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IRRIGATION INFRASTRUCTURE AND ITS USE IN BRĂILA AND GALAȚI COUNTIES: A REVIEW

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Abstract: Irrigation infrastructure supports adaptation to water scarcity, but equipped area alone does not show whether irrigation services are contracted or water is actually delivered and applied. This review integrates scientific literature, institutional information, and a descriptive comparison of 2024 ANIF records for Brăila and Galati counties. The analysis highlights infrastructure availability, service contracting, water delivery, and agronomic use. Brăila reports 567,895 ha contracted and 294,765.94 ha contracted (80.12%), while Galati reports 145,200 ha equipped and 96.78% ha contracted (66.67%). Considerable heterogeneity appears across individual schemes. Contracting indicators are useful for administrative comparison, but they do not measure the area actually irrigated, delivered water volumes, service continuity, or irrigation efficiency.

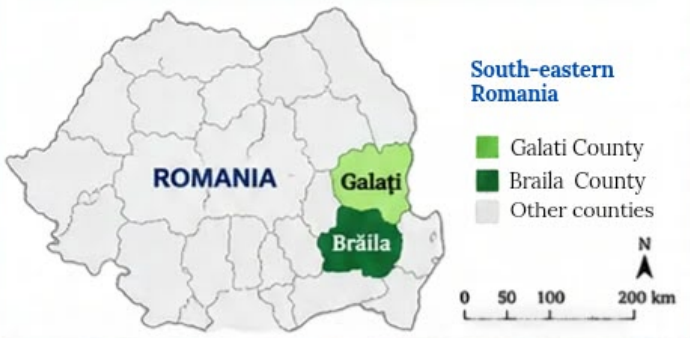
Introduction

- South-eastern Romania is frequently affected by drought; irrigation is a strategic adaptation resource.
- Equipped area, contracted area, delivered water, and actuallyirrigated land are distinct indicators and should not be confused.
- Previous studies discuss infrastructure availability, wateruser organization, and remote-sensing-based irrigation monitoring.
- This review clarifies the111cistic evidence and administrative indicators that describe irrigation use in Brăila and Galati.

Material and method

- Crosssectional documentary study for reporting year 2024.
- Source: ANIF "Irrigation Campaign" table.
- Units of analysis: territorial branches and individually named irrigation schemes.
- Indicators: Equipped area (Ea), Contracted area (Ca), Contracting rate RC (%) = 100 × Ca/Ea, Uncontracted difference D (ha) = Ea − Ca.
- Share of contracted area within subgroup PC (%) = 100 × Ca/ECa; CRS = sum of the shares of the three largest schemes.
- The ambiguous contracted value for Ianca–Surdila Greci was excluded from the primary scheme-level calculations, while branch totals were retained.

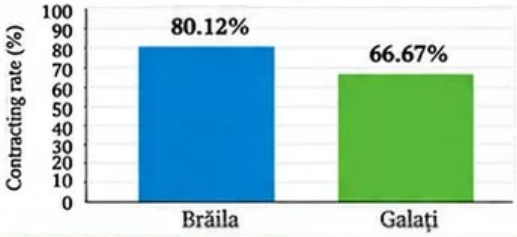




Results and discussions

Indicator Brăila-Galați		
Equipped area (ha)	367,985	154,300
Contracted area (ha)	**294,765.94**	**96,809.96**
Contracting rate (%)	**80.12**	**66.67**
Ea − Ca (ha)	**75,129.06**	**48,390.04**

Contracting rate by county





Scheme-level highlights

- Brăila schemes range from 0.00% (Noianu- Chișcani) to 100.00% (Brăila- Dunăre-Siret).
- Other high Brăila values: Terasa Viziru 99.18%; I.M.B. 98.11%; Galați schemes range from 59.54% (Câmpia Covorlui) to 99.95% (Nimolousa- Măxineni).
- Other Galați values: Brateșul de Sus 99.55%; Terasa Nicorești 78.62%, CRS share of contracted area: Brăila 58.64%; Galați 94.11%.

Interpretation

- Brăila has about 2.53 times the equipped area of Galăți and a higher contracting rate (+13.45 percentage points).
- Aggregate branch indicators conceal major differences among irrigation service areas.
- Contracted area reflects administrative service access, not actual irrigation frequency, water volumes, or efficiency.
- A staged interpretation is required: infrastructure availability, contracting, delivery, and plot-level irrigation use.

Conclusions

15,2024, Brăila shows higher contractual coverage than Galati (80.12% vs 66.67%).
Scheme-level analysis reveals substantial variation hidden by branch averages.
CRS indicates stronger concentration of contracted area in Galăți (94.11%) than in Brăila (58.64%), but subgroup sizes differ.
A fuller assessment requires multi-year scheme-level records, delivered water volumes, service continuity, energy information, and observations of the area actually irrigated.

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