

The IRSN logo consists of the letters 'IRSN' in a bold, sans-serif font. The 'I' and 'R' are red, the 'S' is blue, and the 'N' is red. The letters are set against a white background within a red-bordered box.

INSTITUT
DE RADIOPROTECTION
ET DE SÛRETÉ NUCLÉAIRE

Faire avancer la sûreté nucléaire

IRSN Barometer 2019

the perception of risks and security in France

<http://barometre.irsn.fr>

Since 1990, the IRSN Barometer has been following annually the perception of risks and security by the French people. This continuous study provides precious insight to better understand risk perception, which in turn helps IRSN better handle risk assessment. The Barometer focuses on four major issues:

- 1) the current concerns of the French,
- 2) their views on science and expertise,
- 3) their perception of 35 risk situations,
- 4) their opinion on nuclear matters.

This year, for the 3rd consecutive year, it also displays three viewpoints from external experts.



MEMBRE DE

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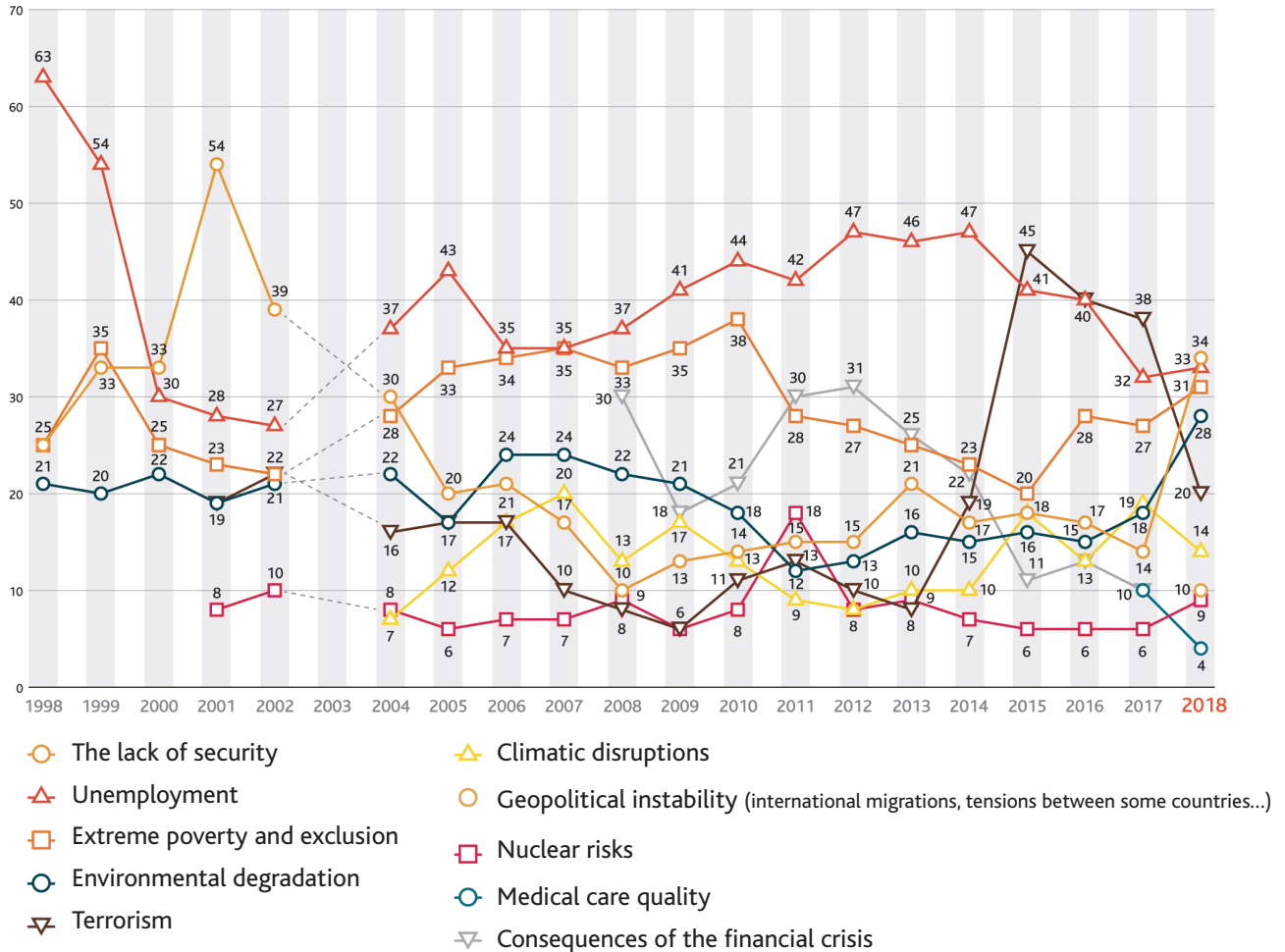
EUROPEAN
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The 2019 IRSN Barometer has been produced with the same methodology as the previous editions: a face-to-face survey was conducted in the fall of 2018, amongst a representative sample of about 1000 French people. The questionnaire evolved only marginally, so as to take into account recent developments without

compromising the continuity of the data set. A notable change occurred in 2019: a new institute (CDA), conducted the survey. Most results were not affected. For those that where, it led to two kinds of evolutions: a rise in the "do not know" replies and a narrowing of the range of results. Both are factored in the analysis.

Part 1 - Question 1 : "In France, among the following issues, which one is the most concerning for you?" (2 replies possible)

Evolution of the cumulated results from 1998 to 2018



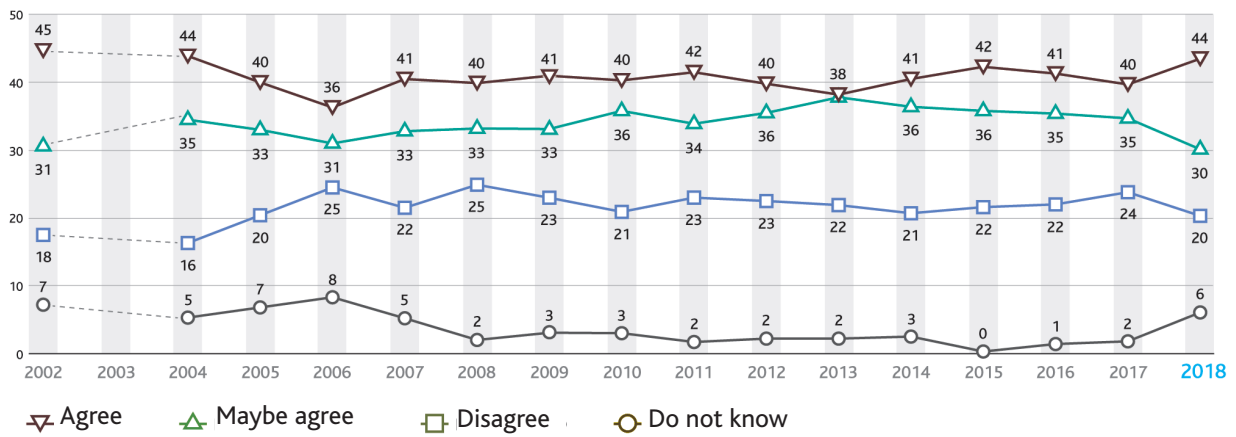
The main concern of the French is, for the first time since 2001, "the **lack of security**". It replaces "terrorism", which drops to 5th place and loses 18 points. It is a notable change from the previous editions that can appear surprising but is easily explained: the survey was conducted during the "yellow jackets" episode of November 2018, which generated violent outbursts, duly reported and amplified in the media. "Unemployment" and "extreme poverty and exclusion" stay in 2nd and 3rd positions. Environmental concerns stay behind the socio-economic issues, but their significance is growing. The combined results for "global warming" and "environmental degradation" reach 42 %, to be compared with a combined score of 64 % for the socio-economic concerns.

Questioned about their main **environmental concern**, the French reply massively "global warming", and they are more numerous than ever to declare so (+8 points since 2017 and +29 points since 2013). Second comes this year "the disappearance of animal species", up from 3rd place last year and gaining 5 points. On the

contrary, "air pollution" and "water pollution" see their score decrease again. Put together, they lost close to 30 points since 2013, probably to the benefit of the broader modality "global warming".

The French keep a **positive opinion of science** and its benefits. They also think greatly of the **experts**: 58 % have a good or very good opinion of them and only 6 % declare having a bad or very bad opinion. As for the qualities expected from said experts, "competence" stays a solid first at 60 %, before "independence" (45 %) and "honesty" (40 %).

Part 2 - Question 2 : "The development of science and technology generates more benefits than detrimental effects"



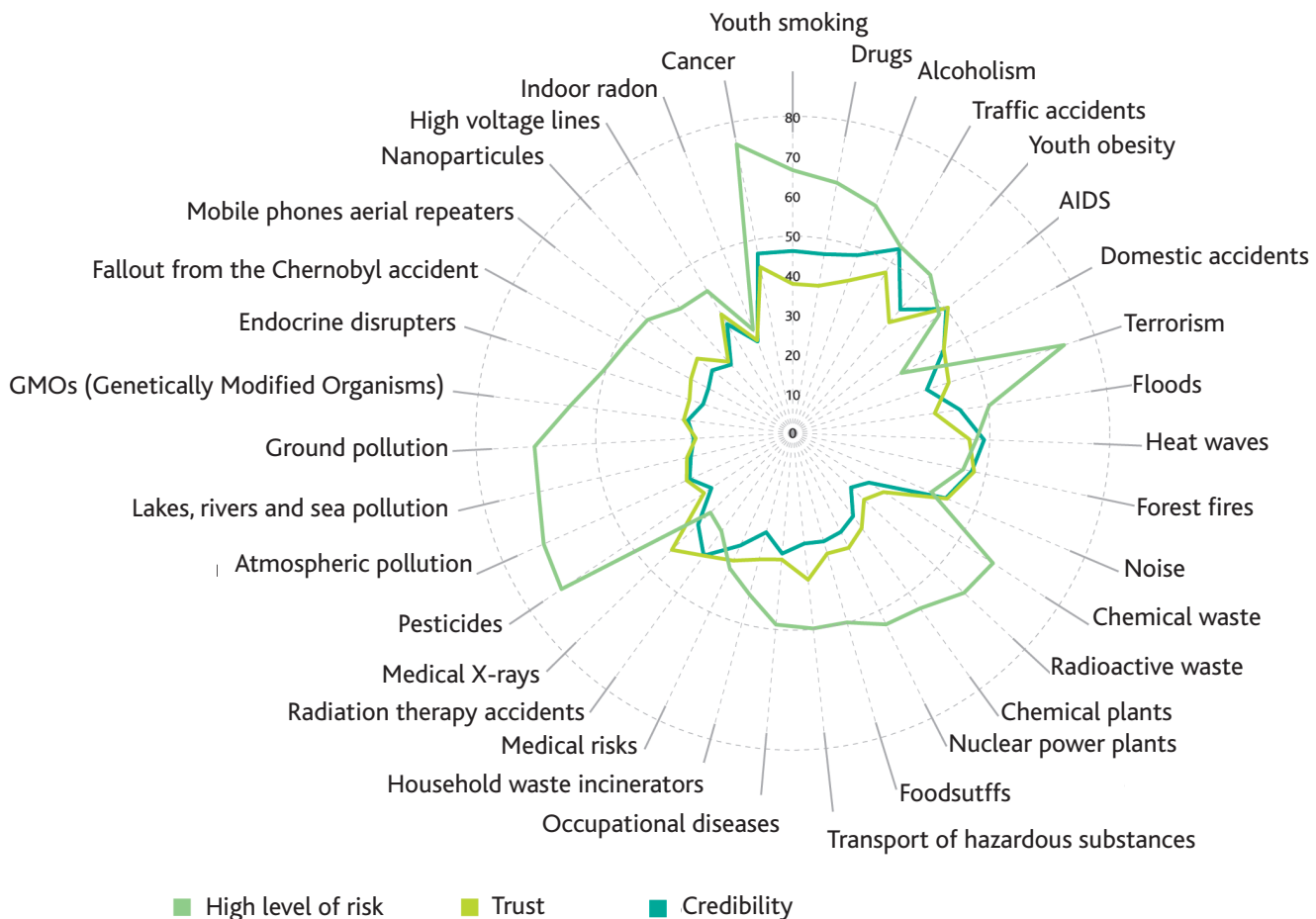
Transparency issues still matter a great deal: the publicity of expertise reports is deemed "a priority" or "important but not a priority" for 89 %. They are as numerous to believe that assessment bodies should commit to reply to all the questions submitted by citizens and NGOs.

Pluralistic structures (composed of operators, experts, elected officials, citizens...) are viewed as useful by a strong majority (81 %). However, fewer French people declare a will to personally commit by participating to public meetings on the management of high risk facilities. They are now 39 % to reply they would, while 52 % say they would decline, a rise of 12 % since 2004.

Every year, the Barometer focuses on the same **35 risk situations**. For each of them, it questions the French on 3 dimensions: the perceived level of risk, the trust in the authorities to handle the situation and the credibility of the information given on the dangers of the situation.

In terms of **perceived level of risk**, the top three risk situations stay the same as last year: "**cancer**", followed by "**terrorism**" and "**pesticides**". We observe a significant increase in the perceived risk level for "**floods**" and a significant decrease "**forest fires**" compared to the other risks. They respectively move up 6 positions and down 7 positions. Nuclear power plants and radioactive waste stay stable. The 3 situations with the lower level of perceived risk are "**indoor radon**", "**medical radiography**" and "**radiation therapy accidents**", which is customary.

Part 3 - Question 3: "The perception of the 35 risk situations according to the 3 dimensions: high risk level, trust and credibility"



The **trust level in the authorities** is still highest for **"AIDS"**, followed by **"traffic accidents"** and **"forest fires"**. We observe a significant move up by "noise nuisance", from the 18th to the 8th position, for which we have no definite explanation. The future evolution of this situation will be monitored. The relative trust level in the authorities to handle the risks associated with radioactive waste decreases significantly, moving down from the 24th to the 33rd position. In the meantime, however, the trust level in absolute value rises from 21 % to 25 %. The evolution of this risk situation will be closely monitored in the upcoming years to discriminate between the cyclical and the structural effects.

Regarding the credibility of the information, the same 3 risk situations remain ahead: **"traffic accidents"**, **"AIDS"** and **"heat wave"**, the 2nd and the 3rd switching positions compared to last year. The last 3 risk situations in terms of credibility are this year **"nanoparticles"**, **"chemical waste"** and **"radioactive waste"**, three issues which often arouse protest within the civil society.

Focusing on the nuclear issues, the strongest **arguments in favor and against nuclear power** remain the same. In favor of nuclear energy, **"energy independence"** (36 %) stays ahead, followed by **"the cost per kW/h"** (21 %) and **"the absence of greenhouse gas emissions"** (19 %).

Among arguments against nuclear energy, **"the risk of an accident"** (35 %) remains first, followed by **"radioactive waste"** (23 %) and **"the vulnerability of nuclear installations"** (19 %).

Questioned about the **catastrophic events** they view as most frightening, the French now position the Chernobyl nuclear accident (33 %) clearly ahead of the **Fukushima** nuclear accident (26 %). This trend will very probably be confirmed next year, due to HBO's acclaimed TV series **"Chernobyl"**, which was not out yet when the survey was conducted at the end of 2018. The perception of the possibility of a severe accident in France decreases significantly (-17points) to get to 49 %.

Finally, regarding the **competence and credibility of the actors of the nuclear field**, we observe a narrowing in the range of results, in particular as for competence. All the actors customarily positioned as the most competent see their score decrease, and conversely for the actors perceived as the least competent. Relative positions are however stable. **CNRS**, the nuclear safety authority (**ASN**), **IRSN** and **CEA** thus come in as most competent. In terms of credibility, **consumer protection NGOs** and **environmental NGOs** come in first, ahead of **CNRS** and the **Académie des Sciences**.

Part 4 - Question 16 : "In the nuclear industry and energy field, do you think the following actors are technically competent?"
Question 17 : "Do the following sources of information tell you the truth on the nuclear issues in France?"

