Linux | c) other : please specify \_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 56. Do you quality check your data? | a) yes | b) no |  |  |
| 57. If yes, which computer programs do you use to quality check your data? | a) in-house developed | b) RClimdex | c) other : please specify \_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 58. Do you homogenize your data? | a) yes | b) no |  | - |
| 59. If yes, which computer programs do you use to homogenize your data? | a) in-house developed | b) RHTests | c) other: please specify \_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 60. Do you grid your data? | a) yes | b) no |  |  |
| 61. If yes, which method do you use to grid your data? | a) in-house developed | b) Gandin’s optimal interpolation | c) other : please specify \_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 62. Comments? | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Resources**

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| --- | --- | --- | --- | --- |
| 63. How many people (full time employee) are dedicated to operational climate monitoring? | \_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| 64. How many people are dedicated to climate monitoring research? | \_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| 65. Have your data, products and services been developed by your agency alone or in collaboration with others (WMO etc.)? | a) yes | b) no | c) if no, please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 66. In which area would your agency likely require assistance in implementing WMO specifications for NCMPs? | a) computing | b) scientific guidance | c) training | d) Other: please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 67. Do you have any comments or suggestions to improve the preparation of NCMPs? | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |

Thank you for your time!