Regulations, Risks, and Property Values: A Zonal Classification Approach

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1. SUMMARY

Transparency in real estate markets increasingly depends on the proper integration of regulatory constraints, environmental risks, and on-site analysis into property valuation. In a context of growing natural and technological hazards, surveyors and real estate appraisal experts play a decisive role in delivering reliable, defensible, and socially responsible valuations.

This paper examines how regulatory frameworks, risk exposure, and zonal classification directly influence property values, with a particular focus on high-risk areas. It highlights the limits of automated valuation models and artificial intelligence tools, which, despite improving access to data, may overlook local regulations, unregulated risks, and building-specific vulnerabilities. The paper emphasizes that real estate valuation remains an essentially human process, based on professional judgment, physical site visits, and detailed market analysis.

Special attention is given to flood risk and other environmental hazards, their impact on functional value, recurring renovation costs, and long-term depreciation. The concept of residual value of use is explored through zonal classification and time-based valuation horizons, showing that in extreme cases property value may progressively decline to zero.

The paper concludes that only a qualified surveyor, combining regulatory knowledge, field expertise, and market insight, can ensure transparent valuations that protect market integrity, public safety, and long-term land sustainability.

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2.   INTRODUCTION

Transparency in real estate markets is increasingly dependent on the accurate integration of regulations, environmental risks, and on-site analysis into property valuation. Surveyors and real estate appraisal experts play a central role in ensuring reliable and defensible valuations, particularly in a context of increasing natural and technological risks.

This paper explores how regulatory frameworks, risk exposure, and zonal classification directly influence property values. It highlights why valuation remains an essentially human process, grounded in professional judgment, physical site visits, and contextual market analysis.

3.   DATA, DIGITAL TOOLS AND ARTIFICIAL INTELLIGENCE

The digital transformation of real estate appraisal has introduced extensive databases and artificial intelligence tools. These include public databases such as the French DVF land registry, notary databases (Perval and Biens), professional expert databases, mobile applications, and AI-driven valuation platforms.

While these tools enhance access to information and analytical capacity, they also present significant risks. Automated valuation models (AVMs) may overlook regulatory constraints, local environmental conditions, or unregulated risks. Artificial intelligence can support analytical writing or market summaries, but final valuation must always be adjusted, validated, and justified by the surveyor.

Transparency, data protection, and algorithm traceability are essential. The appraiser remains fully responsible for the valuation outcome and must ensure that any technological tool used can be explained, audited, and contextualized.

4.   REGULATORY FRAMEWORK AND RISK IDENTIFICATION

Property valuation in France is strongly influenced by legislation and regulations, particularly concerning natural and technological risks. Flood risk prevention plans (PPRN/PPRI), European flood risk zones (TRI), and environmental protection regulations establish binding constraints on land use and value.

Beyond regulated risks, surveyors must identify unregulated or emerging risks, such as runoff flooding, coastal erosion, wildfires, landslides, clay shrinkage and swelling, underground cavities, radon exposure, or technological and nuclear risks.

Only a physical site visit allows the expert to detect these elements, assess building vulnerability, and verify whether preventive measures have been implemented.

5. PROPERTY VALUATION IN HIGH-RISK ZONES

In high-risk areas, valuation requires a comparative market analysis between properties located inside and outside regulated or identified risk zones. The expert must analyze recent transaction prices, measure observed discounts, and determine whether exceptional circumstances or economic rent offset these differences.

Risk exposure directly affects the functional value of spaces. For example, flood-prone ground floors may be reclassified from main surface areas to secondary areas with reduced weighting. Recurring renovation costs linked to ten-year or hundred-year flood events must be deducted from market value over the ownership period.

Exposure to frequent risks significantly impacts long-term value, often more than rare but severe events.

6. PREVENTIVE AND REMEDIAL MEASURES

The valuation process must also consider preventive and remedial measures. These include construction adaptations, elevation of technical installations, materials resistant to water or fire, and compliance with clearance or protection obligations.

Post-disaster repair costs vary widely depending on damage intensity, ranging from light renovation to major reconstruction. Rising construction costs further amplify the financial impact of risk exposure on property values.

The expert must assess whether such costs are economically sustainable or whether long-term decline leads to a residual value of use approaching zero.

7. RESIDUAL VALUE AND ZONAL CLASSIFICATION

In extreme cases, zonal classification may lead to progressive loss of usability and value. Public acquisition, demolition, relocation of occupants, and land restoration are sometimes necessary to protect populations.

Residual value of use must therefore be assessed over different time horizons (immediate, 30 years, or 100 years), using transparent and reproducible methodologies, such as linear regression. In some zones, residual value at 30 years may effectively be zero.

8. CONCLUSION

This paper demonstrates that reliable real estate valuation in risk-exposed areas cannot be delegated to automated tools alone. Only a qualified surveyor and appraisal expert, physically visiting the premises, consulting legislation, and analyzing local markets, can deliver a transparent, defensible, and socially responsible valuation.

In an era of increasing environmental uncertainty, the surveyor's role is central to protecting market transparency, public safety, and long-term land sustainability.

REFERENCES

BIOGRAPHICAL NOTES

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