

Training Workshop on the Assessment of Socio-economic Benefits of Meteorological and Hydrological Services

Sofia, 15-17 September 2008
Case Study Summary

Vladimir M. Dimitrijević

Study on Economic Benefits of RHMS of Serbia

<ul style="list-style-type: none"> • Source (reference) 	<p>The World Bank has undertaken this study with an aim to quantitatively determine the economic value of the Republic Hydrometeorological Service of Serbia (RHMS) that could help marshal financial support and initiate well-sound decisions regarding modernization of the services and closer ties between forecasters and users at national and regional level.</p>
<ul style="list-style-type: none"> • Sector 	<p>Weather dependent sectors (agriculture, water resources management, energy production, commercial air transport, Municipal services).</p>
<ul style="list-style-type: none"> • Sub-sector 	<p>hail suppression, flood protection activities, heating plants, road management/winter service.</p>
<ul style="list-style-type: none"> • Case Study Name 	<p>Study on Economic Benefits of RHMS</p>
<ul style="list-style-type: none"> • Case Study Summary 	<p>The main objective of the study is to evaluate current economic benefits of RHMS and estimate potential additional benefits which might be gained through modernization of RHMS. The study is based on various techniques including benchmarking, assessment based on evaluation of economic losses in major weather-dependent sectors and contingent valuation (evaluation of household value of forecasts). For this purpose, local consultant teams were assembled. Findings of the study were presented at national seminar "Economic Benefits of National Hydrometeorological Service in Serbia", held in Belgrade on June 16, 2006.</p>
<ul style="list-style-type: none"> • Case Study Description 	
<ul style="list-style-type: none"> ○ Location of study 	<p>Serbia</p>
<ul style="list-style-type: none"> ○ Tools employed / analysis methods 	<ol style="list-style-type: none"> 1. SECTORAL EXPERT ASSESSMENT 2. CROSS-COUNTRY BENCHMARKING 3. Economic Value of Weather Information to Households in Serbia
<ul style="list-style-type: none"> ○ Description of application 	<p>Which sectors are particularly exposed to weather risks, and how? Which could be able to benefit from weather information in principle? Estimate economic losses due to unfavorable hydrological and meteorological events and hydrological and meteorological hazards; Significant gaps in network of RHMS; Statistics of extremes: temperature, precipitation and wind; Statistics of floods and high waters; Assessment of forecast</p>

	<p>quality; Level of automatic collection and processing of data; Meteorological archive characteristics; Research priorities; The design of the future Serbian Weather and Hydrological Services; Current and future forecasting and observing systems; Investments needed for the modernization; Assessment the current state of the National Hydro-meteorological Service (NHMS) and hydro-meteorological services (HMS); Define measures that should be taken within RHMSS to increase the economic value of hydrological and meteorological information. Evaluate current economic benefits of RHMSS and estimate potential additional benefits which might be gained through modernization of RHMSS.</p>
<ul style="list-style-type: none"> ○ Outcomes of application 	<p>Raising the level of awareness of users/stakeholders to understand the areas of activity and how to make the most efficient use of information and forecast to achieve full economic benefit.</p> <p>Modernization of RHMSS regarding the observation, telecommunication and forecasting systems for achieving the "good" level of services.</p>
<ul style="list-style-type: none"> ○ Cost/Benefits 	<p>Additional effect from bringing the state of HM services of the RHMSS to the "good" level</p> <p>5.6 Mil US\$</p> <p>Investment needed for modernization 4.4 Mil US\$</p> <p>The potential effect of modernization of RHMSS can be described by the overall results which show that the economic efficiency in 7-year period according to the sector-specific assessment is 1:7, and according to the benchmarking method this efficiency is 1:9.</p>
<ul style="list-style-type: none"> • Characteristics of the Case Study 	
<ul style="list-style-type: none"> ○ Consultation mechanisms 	<p>The study was supposed to focus on those sectors which have the greatest HM conditions impact and highest share in GDP. Then, it was planned to contact the highest institutions in the country which are responsible for the selected economy sectors (which would generally be corresponding Ministries) and identify experts in those institutions who would provide information and give their professional opinions about the use of HM information in their sector and efficiency of such information. For those purpose questionnaires was designed.</p> <p>Quantifying economic benefits of weather forecast and information for households in Serbia has been performed by the team from Sociological Institute in Moscow.</p>
<ul style="list-style-type: none"> ○ Structural interface 	<p>Republic Hydrometeorological Service of Serbia, Hail Suppression Sector; Ministry of Agriculture, Forestry and Water Resources, Water Directorate, Flood Protection Sector; Belgrade Heating Plants; Ministry of Mining and Energy; JAT Airways; Belgrade Airport; Belgrade City Authority; Secretariat for Transport; Road Administration; Directorate for Land Development of the city of Kikinda, Winter Service</p>
<ul style="list-style-type: none"> ○ Delivery mechanism 	<p>E-mail, phone, letters...</p>

○ Feedback mechanism	The questionnaires were designed for experts and users from the selected economy sectors and from RHMSS. Also the questionnaires were designed for households in Serbia.
○ Review Mechanism	Experts from World Bank and open national seminar “Economic Benefits of National Hydrometeorological Service in Serbia”, held in Belgrade on June 16, 2006.
○ Other Relevant Information	
• Project Logistics	
○ Resources Used	World Bank and RHMSS
○ Data Requirements	Climatological data, the most important information for the selected economy sectors and other users, other relevant forecast products, verification scores, 5 years period GDP, and data from questionnaires and other relevant data.
○ Economic Expertise Required	Relevant data for estimate: direct economic losses; indirect economic losses; potentially preventable losses; potentially preventable losses that could be avoided in case of the modernization of RHMSS; the cost of preventive and protective actions and other important information.
• Lessons learned	RHMSS has to redefine current organization, to redefine many of the traditional activities and RHMSS - to be more flexible, cost-effective, user-oriented, responsive and innovative Service.
• Best Practice Advice	Helps stakeholders to understand the areas of activity of NHMSs are very important. Organization of NHMSs should be based on Balanced Interests between people, money, time, abilities and other resources, and from the other side priorities, services, standards and expectations.
• Possible future advances	The design of the future Serbian Weather and Hydrological Services
• Comments	Cost benefit analysis is the one of the cornerstone for modernization of NHMSs and for users/stakeholders to better understand NHMSs areas of activity and how to make the most efficient use of information and forecast to achieve full economic benefit.
• URL	http://www.hidmet.sr.gov.yu and www.meteoalarm.rs