Title of case study	**InfraWeather**
Name of organization(s)	**ÖBB**
Business sector	Transport & Logistics
Region(s) relevant to case study	☐ All regions ☐ Africa and the Arab States ☐ Asia and the Pacific ☐ Caribbean and Central America ☒ Europe ☐ Least Developed Countries ☐ North America ☐ Polar regions ☐ Small Island Developing States ☐ South America
Country(s) relevant to case study	Austria
Adaptation sector(s) relevant to case study	☐ Business ☐ Education and training ☐ Food security, agriculture, forestry and fisheries ☐ Human health ☐ Oceans and coastal areas ☒ Science, assessment, monitoring and early warning ☐ Terrestrial ecosystems ☐ Tourism ☒ Transport, infrastructure and human settlements ☐ Water resources ☐ Other (please specify):
Adaptation activity	A dedicated weather information and weather warning system has been developed and implemented by ÖBB, Austria's national rail service. Preparative work included the installation of additional weather stations for better spatial coverage, the development of regional meteorological models, GIS-based overlay of railway tracks and meteorological data as well as GIS-based delineation of flood risk. The InfraWeather online portal gives access to general weather information, forecasts as well as weather warnings. A map shown on the user interface gives an overview over the Austrian railroad system with the most

	important weather information. With the new forecast models and radar techniques weather extremes can be forecasted on a scale of 10 km, partly even lower. This is possible due to the definition of natural areas, units with similar natural conditions. These are meteorological divides, crests, valleys etc. The forecast of floods integrates the water level of the rivers and the meteorological data so that the warnings can be sent 12 hours in advance. The snowfall forecast includes the amount of snowfall in the next 24 to 72 hours for each warning point. InfraWeather has a dedicated operational warning service, which provides also real-time severe weather warnings. Extreme weather events covered by the warning system are thunderstorms, flood events and heavy snowfall. The forecast of disastrous thunderstorms is provided by using 'nowcasting' techniques, where the track of thunderstorms can be forecasted 20 - 60 minutes in advance.
Cost-benefit	An important benefit of tailored weather warning systems for railways infrastructure managers is the increased pre-warning time for different kinds of natural hazards which can be used for a better preparation and more efficient response. Another aspect is improved management of personnel and machinery. Personnel costs can be saved by optimising disposition well in advance and by means of predefined response plans. Costs can also be saved on equipment rental since it is the more expensive the shorter the notice. Further costs savings can be achieved due to shorter durations of speed restrictions and line closures since warnings and following clearances can be timed and localised much more accurately.
Case study source(s)	ARISCC Final Report
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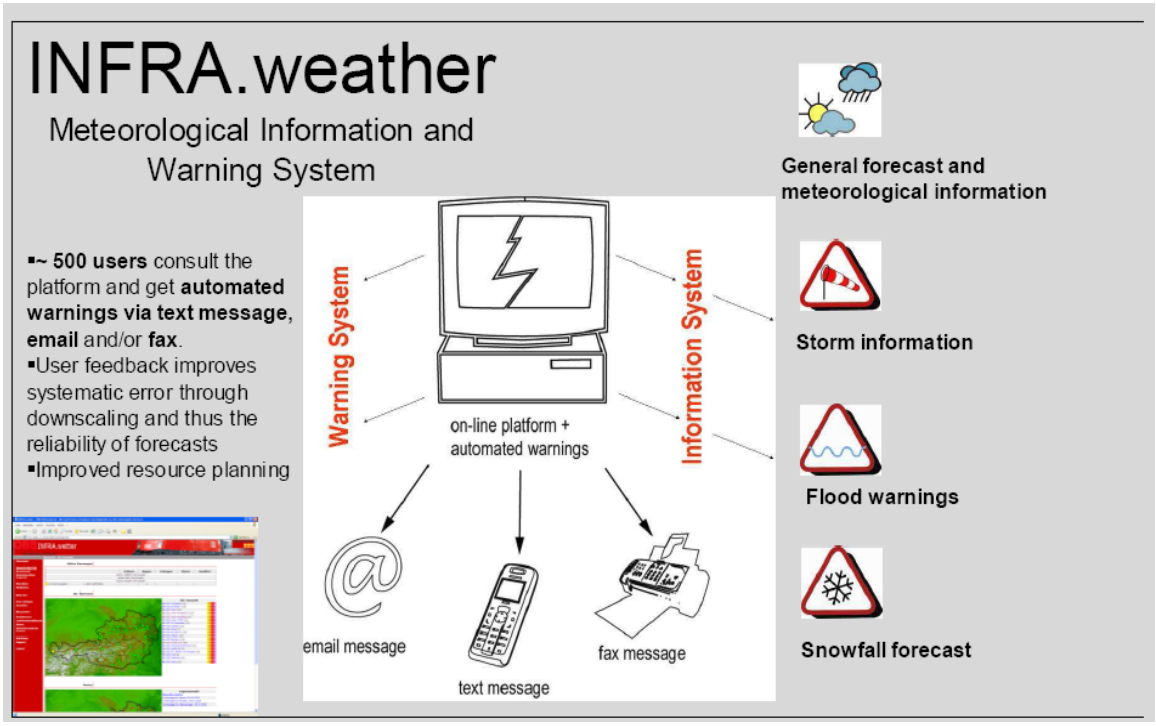
Disclaimer: These business cases have been cited to raise awareness about the engagement of the private sector in climate change adaptation. The information in the business cases has been provided either directly by the organization or obtained from a public source. The UNFCCC secretariat has not verified the information and takes no responsibility for it. Users are therefore advised to verify the information before they take any action relying on the information provided in the business cases.



Source: [ARISCC Final Report]

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