

Survey Report on the Usage of Different Media by National Meteorological and Hydrological Services for PWS Delivery

2015



**World
Meteorological
Organization**

Weather · Climate · Water

The main forms of communication used by most meteorological services are telephone, radio, TV and Internet. The information that is communicated most using these mediums is public forecasts and warnings

Acknowledgement

Survey development by: Mr Peter Kreft and Mr. Ramon Oosterkamp with contributions from members of Commission for Basic Systems (CBS) OPAG on Public Weather Services (PWS) Expert Team on Communication, Outreach and Public Education Aspects of PWS Delivery (CBS/OPAG-PWS ET/COPE)

Survey analysis by: Mr. Ramon Oosterkamp

Report compiled by: Ms Haleh Kootval and Mr Samuel Muchemi

Background

During the “Meeting of the Commission for Basic Systems Open Programme Area Group on Public Weather Services (PWS) Expert Team on Communication, Outreach and Public Education Aspects of PWS Delivery (CBS/OPAG-PWS ET/COPE)” (Nanjing, China, 28 October - 1 November 2013) the Expert Team on Communication Outreach and Public Education Aspects (ET/COPE) agreed to complete the development of an on-line survey on the usage of different Media for public weather services delivery, which had been initiated by the expert Team. The purpose of the survey was to better understand the usage of different media for the delivery of forecasts, warnings and other information. Included in the survey were questions that identify the five (5) preferred channels for providing PWS products and services and to establish what roadblocks might be affecting the use of newer systems and technologies. The development of the survey had been led by Mr Peter Kreft (former member of ET-COPE) and was completed by Mr. Ramon Oosterkamp with contribution from other team members.



Fig. 1: *Members of the Expert Team on Communication Outreach and Public education Aspects (CBS OPAG-PWS ET/COPE) during their Meeting (Nanjing, China, 28 October - 1 November 2013)*

Executive Summary

The survey questionnaire was sent to 142 national PWS Focal Points. There were 70 respondents to the ET-COPE initiated WMO PWS survey on the usage of different media for PWS delivery. The percentage of the respondents who use each of the communication tools is shown in Table One below (Section 2: Reports). It is worth noting that this is not a reflection of how many people are reached using each communication tool (for example a website could reach millions, but a phone call just one person), but rather how each NMS disseminates its products.

The main forms of communication used by most respondents are direct telephone calls, radio stations and websites. The information that is being communicated most using these mediums are public forecasts and warnings, however seasonal and climate forecasts, forecasts for specialised users, and public education material are also provided via this format by the majority of respondents. Air quality information is provided less frequently.

Direct emails to specialised users are used by most respondents, especially to convey warnings. Automated emails are used less often, and for providing a broader suite of information. Faxes are still used by many respondents, mainly for public forecasts and weather warnings.

Facebook and Twitter are now used by almost half the respondents.

Warnings are disseminated widely across the range of communication tools available including official websites, Facebook, Twitter, telephone, fax, SMS, email, newspapers, smartphones and tablets.

Public education material is distributed using various tools also, including websites, Facebook, radio, newspapers and newsletters.

The survey questionnaire and the survey analysis results in Arabic, English, French, Russian and Spanish are accessible online at the following Web link:

<https://www.wmo.int/pages/prog/amp/pwsp/surveys.htm>

1. Participation

There were 70 out of 142 respondent national PWS Focal Points to the survey; a 49% return. (The list of countries that responded to the survey is attached to this report as Annex 1). There were some notable absences from nations that are normally very active in WMO activities and initiatives.

2. Results

	Communication tool	Use (%)	Do not use (%)
1.	Direct calls	96	4
2.	Other independent radio station	93	7
3.	Own official website	92	8
4.	Email to specialised users	89	11
5.	Faxes	79	21
6.	Other independent website	63	37
7.	Automated email	62	38
8.	Presentations for other TV channels	61	39
9.	Newspaper/newsletters	58	42
10.	Public displays	54	46
11.	Pre-recorded telephone service	51	49
12.	Facebook	47	53
13.	Call centre	38	62
14.	Twitter	36	64
15.	SMS	36	64
16.	Smartphone/tablet	36	64
17.	CAP	30	70
18.	YouTube (or similar)	17	83
19.	Own TV channel	8	92
20.	RANET	6	94
21.	Own radio station	5	95

Table 1: *Use of communication tools by respondents*

Internet

Official websites are operated by 92% of the respondents; nearly all of which provide public forecasts and warnings. The majority of the websites also provide seasonal and climate forecasts, forecasts for specialised users, and public education material. Around a third of the websites provide air quality information.

	Always	Frequently	Sometimes	Never	Total
Public forecasts	96.88%	1.56%	1.56%	0.00%	
	62	1	1	0	64
Warnings (including warnings of floods, sand and dust storms etc.)	78.13%	9.38%	7.81%	4.69%	
	50	6	5	3	64
Seasonal and climate forecasts	61.29%	8.06%	14.52%	16.13%	
	38	5	9	10	62
Forecasts for specialized users	50.00%	8.33%	13.33%	28.33%	
	30	5	8	17	60
Air quality information	20.97%	1.61%	12.90%	64.52%	
	13	1	8	40	62
Public education material	31.75%	19.05%	30.16%	19.05%	
	20	12	19	12	63

Table 2: Information provided on the official websites of NMHSs

Other independent websites display information produced by 63% of the respondents. Most of this information is public forecasts and warnings. The majority of websites also provide seasonal and climate forecasts, forecasts for specialised users, and public education material. Around a third provide air quality information.



YouTube

YouTube (or similar channels) are used for broadcasting by just 17% of the respondents. The information contained in the broadcasts is predominantly public forecasts, weather/climate related stories, and public education material. Seasonal and climate forecasts, forecasts for specialised users, and air quality information are provided less frequently.

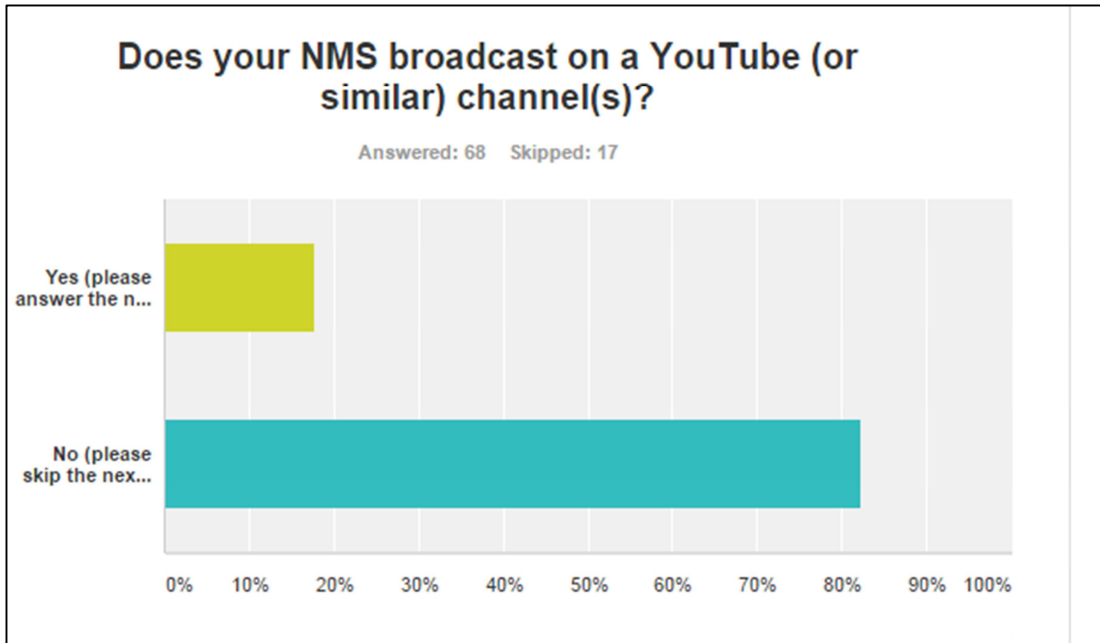


Fig 2: Graph showing that only 17% of respondent NMSs broadcast on YouTube or similar channels



Facebook (or similar) pages are owned and posted on by 47% of the respondents. Warnings and public forecasts are posted nearly all the time, and public education material often. Seasonal and climate forecasts, and forecasts for specialised users are posted around half the time; air quality less so.

	Always	Frequently	Sometimes	Never	Total
Public forecasts	55.17%	20.69%	17.24%	6.90%	
	16	6	5	2	29
Warnings (including warnings of floods, sand and dust storms etc.)	54.84%	19.35%	25.81%	0.00%	
	17	6	8	0	31
Seasonal and climate forecasts	20.00%	10.00%	30.00%	40.00%	
	6	3	9	12	30
Forecasts for specialised users	3.85%	11.54%	30.77%	53.85%	
	1	3	8	14	26
Air quality information	0.00%	0.00%	22.22%	77.78%	
	0	0	6	21	27
Public education material	10.00%	36.67%	26.67%	26.67%	
	3	11	8	8	30

Table 2: Information provided through Facebook by NMHSs



Twitter (or similar) pages are used by 36% of respondents. Again warnings and public forecasts are the main focus of the tweets, and seasonal and climate forecasts, forecasts for specialised users, and air quality are tweeted on less frequently

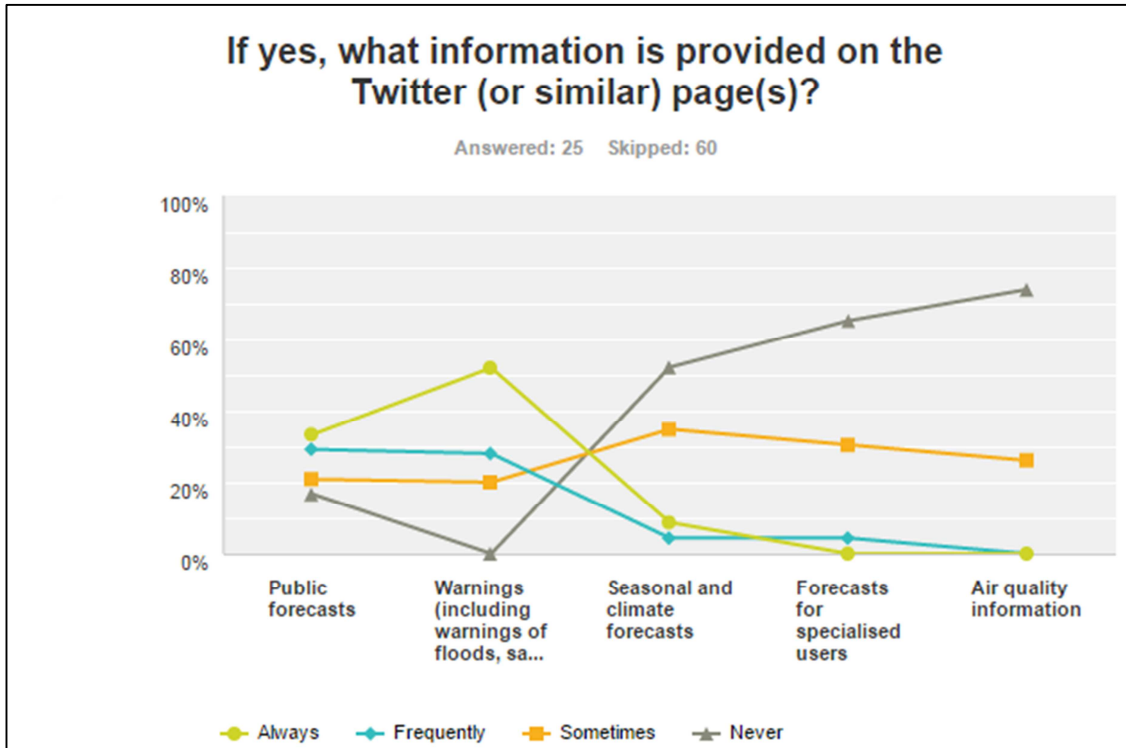


Fig 3: Information provided through Twitter by NMHSs

Radio



Weather radio stations are operated by 5% of the respondents, covering a range of information including forecasts and warnings. Conversely, information is provided to independent radio stations by 93% of the respondents (See Fig. 2); all of which provide public forecasts and warnings. The majority also provide the radio stations with seasonal and climate forecasts, forecasts for specialised users, and public education material; air quality information is provided less often.

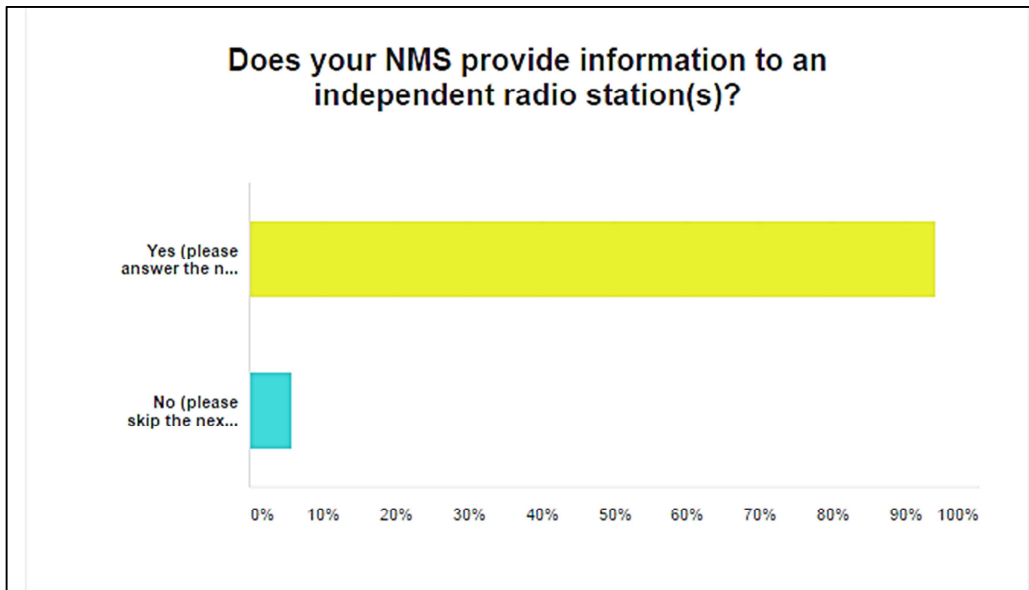


Fig 2: Graph showing NMSs that provide information to independent radio stations



Kenya Mollen of Uganda Meteorological Service, TV weather presenter for Uganda Broadcasting Corporation (UBC)

Television

Television channels are operated by 8% of the respondents. Ready-to-air TV weather presentations are provided to television channels by 61% of the respondents while 52% of the respondents provide graphics for use in weather presentations prepared at the TV stations. . Most of the information provided is public forecasts and warnings; and seasonal and climate forecasts. Forecasts for specialised users are also provided but to a lesser extent.

TV weather studios are owned by 40% of the respondents; which are mostly well equipped and functional with dedicated presenters performing well most of the time. Some respondents commented on a need to update equipment, as well as train younger presenters.

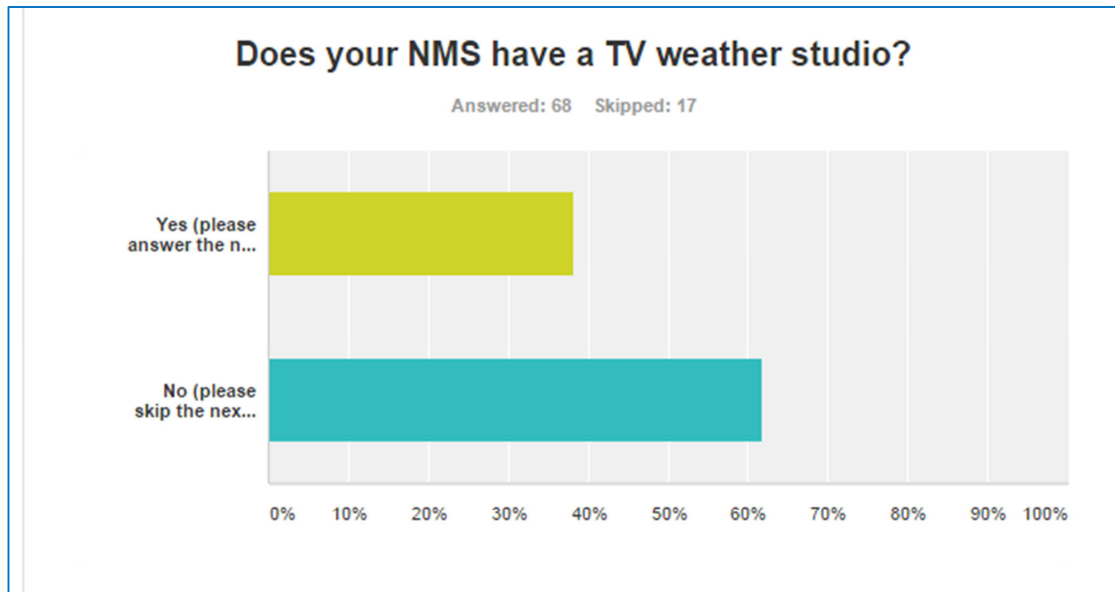


Fig 3: Graph showing percentage of respondent NMHSs that possess a weather studio

Telephone

Around half of the respondents provide a pre-recorded telephone service, predominantly for public forecasts and warnings. Seasonal forecasts, forecasts for specialised users, and air quality information are provided on a less frequent basis.

Call centres are operated by 38% of the respondents, predominantly providing information on public forecasts and warnings, but also seasonal forecasts, forecasts for specialised users, and air quality information on a less frequent basis (See Fig. 4) below.



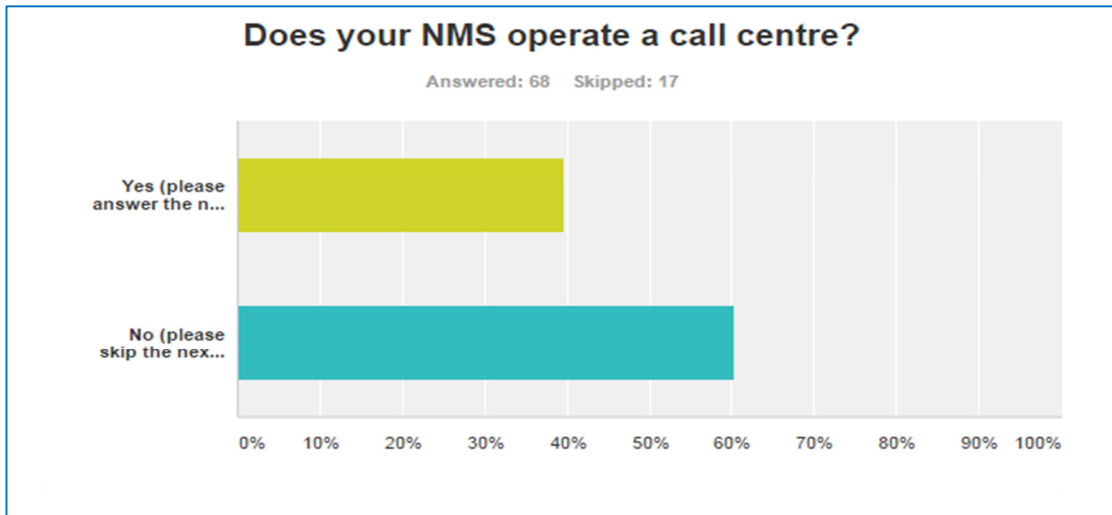


Fig 4: Graph showing the percentage of NMHSs that operate a telephone call centre

Direct calls from users are taken by nearly all of the respondents (96%). These are predominantly seeking public forecasts and warnings, but information on seasonal forecasts, and forecasts for specialised users, are also provided by most of the respondents; air quality information is provided on a less frequent basis.

Email

Automated distribution of email to a large group of users is provided by 62% of respondents; predominantly for public forecasts and warnings, with seasonal forecasts, and forecasts for specialised users provided less often, and air quality information only occasionally.

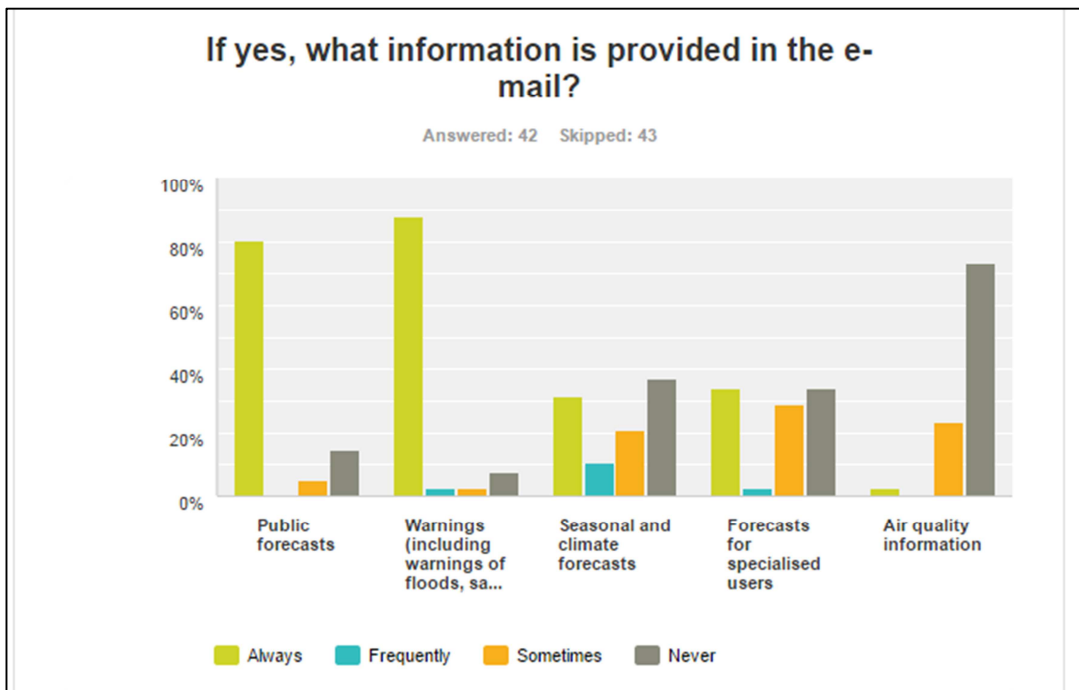


Fig 5: Graph showing the information provided through e-mail by NMHSs

Direct emails to small groups of specialised users (such as hydrology, Civil Defence and Emergency Management) are provided by 89% of respondents. Warnings were the most frequent type of information provided, but public forecasts were also provided by most respondents. Seasonal and climate forecasts, and forecasts for specialised users were provided by the majority of respondents; air quality and educational material less so.

SMS

SMS is used by 36% of respondents; mostly to provide warnings, but also public forecasts on a less frequent basis. A subscription to SMS service is run by 20% of the respondents; mostly for warning and public forecasts, and less frequently for forecasts for specialised users.

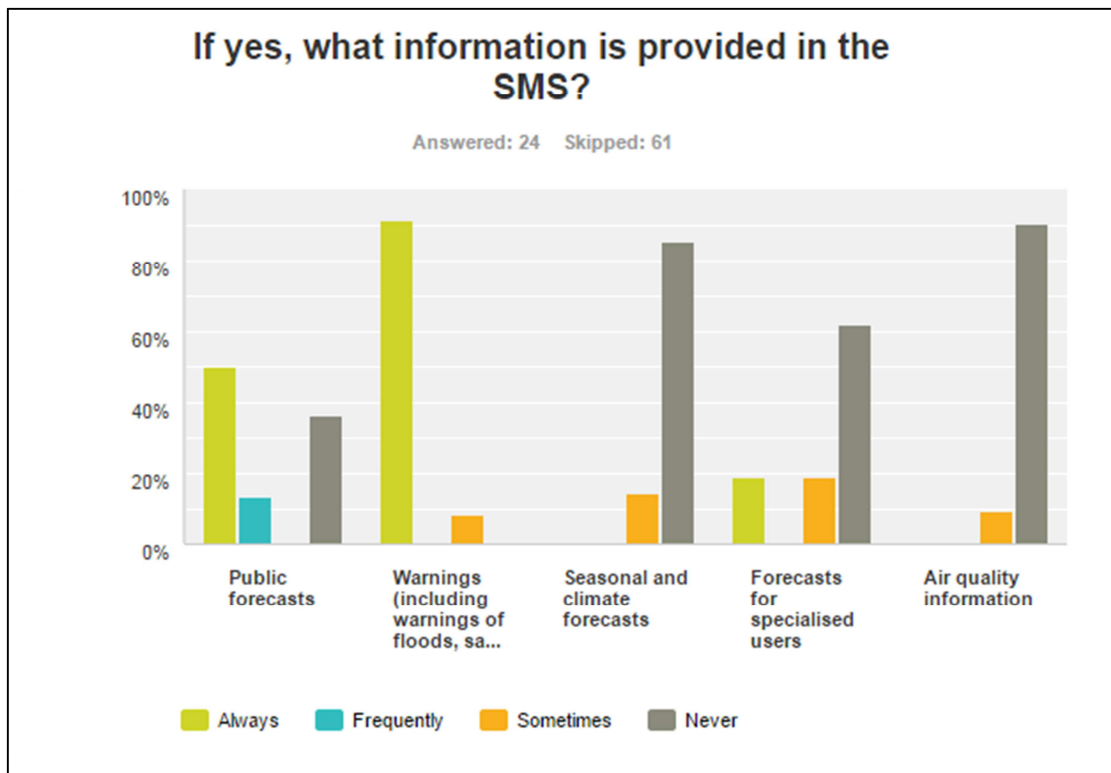


Fig 6: Graph showing the information provided through SMS by NMHSs

Smartphone/tablet

Smartphone/tablets applications or widgets are provided by 36% of the respondents; mostly for warnings and public forecasts, and less frequently for forecasts for specialised users.

Public Displays

Data is provided to dedicated displays at tourism centres, local government offices, airports etc. by 54% of respondents. The information is predominantly public forecasts and warnings; seasonal and climate forecasts and air quality information is provided occasionally.

Faxes

Faxes are still sent by 79% of respondents; public forecasts and warnings are the main information provided. Seasonal and climate forecasts, and forecasts for specialised users are also provided by the majority of respondents; air quality less so.

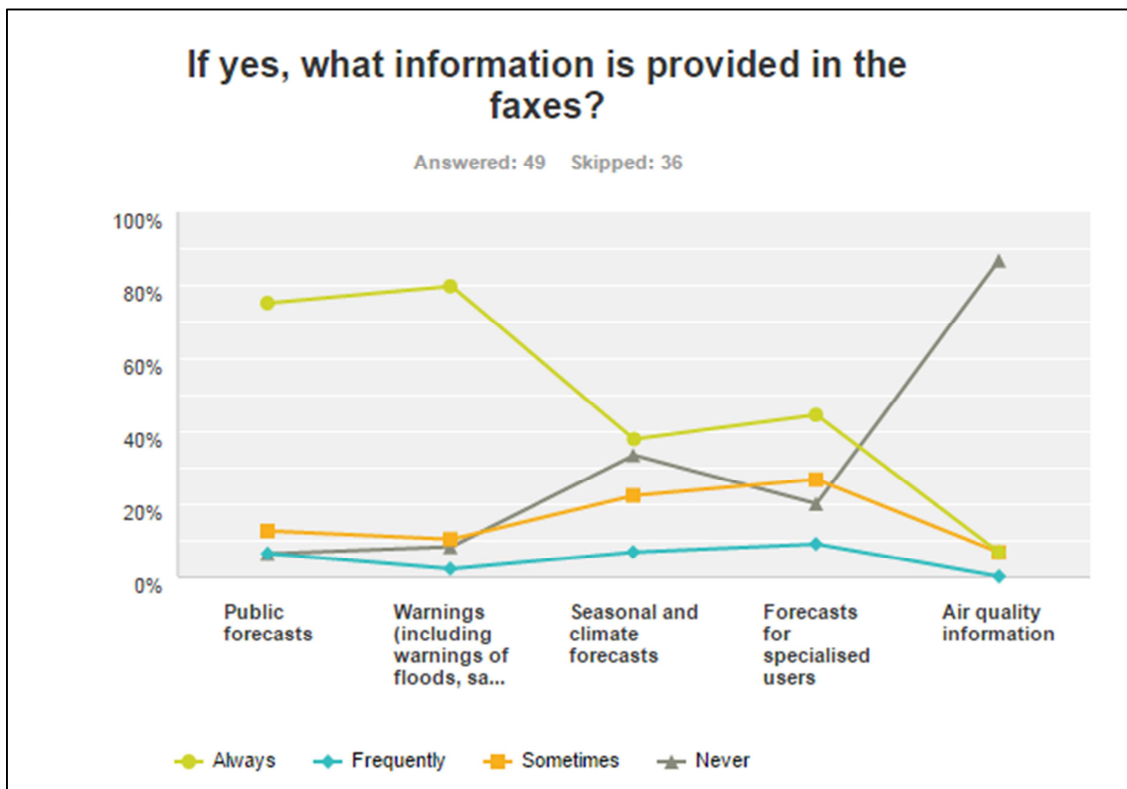


Fig 7: Graph showing the information provided through Faxes by NMHSs. Pulic Forecasts and warnings are the most provided information



RANET

RANET (radio internet) is operated by just 6% of respondents; mostly to provide public forecasts, warnings and seasonal climate forecasts, but some users also provide forecasts for specialised users, air quality information, and public education material in this medium.

Newspaper/newsletters

Newspapers and newsletter are used by 58% of respondents. These are mostly used to provide public forecasts, warnings and seasonal climate forecasts, but the majority of respondents also use this format as a vehicle for public education material. Forecasts for specialised users and air quality information are provided in this format less often.

CAP

The Common Alerting Protocol (CAP) is used by 30% of respondents. The majority of users link CAP to websites, radio, TV, fax and social media; less to Siren.

Concluding Remarks

1. The survey demonstrated that most respondent countries use more traditional methods of disseminating weather information with telephone, radio, TV and Internet being the most popular. Emerging channels of communication within the social media segment such as Facebook, Twitter and YouTube, which have the potential to reach large numbers of users are currently lagging behind faxes, newspapers/newsletters, and public displays, in use by NMHSs. Given the potential impact that increased usage of such emerging channels would bring, the PWS programme will make efforts in providing awareness and training to NMHSs to enable them adopt the new emerging channels of communication.
2. As WMO continues to assist NMHSs in using the traditional channels of communication, there should be a special emphasis on promoting the least popular methodologies including the Common Alerting Protocol (CAP), RANET and SMSs.
3. The information that is communicated most using all mediums is public forecasts and warnings. Seasonal and climate forecasts, and air quality information are not communicated as often as is potentially possible. This is an indication that there is a need to create awareness in NMHSs to increase their delivery of services in climate and air quality areas.

List of countries that responded to the survey

1.	Angola
2.	Argentina
3.	Armenia
4.	Austria
5.	Bahrain
6.	Brazil
7.	British Caribbean Territories
8.	Burundi
9.	Croatia
10.	Cyprus
11.	Dominica
12.	Finland
13.	Ghana
14.	Greece
15.	Guyana
16.	Hungary
17.	Iceland
18.	India
19.	Iraq
20.	Ireland
21.	Italy
22.	Japan
23.	Kazakhstan
24.	Kenya
25.	Latvia
26.	Maldives
27.	Malta
28.	Netherlands (the)
29.	New Zealand
30.	Nigeria
31.	Romania
32.	Russian Federation
33.	Saint Lucia
34.	Saudi Arabia
35.	Slovakia
36.	Slovenia
37.	Sri Lanka
38.	Sudan
39.	Sweden
40.	Switzerland
41.	The former Yugoslav Republic of Macedonia
42.	Trinidad and Tobago
43.	United Republic of Tanzania
44.	Uzbekistan
45.	Viet Nam
46.	Botswana
47.	Cabo Verde
48.	Germany
49.	Kiribati
50.	Malaysia
51.	Mauritius
52.	Myanmar
53.	Serbia
54.	Seychelles
55.	United Arab Emirates
56.	United Kingdom of Great Britain and Northern Ireland
57.	Hong Kong, China
58.	Zimbabwe

59.	Bangladesh
60.	Jordan
61.	Poland
62.	Yemen
63.	Comoros
64.	Côte d'Ivoire

65.	Guinea
66.	Mauritania
67.	Tunisia
68.	Ukraine
69.	El Salvador
70.	Spain

WMO Public Weather Services (PWS) Focal Points survey on the usage of different Media for PWS delivery

2014

This WMO Public Weather Services (PWS) Focal Point Survey is a short survey, targeted at the National Meteorological and Hydrological Services (NMHS) PWS Focal Points, and your participation is highly valued.

The main responsibility of NMHSs is to ensure the safety of life, the protection of property and the well-being of the public they serve. PWS delivery depends on efficient and effective communication with users. Recent rapid development in communications technology provide NMHSs with numerous and diverse communication options.

The purpose of this survey is to ascertain the status on how NMHSs use media for delivering public weather services and gathering feedback, so that WMO, through the secretariat and regional association subsidiary bodies, can assist NMHSs in using new communications channels. For this to be a success, your input is essential.

Thank you for your participation.

1. From the drop-down list below, please select the WMO Member on whose behalf you are completing this survey

2. Does your National Meteorological or Hydrological Service (NMS) operate official website(s)?

Yes (please answer the next question)

No (please skip the next question)

3. If yes, what information is provided on the official website(s)?

Always Frequently Sometimes Never

Public forecasts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
------------------	--------------------------	--------------------------	--------------------------	-------------------------------------

Warnings (including warnings of floods, sand and dust storms etc.)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Seasonal and climate forecasts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Forecasts for specialised users	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Air quality information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public education material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

*

4. Do other websites, independent of your NMS, display information produced by you?

- Yes (please answer the next question)
- No (please skip the next question)

5. If yes, what information do they display on their websites?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seasonal and climate forecasts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forecasts for specialised users	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air quality information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public education material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Does your NMS broadcast on a YouTube (or similar) channel(s)?

- Yes (please answer the next question)

No (please skip the next question)

7. If yes, what information is provided on the YouTube (or similar) channel(s)?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weather/climate related news stories	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Forecasts for specialised users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Air quality information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public education material	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*

8. Does your NMS post to its own Facebook (or similar) page(s)?

Yes (please answer the next question)

No (please skip the next question)

9. If yes, what information is provided on the Facebook (or similar) page(s)?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Forecasts for specialised users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Air quality information	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Public education material	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

*

10. Does your NMS tweet on a Twitter (or similar) page(s)?

Yes (please answer the next question)

No (please skip the next question)

11. If yes, what information is provided on the Twitter (or similar) page(s)?

	Always	Frequently	Sometimes	Never
Public forecasts	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Forecasts for specialised users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Air quality information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>

12. Does your NMS operate its own weather radio station(s)?

Yes (please answer the next question)

No (please skip the next question)

13. If yes, what information is provided on the weather radio station(s)?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Forecasts for specialised users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Air quality information	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Public education material

*

14. Does your NMS provide information to an independent radio station(s)?

Yes (please answer the next question)

No (please skip the next question)

15. If yes, what information is provided to the independent radio station(s)?

	Always	Frequently	Sometimes	Never
Public forecasts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seasonal and climate forecasts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forecasts for specialised users	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air quality information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public education material	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Does your NMS operate a television weather channel(s)?

Yes (please answer the next question)

No (please skip the next question)

17. If yes, what information is provided on the television weather channel(s)?

	Always	Frequently	Sometimes	Never
Public forecasts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seasonal and climate forecasts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forecasts for specialised users	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Air quality information	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Public education material	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

18. Does your NMS provide ready-to-air TV weather presentations to independent television channels to broadcast the presentation?

- Yes (please answer the next question)
- No (please skip the next question)

19. If yes, what information is provided to the independent television channels?

	Always	Frequently	Sometimes	Never
Public forecasts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Weather warnings (including warnings of floods, sand and dust storms etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Seasonal and climate forecasts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Forecasts for specialised users	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

20. Does your NMS provide weather graphics for use in weather presentation by presenters at independent television channels that broadcast the information?

- Yes (please answer the next question)
- No (please skip the next question)

21. If yes, what information is provided to the independent television channels?

	Always	Frequently	Sometimes	Never
Public forecasts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Warnings (including warnings of floods, sand, dust storms etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Seasonal and climate forecasts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Forecasts for specialised users	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

22. Does your NMS provide weather forecasts and/or weather observational data to independent television channels for presentation?

Yes (please answer the next question)

No (please skip the next question)

23. If yes, what information is provided to the independent television channels?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Warnings (including warnings of floods, sand, dust storms etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Forecasts for specialised users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Air quality information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

*

24. Does your NMS have a TV weather studio?

Yes (please answer the next question)

No (please skip the next question)

25. If yes, how would you rate the performance of the TV weather studio of your NMS?

	Always	Frequently	Sometimes	Never
The studio is well equipped and functional	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Presenters are performing well	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Comment

26. Does your NMS provide a pre-recorded telephone forecast service?

Yes (please answer the next question)

No (please skip the next question)

27. If yes, what information is provided on the telephone forecast service?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Forecasts for specialised users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Air quality information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

*

28. Does your NMS operate a call centre?

Yes (please answer the next question)

No (please skip the next question)

29. If yes, what information is provided through the call centre?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Forecasts for specialised users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Air quality information	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

*

30. Does your NMS take direct calls from users?

Yes (please answer the next question)

No (please skip the next question)

31. If yes, what information is provided through the direct calls?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Forecasts for specialised users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Air quality information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

32. Does your NMS provide automated distribution of e-mail to a large group of users?

Yes (please answer the next question)

No (please skip the next question)

33. If yes, what information is provided in the e-mail?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Forecasts for specialised users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Air quality information	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

34. Does your NMS provide direct e-mail to a small group(s) of specialized users (such as hydrology, Civil Defence and Emergency Management (CDEM), etc.)?

Yes (please answer the next question)

No (please skip the next question)

35. If yes, what information is provided in the e-mail?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Forecasts for specialised users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Air quality information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Education material	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>

36. Does your NMS push SMS?

Yes (please answer the next question)

No (please skip the next question)

37. If yes, what information is provided in the SMS?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Forecasts for specialised users	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Air quality information	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

38. Does your NMS have a subscription SMS service?

- Yes (please answer the next question)
- No (please skip the next question)

39. If yes, what information is provided in the SMS?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Forecasts for specialised users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Air quality information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

42. Does your NMS provide data to dedicated displays at tourism centres, local government offices, airports, etc.?

- Yes (please answer the next question)
- No (please skip the next question)

43. If yes, what information is provided on the displays?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Weather warnings (including warnings of floods, sand and dust storms etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Air quality information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

44. Does your NMS send faxes?

- Yes (please answer the next question)

No (please skip the next question)

45. If yes, what information is provided in the faxes?

	Always	Frequently	Sometimes	Never
Public forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Warnings (including warnings of floods, sand and dust storms etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seasonal and climate forecasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Forecasts for specialised users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Air quality information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>