

Communications between the NMHS and Media and Civil Protection in Croatia

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Introduction

For many years, cooperation of the National Meteorological and Hydrological Service (NMHS) with the media and the National Protection and Rescue Directorate (NPRD) - which the Civil Defence is one part - was at a very high level. The situation partially changed with the appearance of private weather companies, along with the strengthening role of the internet and the increasing number of weather forecasts on it. The NMHS maintains a significant role, although it is no longer the only source of meteorological information, especially not of the weather forecast itself, which is particularly evident when following the press, radio and television. However, for the NPRD, NMHS is still a "single voice" for forecasts and warnings, especially for dangerous weather phenomena. Also, television weather forecasts – especially those prepared and presented by NMHS meteorologists – are amongst the most popular shows on television.

The Structure of the National Meteorological and Hydrological Service

The NMHS of Croatia is the fundamental institution for Meteorology and Hydrology in the country. It was founded by decree of the Government of the People's Republic of Croatia (PRC) on 27th of August 1947. Part of its staff (fifty employees) and equipment was taken from the Geophysical Institute and Ministry of Construction of PRC, which conducted some services in the fields of meteorology and hydrology (including observations and weather forecasts). Until Croatia became an independent state (in 1991), the NMHS operated as republic institution, and after that as state organization. Since 1992, Croatia has been a member of the World Meteorological Organisation (WMO), and the NMHS performs international cooperation on behalf of the state. Over the years, as required by the growing range and amount of work, the number of

employees has increased to reach a staff of more than 440. The Institute's internal organization and its scope have been constantly changing and adapting to the increasingly demanding set of requirements for hydrological and meteorological services to meet the demands of the economy, traffic and the environment.

For many people, the most recognisable part of the NMHS is the Weather Forecast & Analysis Division (WFAD). This consists of the Department of Maritime Meteorological Centre in Split, a branch office in Rijeka which Specializes in Maritime Forecasts, and the Department of Weather Analysis and Forecasting in Zagreb.

WFAD issues a range of products in its area of expertise – nowcasting, short-range weather forecasts and medium range forecasts. There are also monthly forecasts (issued twice per month, on Tuesdays) and seasonal forecasts (once per month, issued around the 15th). For the general public there are forecasts for radio, TV, newspapers, web (including Facebook), SMS, MMS, and a telephone service. There are also special customers like civil services, fire departments, agriculture, roads, engineering, mine-disposal, water and power management and tourism.

Communication to the Media

Forecasts from WFAD appear daily in various media, from traditional media, such as newspapers, radio and television to newer media such as SMS and MMS messaging, web sites and Facebook. In 2010 the media accounted for about 52% of direct revenue. The largest part of this was from TV (60%), and the rest in equal proportion came from radio, newspapers and the web.

The NMHS on the Web

NMHS has had a presence on the web almost from its very beginnings in Croatia, in the first half of

the 1990s, and today has many domains: www.meteo.hr, www.klima.hr, www.prognoza.hr, www.vrijeme.hr, as well as forms without the www prefix. Numerous daily meteorological data – both observed and forecast, appear on the site. For example, there are subjective forecasts from forecasters in both textual and graphic form for the current and the next day for Croatia - and especially the capital Zagreb – as well as text forecasts for mariners. Also, there is a 3 day outlook in textual form, written by a forecaster. In addition to these types of subjective forecast, there are also objective forecasts - direct model output of models in various forms – for many locations in Croatia and for the country as a whole. Particular attention is paid to the warnings in the classic, text format in the Croatian language and textual-pictorial form in the Meteoalarm system. All warnings are subjective, written by a forecaster.

Newspapers

NMHS has several decades of experience in forecasting in the newspapers, since the days when there were only a few, to the newspaper boom a few years ago, until today, when sales are declining. NMHS does not prepare final products for newspapers; all that is required are some elements of weather reports, which are sent to the newsroom ready to be made suitable for printing.

According to market research between October and December 2010, which was conducted and published by De facto production company, there are 13 best-selling newspapers in Croatia over the last 12 years. Of these, 3 do not have forecasts. Of the remaining 10, 5 co-operate with NMHS, while the other 5 take forecasts from private meteorological companies. Counting the average number of daily newspapers readers in Croatia, the daily forecast reaches about 1/3 of readers. It is important to note that the most widely read and cheapest newspapers account for 44% of respondents to the survey, and these newspapers have forecasts from a private company. It is interesting to mention that 51% of readers older than 12 years at least read a newspaper, and that 22% of respondents do not read a daily newspaper at all.

Radio

Co-operation between the NMHS and radio also has a long life. Forecasts have been read by radio newsreaders since 1953, and expanded upon since 1966, when discussions about weather and fore-

casting started. Today many forms of co-operation and transfer of meteorological information exist – newsreaders reading forecasts, interviews with forecasters, or forecasters reading forecast. In the meantime, numerous radio stations have appeared, at the national and local levels, especially since 1995. According to research results and the radio market (also by De facto production, conducted between July and September 2011), 12 radio stations in Croatia have the most listeners. Of these 12, NMHS works with 6, which cover about 45% of respondents, of which the two most listened cover about 27% of the market.

The forecaster now has 8-10 live radio broadcasts, depending on the day of the week, and 7 pre-recorded forecasts are broadcast on different stations throughout the day. Most interviews are done between 6:20 pm to 9:30 am. During these interviews – usually around 2 minutes but sometimes 10 minutes in duration – in addition to the forecast for the following days, forecasters often give a climatological summary of recent weeks, as well as forecasts for several weeks or even months in advance. If, during the daytime, an extraordinary meteorological event occurs, forecasters may appear on many different radio stations at their request, regardless of whether the stations have contracts with NMHS or not.

Television

There has been co-operation between the NMHS and Croatian Television since 1956, when meteorologists began periodic appearances. Regular forecasts in the evening began in 1968. From 1996 forecasters have also prepared reports for other television programmes at the national and local level, sometimes also appearing on them. Since 2005 the forecasters have started to work in shifts on television. Forecasters in the NMHS prepare forecasts for many media - newspapers and radio, and text and image reports for commercial television such as NOVA TV, currently the most popular station in Croatia. The forecasters at HTV prepare reports only for HTV, from 6h to 18h, every day, or in two shifts, with the first shift preparing programmes from 6h to 14h, and a second shift in the afternoon and evening. The meteorologists have a direct connection to the Intranet in the NMHS. They prepare all images and animations in the TriVis visualisation system, enter the text forecast in the iNews system and record themselves and run the visualization of images and animations.

Time		WEATHER SHOWS	Contents	Duration	How?
weekdays	Saturday/Sunday				
07.08 HTV1	None	WEATHER After News in Good morning Croatia	Real weather at 6, 7 and 8h in 12 towns Croatia today-icons,wind,temp for 7 macro regions,bio-fcst	~2'00	LIVE
07.38 ex Tuesday HTV1	None	WEATHER After News in Good morning Croatia	Croatia tomorrow - shortly Europe – MSLP with frontal systems at 12 utc Outlook – shortly	~2'00	LIVE
08.38 HTV1	None	WEATHER After News in Good morning Croatia	info – sea temp, snow depth, rain amount...	~3'00	LIVE
07.38 on Tuesday HTV1	None	Agriculture forecast After News in Good morning Croatia	agricultural forecast for 3 part of Croatia: soil temperature at 3 levels, insolation, temperature sums, interesting	~3'00	LIVE
10.09 HTV1		WEATHER DANAS (after News in 10.00)	20 microregional centres today:icons, Tmin, Tmax land/sea-shortly tomorrow	0'44	Recorded
12.13 HTV1		WEATHER (after News in 12.00) text for deaf people	Europe-cloudiness, MSLP+fronts today, Croatia afternoon – 12 regions+neighbours: icons, Tmax, marine fcst, Outlook - land/sea for next 3 days	~2'00	Recorded
14.14 HTV1	17.15 HTV1	Agriculture forecast inside Agricultural show	Agricultural forecast for Croatia for next week, for 5 macroregions: temperature soil, air, Tmin and Tmax, rain amount, interesting	~3'00	Recorded
17.14 HTV1	None	WEATHER SUTRA After afternoon News	3D flight – Croatia tomorrow – 30 places: icons and Tmax	1'00	Recorded
17.14 HTV1	None	WEATHER inside News	Croatia tomorrow – 12 regions+neighbours: icons, wind, marine forecast, Tmin, Tmax	~0'30	Recorded
18.18 HTV2	None	WEATHER inside Regional News	5 Croatian macroregions tomorrow: icons, Tmin, Tmax; outlook-shortly	~2'00	Recorded
~20.02 HTV1		WEATHER (after Main News and Sport) text for deaf people	Europe-cloudiness, MSLP+fronts today & tomorrow, Croatia tomorrow: icons, Tmin, Tmax, marine fcst, outlook - land/sea for 3 days	~2'00	Recorded
after 22.00 HTV1		WEATHER After Evening News text for deaf people	Croatia tomorrow – 12 regions+neighbours: icons, wind, marine forecast, Tmin, Tmax Outlook - land/sea for next 3 days	~1'00	Recorded

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Figure 1

LTV shows with weather information, mainly forecasts, on Croatian television each day, with contents, durations and style of broadcasting of every show

There are many TV shows with weather information and forecasts. The total amount of weather information, mainly forecasts, during week days is about 16 minutes per day, and during the weekend is about 10 minutes.

The main weather TV show, just after 20h and the main news, is one of the top 5 most watched shows on Croatian television almost every day. The shows are visible on TV and on www.hrt.hr, where there are archives of the last 20 evening shows, so the forecasts can be verified.

Communication to Civil Protection

Civil protection is a part of the National Protection and Rescue Directorate, with which NMHS has a long term co-operation. There is a strict standard operating procedure, which includes provision of general and specific forecasts and warnings of hazardous weather events, all in text form, along with forecasts for the MeteoAlarm system. The Operative Department of the National Protection and Rescue Directorate (Centre 112) has recognized MeteoAlarm as being beneficial for information on their activities and as valuable supplement to our regular cooperation.

Warnings in Croatia have long history, for sea traffic warnings have been issued by the Maritime Forecast Department since 1947 via radio (WMO standards) and also via the internet today in several languages (Croatian, English, Italian and German).

Warnings and Forecasts are also issued to the National Headquarters for Search and Rescue at Sea. Warnings of hazardous weather events are an integral part of many forecasts on radio and television, and sometimes also in newspapers.

Croatia officially joined the MeteoAlarm system (www.meteoalarm.eu) from 17th July 2009. Every day forecasters write warnings for 8 climatological areas and send them to www.meteoalarm.eu. The list of parameters that are warned about in Croatia are wind, rain, snow / ice, thunderstorms, extreme low temperatures, extreme high temperatures and fog. Integration of hydrological warnings in Croatia still not operational but is expected in the future.

Conclusions

The Meteorological and Hydrological Service of Croatia has a very strong relationship with National Protection and Rescue Directorate, including Civil Protection, and with majority of the main media in Croatia.

Cooperation between NMHS and Media and Civil Protection is very important for better understanding of weather information and warning people for hazardous weather events.