



**Are you prepared  
to pay the price  
for water?**

kpmg.ro

—

2023



# Are you prepared to pay the price for water?

Water is key to human existence, yet it is one of the most undervalued resources. Current behaviour poses a threat to our human life and health, the global economy, and natural ecosystems. Collective action must be taken now to combat the water crisis. Although Romanians were taught in school some years ago that the country is endowed with plenty of fresh water sources, today's reality is far from comforting, as demonstrated by the fact that we have just experienced the world's hottest summer on record.

## The dual challenge

The water inventory of our Earth is confronted with dual challenges. On the one hand, there is an increasing demand for water, both residentially and commercially, as a result of demographic shifts and rapid economic growth. At the same time, we can anticipate a potential reduction in supply and quality due to climate change. Extreme weather events, including droughts, catastrophic rainstorms, and serious pollution affecting many global waterbodies, pose a risk to our communities and businesses.

All of us have a role to play in working to understand, address and mitigate water-related challenges, and businesses must take a leading role not only from an ethical and moral perspective but also to ensure sustainable business growth and resilient operations. How businesses respond will be one of the most important challenges of the coming decade, and water accessibility, both in terms of volumes and quality, should be a subject on every executive's agenda.

## Global context

Political disputes over water are nothing new. The first such recorded incident was in 2,500 BC when the King of the Lagash region of Mesopotamia diverted water to his region, leaving Umma, another region, without water.<sup>1</sup> But modern practices and behaviour, together with climate change, have made the problem an acute one today. Most recent studies predict that the world will face a massive water crisis if current trends continue. China is already facing severe surface and groundwater supply problems as it irrigates croplands to feed its people and run its industries. India's poor agricultural water practices, along with an outdated supply infrastructure, pose the risk of significant supply-demand mismatches in several basins. North Africa has been subject to a shift in traditional precipitation patterns for some years already, making its regions drier and depleting already limited water resources. Moving west, U.S. states like Arizona, California and Nevada face various forms of abnormally dry conditions or

<sup>1</sup> Water Conflict Chronology. <https://www.worldwater.org/conflict/list/>

droughts. Iconic rivers, like the Ganges in India, and the Colorado River in the U.S., are severely impacted by drought and overuse. This leads us to the conclusion that in a globalized world, executives will need to assess the water related risks and opportunities of their operational sites, their products, and their services. You may be “watertight” in one geography but prone to water risks in some others. In most cases, we can say that this global problem will need to be addressed with local actions.

Water stress is a reality in Europe as well. According to the European Environmental Agency<sup>2</sup>, water scarcity already affected 38% of the EU population and 29% of EU territory in 2019. Fast forward to 2023, when we saw record-breaking temperatures, making the continent drier and increasing the risk of water scarcity. In Spain and France, we have already seen some water usage restrictions imposed on populations and businesses, which have had an impact on business-as-usual models and life habits.

In this context, companies around the world are increasingly hearing from their business customers, consumers, investors, and government agencies about the growing importance of water issues. To address these challenges, numerous companies are finding ways to create products that use less water, or that reduce customers' water dependency. Romanian companies should not wait for commercial pressure or legislation, but instead should take a proactive role in managing their water-related risks and opportunities.

In terms of the big picture of the “balance sheet”, the price of water may seem low under current tariffs, but do you know what the price is for not having access to water or what the cost is of hourly restrictions?

## Romanian context

In 2019, a World Bank study<sup>3</sup> noted that Romania is “close to being a water-stressed country”. The study noted that per capita annual water availability of 1,930 m<sup>3</sup> (usable) is just above the 1,700 m<sup>3</sup> threshold for water stress, making Romania one of the most water-stressed countries in Europe on a per capita basis. At the same time, Romania’s water sector is vulnerable to climate change, and adaptation is essential to ensure that the needs of households, businesses, industry, agriculture, and hydropower can continue to be met.

The problem is particularly serious given that industries with significant physical risk (i.e., from droughts, storms, and high temperatures) make a significant contribution to economic output. According to the National Bank of Romania<sup>4</sup>, companies that have a medium to high risk of being affected by physical hazards generated 25% of national GVA in 2021, hence in turn exposing 30% of the banking sector to risks. These industries (e.g., agriculture, fishing and forestry, food and beverages, extractive industries, manufacturing, energy, transport, and construction) not only face long-term loss of production as a result of climate events, but also increased costs for

<sup>2</sup> Water resources across Europe — confronting water stress: an updated assessment. (2021). In EEA Report. European Environment Agency. <https://www.eea.europa.eu/publications/water-resources-across-europe-confronting>

<sup>3</sup> Romania Water Diagnostic Report. (2018). In WATER GLOBAL PRACTICE. World Bank Group. <https://documents1.worldbank.org/curated/en/805041531982015095/pdf/Executive-Summary.pdf>

<sup>4</sup> Tabloul de monitorizare a riscurilor climatice asupra sectorului bancar din România. (2022). Banca Națională a României. <https://bnro.ro/PublicationDocuments.aspx?icid=31565>

reconstruction and replacement, which will divert capital earmarked for investment. Hence, they will become less profitable.

For any business leader or for any investor which plans to offer or invest in water-dependent services and products, it is worth noting that there is a significant inter-basin and inter-annual variation in water resources availability that may create challenges for water resource management., especially during summer months.

In this context, prudent resource management that will ensure conservation and sustainability is crucial.

## Water risk in the manufacturing sector

Romania is a growing manufacturing hub in Europe. In 15 out of 41 counties, the leading companies in the manufacturing sector are from the automotive industry.<sup>5</sup> These production centres are located in Argeş, Bucharest, Dolj, Alba, Timiş, Ilfov and Braşov, where companies generate over 10 billion lei in turnover, followed by counties such as Prahova, Constanta and Olt with a turnover of between 10 and 5 billion lei.

As Figure 1 shows, Ilfov and Bucharest are in regions with a high risk of water stress. Four out of the 15 counties (i.e., Arges, Dâmboviţa, Braşov, Sibiu) overlap with regions with medium to high water stress, whereas Galaţi, and Olt are under low to medium risk.

While the water stress indicator measures the ratio of the total water demand to available renewable water supplies, it is crucial to consider the drought and riverine risks in these regions too. Flooding and storms can directly harm a company's assets (e.g., buildings, inventories, and machinery), while droughts can impede industrial production processes. See Figures 2 and 3 to evaluate the other two risks for your business.

## Water risk in the agricultural sector

Agriculture forms a key part of Romania's economy. The country is the largest sunflower and corn producer in Europe as well as its fourth largest wheat producer. Nearly one-fifth of the population are employed in agricultural-related activities.

Timiş and Arad have the largest grain production in Romania, with yearly yields of more than two million tons. Following these counties, southern and south-eastern regions such as Dolj, Călăraşi and Constanţa produce individually between one and two million tons of grain annually (see Figure 1).

While most of these production centres are exposed to low and low to medium water stress risk (i.e., Olt and Buzău), they are also particularly vulnerable to water hazards caused by extreme weather conditions (see Figures 2 and 3). Droughts have disastrous effects on livestock farming and crop

<sup>5</sup> Ziarul Financiar. (2022). Atlasul de Business al României. <https://edition.pagesuite.com/html5/reader/production/default.aspx?pubname=&edid=96d7fb1e-0043-4387-b1d0-a2f9b68c8ff9>

production, while flooding and storms can harm infrastructure, agricultural areas, animal shelters, and farming equipment. These events have a chain reaction that can lead to disruption to food distribution in the short term and have an impact on the productivity of agricultural land in the long term. Consequently, it is clear that engagement with water stewardship is vital.

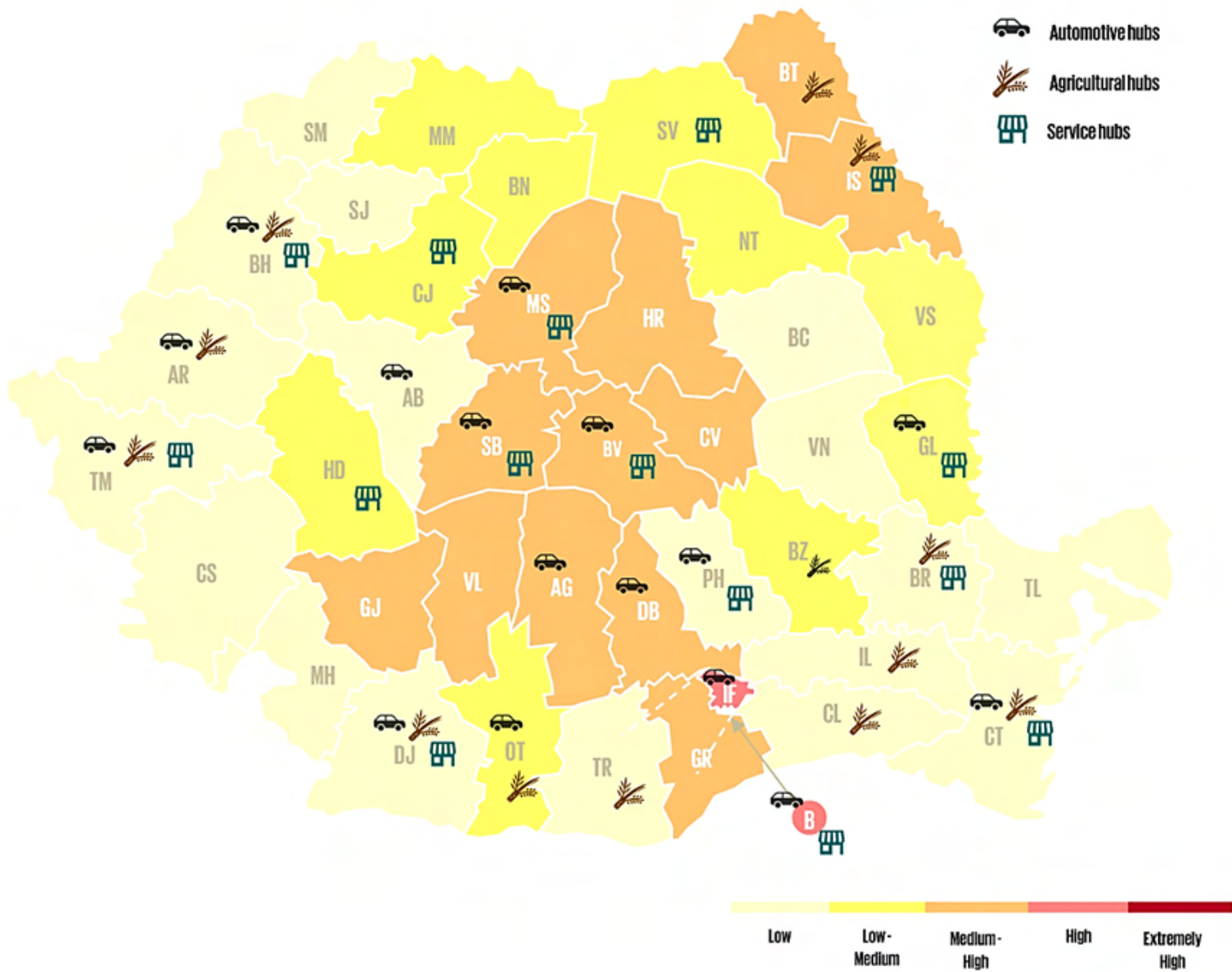
## Water risk in the service sector

The Romanian service sector is vast and covers a wide range of sub-sectors, including business activities, financial services, transport, and retail. Higher purchasing power has led to a greater number of retail centres (e.g., malls) and therefore more leasable areas. Cities like

Bucharest, Timișoara, Iași, Cluj, Sibiu, and Brașov are home to malls with leasable areas of over 100,000 m<sup>2</sup>, followed by those with a leasable area of over 50,000 m<sup>2</sup> in counties such as Constanța, Prahova and Bihor (see Figure 1).

While some are exposed to medium water stress risk (e.g., Iași), and some to medium to low risk (e.g., Cluj), the costs for each service sub-sector will mostly result from the indirect, wider disruption that droughts, floods, and storms create, such as reductions in produced output and disturbance to post-event economic activity. Long-term repercussions will include negative effects on trade and damage to essential infrastructure.

Figure 1. Baseline water stress risk in Romania<sup>6</sup>



<sup>6</sup> Romania Baseline Water Stress. Aqueduct Country Rankings. <https://www.wri.org/applications/aqueduct/country-rankings/?country=ROU&indicator=bws>

## Water risk in the energy sector

The long-term growth of Romania's economy relies, among other things, on the energy sector, and security of supply. Romania benefits from a diversified electricity production mix, which is one of the most balanced in the EU, with coal, hydro, natural gas, nuclear, wind and solar energy sources having comparable shares in power generation.

Of the total electricity produced in 2022, hydropower accounts for approximately 27%.<sup>7</sup> Moreover, other power capacities rely on water, for example nuclear power plants, which require special emplacement conditions near water sources to enable easy access to substantial quantities of water. In Romania, this is the case for the

Cernavodă Nuclear Power Plant located on the Danube River. Together, hydro power and nuclear power account for around 50% of Romania's electricity production.

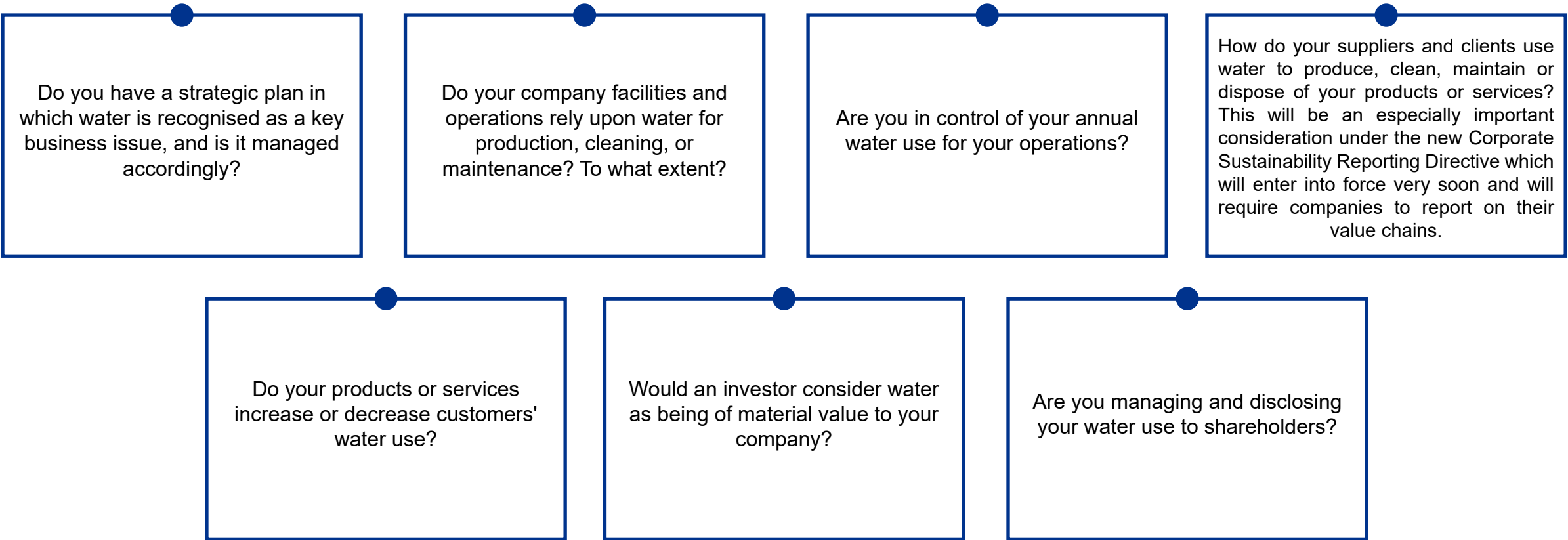
Besides its important contribution to electricity production in Romania, hydropower has a strategic role in ensuring flexibility and an efficient balance in the electricity system both at national and regional level.

Energy is critical for all activities in contemporary civilisation. To secure long-term economic growth and maintain a balanced energy mix as a strategic advantage for Romania, protecting our water supplies is crucial.

<sup>7</sup> AUTORITATEA NAȚIONALĂ DE REGLEMENTARE ÎN DOMENIUL ENERGIEI. (2022b). RAPORT PRIVIND REZULTATELE MONITORIZĂRII PIEȚEI DE ENERGIE ELECTRICĂ ÎN LUNA DECEMBRIE 2022. DIRECȚIA GENERALĂ MONITORIZARE PIAȚĂ, INVESTIGAȚII. <https://anre.ro/wp-content/uploads/2023/06/Decembrie-2022-Raport-Monitorizare-EE.pdf>

# Here's how to ensure that the cost of inaction is not higher than the cost of action

As we have seen, different business sectors are exposed to various risks depending on their operations, location, and climate change risks. Thus, we would advise companies and organisations to take a renewed and more coordinated look at their relationship with water. They will then discover that water can both expand business opportunities and pose risks, locally but also in their supply chains. To get started, companies should try to answer several key questions and track the corresponding factors that most relate to their own business as follows:



By answering these questions, your company will have made the first step in the journey of managing water as an issue of real strategic and material importance. Your business has a key role to play in addressing the water crisis. The Sustainability Team at KPMG in Romania will be pleased to assist you in managing your water related risks and opportunities.

# Water Risk Maps<sup>6</sup> in Romania

Figure 2. Drought risk

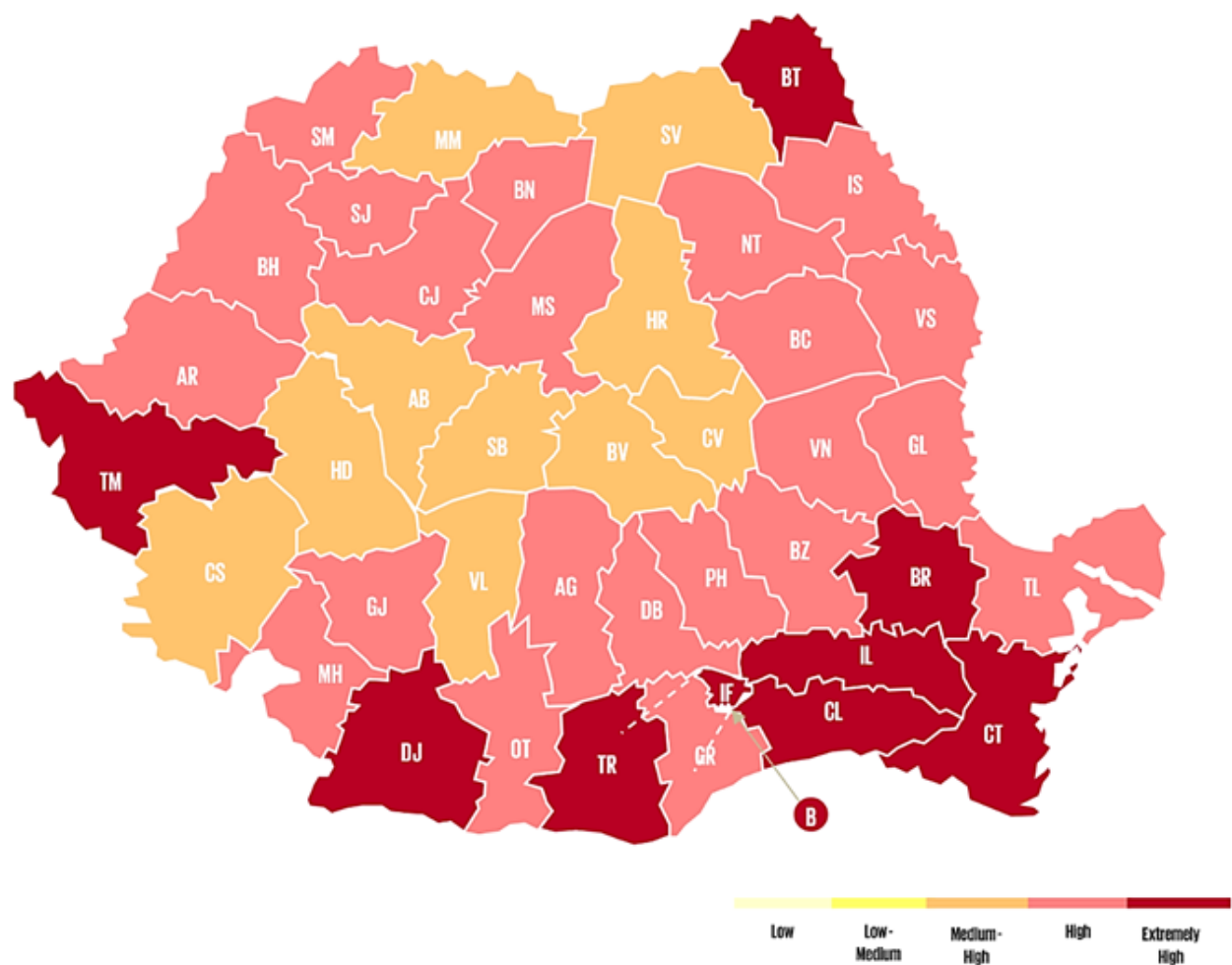
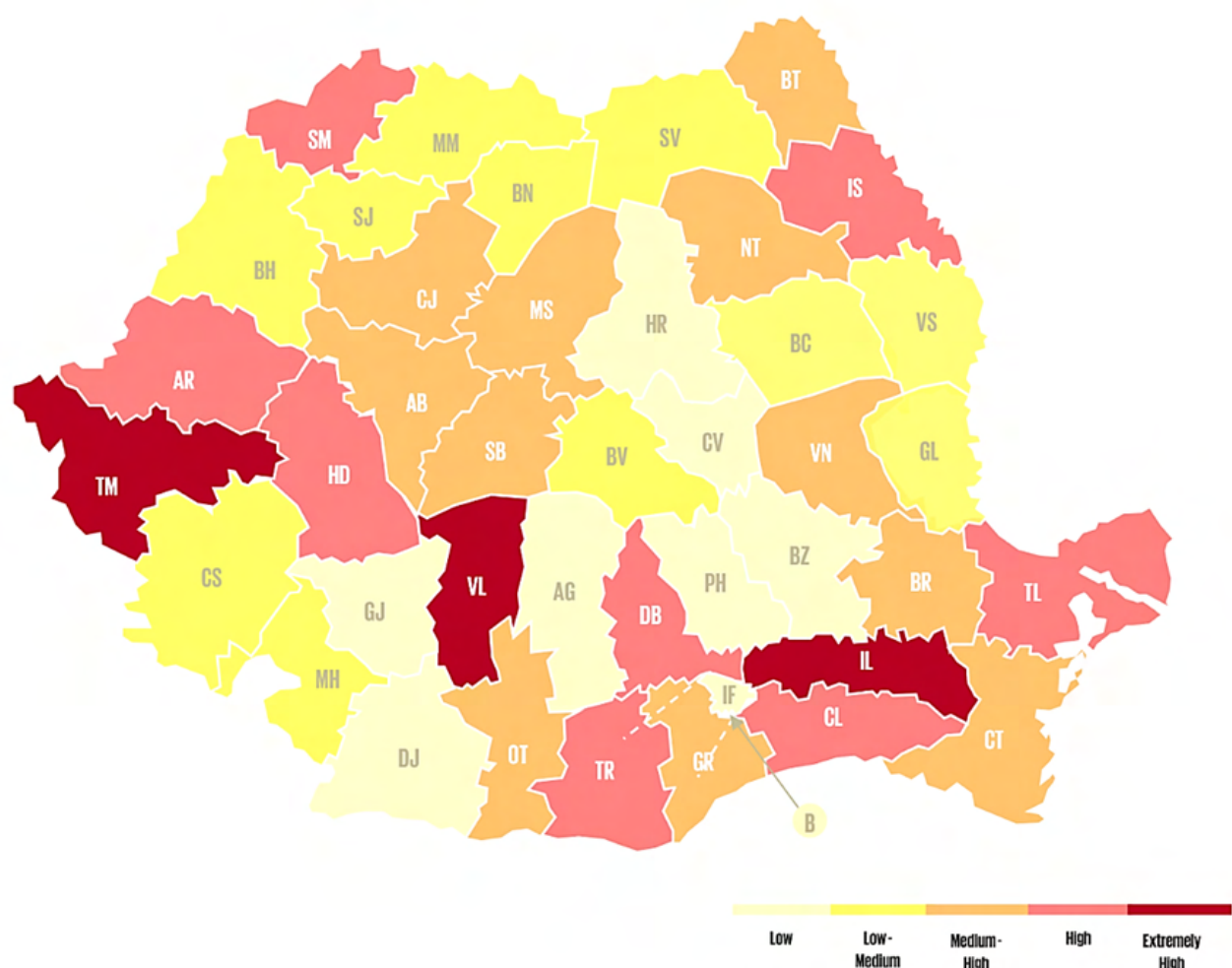


Figure 3. Riverine flood risk



<sup>6</sup> Romania Baseline Water Stress. Aqueduct Country Rankings. <https://www.wri.org/applications/aqueduct/country-rankings/?country=ROU&indicator=bws>

## KPMG in Romania

### Bucharest Office

KPMG in Romania,  
DN1, Șoseaua București-Ploiești  
nr. 89A, Sector 1, București 013685,  
România,  
P.O. Box 18 – 191  
T: +40 372 377 800  
[www.kpmg.ro](http://www.kpmg.ro)

### Cluj-Napoca Office

Vivido Business Center  
Alexandru Vaida Voievod street  
no 16, 400592, Cluj Napoca  
T: +40 (372) 377 900  
F: +40 (753) 333 800  
E: [kpmgro@kpmg.ro](mailto:kpmgro@kpmg.ro)

### Constanța Office

Mamaia blv., no. 208,  
4th Floor, Constanța,  
900540, Romania  
T: +40 (756) 070 044  
F: +40 (752) 710 044  
E: [kpmgro@kpmg.ro](mailto:kpmgro@kpmg.ro)

### Iași Office

Ideo Business Center,  
Păcurari Road, no. 138,  
Ground Floor  
Iași, 700521, România  
T: +40 (756) 070 048  
F: +40 (752) 710 048  
E: [kpmgro@kpmg.ro](mailto:kpmgro@kpmg.ro)

### Timișoara Office

ISHO Offices  
Take Ionescu blv. no. 50,  
Building A,  
7th floor, Timiș, Romania  
T: +40 372 377 999  
F: +40 372 377 977  
E: [kpmgro@kpmg.ro](mailto:kpmgro@kpmg.ro)

## KPMG in Moldova

### Chișinău Office

171/1 Stefan cel Mare blv.,  
8th floor, MD-2004, Chișinău  
Republic of Moldova  
T: + 373 (22) 580 580  
F: + 373 (22) 540 499  
E: [kpmg@kpmg.md](mailto:kpmg@kpmg.md)  
[www.kpmg.md](http://www.kpmg.md)

## Contact us



### Ovidiu Popescu

Director,  
Energy, Sustainability  
and Climate Change,  
KPMG in Romania  
E: [opopescu@kpmg.com](mailto:opopescu@kpmg.com)



### Roxana Suci

Senior Manager,  
Energy, Sustainability  
and Climate Change,  
KPMG in Romania  
E: [rsuci@kpmg.com](mailto:rsuci@kpmg.com)



### Andrada Blaga

Consultant,  
Energy, Sustainability  
and Climate Change,  
KPMG in Romania  
E: [ablaga@kpmg.com](mailto:ablaga@kpmg.com)



[kpmg.com/socialmedia](http://kpmg.com/socialmedia)

