



The floods that have devastated Italy over the past week could become even more severe in the future, threatening food production and destroying the country's natural beauty, experts warn.

Storms have battered ancient towns and left large swaths of farmland in Tuscany under water, prompting a warning from the region's governor, Enrico Rossi, that "climate change is making us get used to ever more violent flooding".

Three people were found dead on Tuesday after their car fell from a collapsed bridge near Grosseto, while the town of Albinia was under two metres of water. As army units were called in to help locals evacuate, towns in neighbouring Umbria were also put on alert and sections of the main road linking north and south Italy were blocked by water. On Monday a 73-year-old man was drowned in his car by rising floodwaters near the walled town of Capalbio, with residents evacuated near Cortona, the setting for the novel *Under the Tuscan Sun*. Much of the rich farmland of the Maremma had become a lake of mud.

In Venice water levels were receding after the city's sixth-worst flooding since records began in 1872.

Leading Italian meteorologist Mario Giuliacci said: "The Mediterranean has warmed up by 1C to 1.5C in the last 20 years, meaning that Atlantic weather fronts passing over it absorb more vapour and more heat, which means more energy. And that means ever more violent storms and more rain when the fronts hit Italy."

"An average of 80mm of rain should fall in Italy in November. In the last 40 years it has gone over 100mm 11 times, seven of which are since 1999," he added.

Giuliacchi said the lower pressure brought by the storms was producing stronger winds. "The Scirocco wind which blew north up the Adriatic this week prompted the unexpected high water which swamped Venice," he said. The sea level rose by 149cm in Venice on Sunday, flooding 70% of the city.

Italy is getting increasingly used to disastrous flooding. In 2010, 150,000 livestock were drowned by floods in the Veneto region. In 2009, 31 people were killed by floods and mudslides in Messina in Sicily, while six died last year when floods surged through Genoa.

Floods have also been blamed on the number of illegally built homes in Italy which block water courses and prevent natural drainage.

However, a clear pattern of climate change is emerging, and affecting Italy's agricultural output, an official from Italy's farmer's lobby, Coldiretti, said.

"This year Sicily produced its first crop of bananas, while oil is now being made from olives grown in the foothills of the Alps," he said.

"The Italian climate, with ever drier summers and violent rains in the winter, looks set to become more like north Africa than, say, France," added Giuliacchi.

A hot, arid summer this year, followed by the floods, has ensured that more traditional Italian produce, which finds its way into kitchens around the world, is increasingly scarce, said Coldiretti.

Italy's wine harvest dropped 6% to a 40-year low, while the apple harvest was down by 22%, pears by 13%, chestnuts by 50% and honey by 25%. Production of flour destined for making

pasta dropped by 12%.

Said Coldiretti: "The risk is the increase of imports of ingredients pretending to be made in Italy, like Chinese tomato concentrate and Tunisian extra virgin olive oil."