

Land Governance and Land-Use Planning: Toward an Integrated Analytical Framework for the Governance–Planning Nexus

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ABSTRACT

Land governance and land-use planning are often treated separately, yet in practice they meet wherever land rights, institutional decisions and spatial regulations shape actual places. This study develops a five-dimensional analytical framework for reading the Governance–Planning Nexus. To build it, the relevant literature was identified, synthesized and analyzed through a systematic scoping review conducted and reported following the PRISMA-ScR guidelines. Grounded in institutional planning theory and drawn from four international references (FAO-VGGT, World Bank-LGAF, UN-Habitat-IGUTP and GLTN), the framework works through five dimensions: legal, institutional, social, technical and planning. Five databases (Scopus, Web of Science, ScienceDirect, SpringerLink and Taylor & Francis Online) were searched for peer-reviewed studies published between 2015 and 2025. After three-stage screening, 30 studies were retained and coded on a three-level engagement scheme (0 = absent, 1 = implicit/instrumental, 2 = explicit/analytical). The results show clear but uneven architecture. The institutional dimension appears in all 30 studies, followed by planning (29/30), social (27/30) and legal (27/30); the technical dimension is weakest, present in 19 studies but analytically integrated in only 6. African studies cluster on institutional and legal questions, European and North American studies emphasize multi-level strategy and community-based planning, and only a few integrate all five in one explanatory frame. The study's main outcome is a replicable five-dimensional framework with its operational coding scheme. The evidence shows the central gap lies not in the absence of governance or planning, but in the partial, uneven integration of their legal, social, technical and institutional components.

Keywords: Governance-planning nexus, Analytical framework, Land governance, Land-use planning, Scoping review.

1. INTRODUCTION

Land underpins almost every form of human activity, from housing and food production to infrastructure and ecological services (FAO, 2012; UN-Habitat, 2018; Durán-Díaz, 2023).

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The way land is governed and the way its uses are spatially organized therefore shape both the everyday functioning of cities and their long-term sustainability (OECD, 2017). Land governance provides the institutional and regulatory framework through which decisions on land rights, responsibilities and resource allocation are made, while land-use planning (LUP) is the spatial mechanism that translates those decisions into zoning, regulations and development controls (FAO, 2012; Deininger, 2013; UN-Habitat, 2015). The intersection of these two domains is increasingly described as the Governance-Planning Nexus (OECD, 2017; Krawchenko and Tomaney, 2023).

Yet this interdependence is not always visible in the way the literature is organized. Legal, institutional, social, technical and planning questions are frequently examined in separate conversations, even when they describe different sides of the same land-use problem. This separation leaves the analytical architecture of the Governance-Planning Nexus only partly visible: some dimensions dominate the debate, others remain underdeveloped, and the actual connections among them are often assumed rather than examined.

This study addresses two interrelated questions about the international peer-reviewed literature published between 2015 and 2025. RQ1: How are the five analytical dimensions of the Governance-Planning Nexus—legal, institutional, social, technical and planning—conceptualized in this literature? RQ2: Which dimensions and geographical regions are most visible, and which remain under-represented?

This research puts forth the five-dimensional analytical framework of the Land Governance-Planning Nexus. It was developed by conducting and reporting systematic scoping review (PRISMA-ScR) to ensure methodological rigor, transparency and reproducibility. The main contribution of this study is the proposed analytical framework and its operational coding scheme, which can be replicated in future empirical and comparative research.

Against this background, the study does more than list themes. It aims to make the structure of the debate itself visible. First, it consolidates a five-dimensional analytical framework from established international references. Second, it applies that framework systematically to recent peer-reviewed evidence. Third, it identifies the analytical and geographical gaps that limit the current understanding of the Governance-Planning Nexus. Its contribution is therefore both conceptual and empirical: it offers a replicable way to study the nexus and, at the same time, maps where the literature is concentrated and where future research is still needed.

2. CONCEPTUAL AND ANALYTICAL FRAMEWORK

2.1 Land Governance and Land-Use Planning as an Institutional Nexus

In international references, land governance is consistently defined as the rules, processes and structures through which decisions on access to, use of and control over land are made, implemented and monitored (FAO, 2012; Deininger, 2013; Mitchell and McEvoy, 2019). Effective governance is associated with tenure security, transparency, accountability, stakeholder participation, institutional capacity and sound spatial-data management (FAO, 2012; Deininger, 2013; UN-Habitat, 2018). Land-use planning, in turn, is the spatial-regulatory instrument through which these governance principles are operationalized in zoning schemes, growth-management policies and development controls (UN-Habitat, 2015; OECD, 2017).

From a planning-theory perspective, this relationship is best understood not as a simple procedural sequence but as an institutional nexus. Spatial planning systems do not operate

in a vacuum; they are embedded in governance arrangements shaped by institutional structures, power relations, administrative mandates and modes of coordination among actors. The form of governance whether hierarchical, decentralized or collaborative affects how plans are prepared, how decisions gain legitimacy and how implementation actually unfolds. **(Krawchenko and Tomaney, 2023)** extend this view by proposing a multi-scalar framework in which planning is shaped by institutions, social and cultural values, environmental conditions and structural factors working across nested governance scales **Fig. 1**.

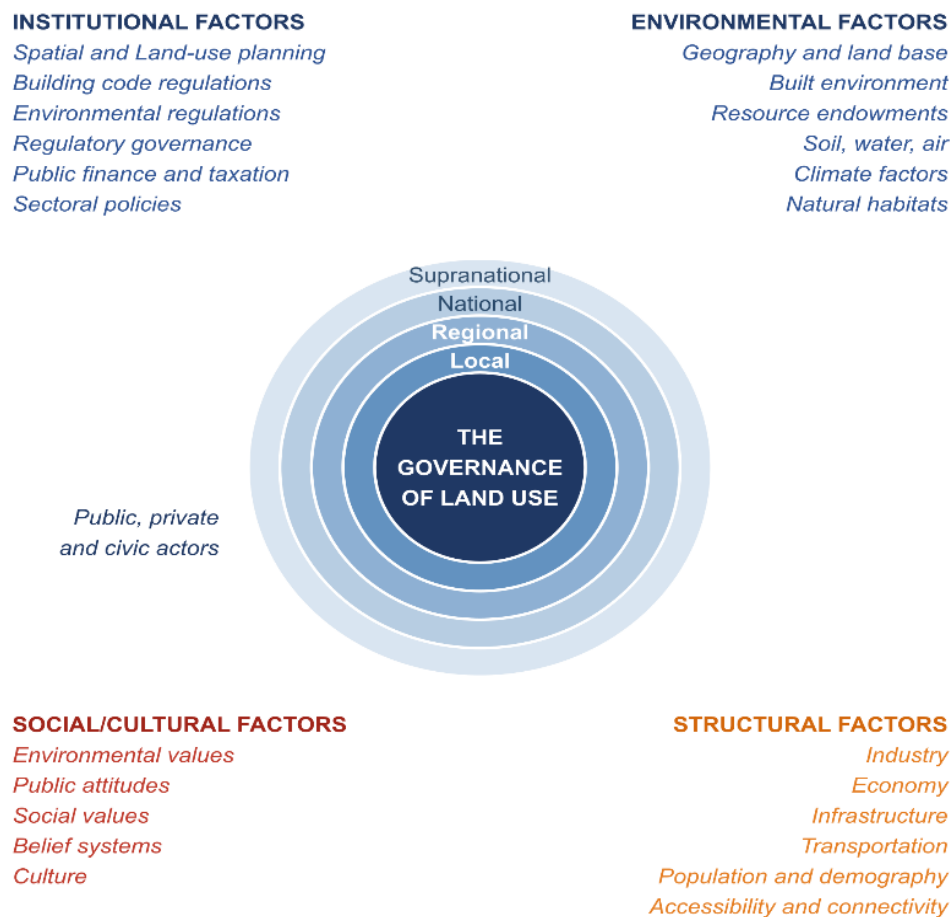


Figure 1. Land-use planning within a multi-scalar governance system shaped by institutional, socio-cultural, environmental and structural factors. Adapted from **(Krawchenko and Tomaney, 2023)**.

To keep institutional planning theory as an active part of the analysis, rather than only a background reference, three concepts guide the synthesis in Sections 4 and 5. Institutional embedding refers to the extent to which planning rules, plans and decisions are connected to the broader institutional architecture of the state. Multi-scalar governance captures the vertical and horizontal coordination of land-use decisions across national, regional, local and sectoral arenas. Actor coordination refers to the formal and informal mechanisms through which state agencies, non-state actors and communities align, negotiate or fail to align around land decisions. Together, these concepts allow the review to interpret not only what the literature covers, but how governance and planning are made to work together in different contexts.



2.2 Five Analytical Dimensions of the Governance-Planning Nexus

Although the conceptual model in **Fig. 1** clarifies the institutional embeddedness of planning, it does not by itself provide an operational structure for systematic literature analysis. To bridge this gap, the review draws on four widely cited international frameworks—FAO-VGGT (FAO, 2012), World Bank-LGAF (Deininger, 2013), UN-Habitat-IGUTP (UN-Habitat, 2015; UN-Habitat, 2018) and GLTN (Mitchell and McEvoy, 2019)—and translates their overlapping concerns into five recurring analytical dimensions. **Table 1** shows that each of the five dimensions is anchored in identifiable sections or principles of all four international references rather than being a post-hoc analytical convenience. The legal, institutional and social dimensions appear with comparable emphasis across the references. The technical dimension is most strongly developed in World Bank-LGAF and GLTN, particularly through land information and fit-for-purpose land administration, while the planning dimension is most strongly developed in UN-Habitat-IGUTP and, in a more procedural form, in FAO-VGGT Section 20. The relative weight assigned to each dimension across these references is itself an explanatory variable in the synthesis.

Table 1. Source-to-dimension mapping. The five analytical dimensions are derived from the most relevant chapters and principles of the four international references that underpin the framework based on (FAO, 2012; Deininger, 2013; UN-Habitat, 2015; Mitchell and McEvoy, 2019)

Dimension	FAO-VGGT (2012)	World Bank LGAF (2013)	UN-Habitat IGUTP (2015)	GLTN (2008-present)
Legal	Sections 4, 7–10: tenure rights, recognition, transfer, dispute resolution	Panel 1: Legal and institutional framework (LGI-1, LGI-2)	Principle 6, 8: legal frameworks, regulatory clarity	Continuum of land rights; pro-poor and gender-responsive law
Institutional	Sections 6, 8, 17: institutional capacity, coordination, monitoring	Panels 1, 5: institutional framework; institutional performance	Principles 5, 7, 11: integrated governance, vertical/horizontal coordination	Land governance arrangements; multi-actor land administration
Social	Sections 3B, 4.6, 9: consultation, participation, vulnerable groups	Panel 6: public provision of information; transparency	Principles 3, 9, 10: equity, inclusion, public participation	Pro-poor, gender-responsive and participatory land tools
Technical	Sections 17, 18: spatial information, recording systems	Panel 4: land information; quality and accessibility of land records	Principle 6: spatial data, ICT, monitoring; geospatial information	Fit-for-purpose land administration; STDM, digital tools
Planning	Section 20: regulated spatial planning; balancing land uses	Panel 3: management of public land; land-use planning indicators	Core focus: integrated urban and territorial planning; zoning	Spatial planning instruments; participatory land-use planning



The five dimensions summarized in **Table 1** are outlined below, each in terms of the scope of governance and planning elements it covers:

- Legal: Legislative frameworks, tenure rights, planning law, registration procedures and dispute resolution.
- Institutional: Government structures, administrative responsibilities, coordination mechanisms and implementation capacities.
- Social: Public participation, transparency, spatial equity and the inclusion of vulnerable groups.
- Technical: Spatial data, GIS, digital cadasters, spatial-data infrastructures (SDI) and data-driven planning.
- Planning: Zoning, spatial allocation, development controls, urban-growth management and strategic planning.

Taken as a whole, the five dimensions should not be read as a checklist or as a fixed hierarchy. They work more like interacting lenses. Law defines the formal scope of action; institutions shape who acts and with what authority; social processes influence legitimacy, equity and the distribution of outcomes; technical systems make land information visible and auditable; and planning is where these relationships become spatially observable. The direction of influence may also shift technology can reshape institutions, social mobilization can challenge law, and planning practice can expose legal or institutional gaps. The value of the framework lies in tracing these shifting relationships rather than forcing them into a linear order **Fig. 2**.

The full operational coding rules for each dimension are provided in **Table 2**. Disambiguation rules were used for two overlapping pairs of dimensions. First, participation was coded as social when it was community- or civil-society-led, such as participatory mapping or indigenous consultation, and as institutional when it was state-mandated, embedded in formal procedural rules and analyzed primarily as a governance mechanism. Second, GIS, SDI and digital cadasters were coded as technical when discussed as information-infrastructure components, such as data quality, interoperability or geospatial monitoring, and as planning when they were integrated into zoning, spatial strategies or land-use regulation. When a study clearly engaged both sides of a pair, both dimensions were coded, with the relative score reflecting the observed depth of engagement.

The five-dimensional framework offers a systematic reading of the reviewed literature, but it is not presented as an exhaustive account of every lens through which land governance and land-use planning can be studied. Several strands of scholarship that have gained prominence since the four founding references were issued sit at the edges of the framework rather than inside any single dimension. The political economy of land benefits from a given governance arrangement, and through what distributional mechanisms — cuts across the institutional and legal dimensions without being reduced to either. Digital land governance and algorithmic land administration push the technical dimension into questions of platform power and data ownership that FAO-VGGT, LGAF, IGUTP and GLTN, drafted before the recent expansion of digital cadastral systems, could not fully anticipate. Spatial justice, related to but analytically narrower than the social dimension as coded here, foregrounds distributional outcomes rather than procedural participation, and data governance — who controls, curates and has the right to access land-related data — is only partially captured by the technical dimension's emphasis on infrastructure. These perspectives are not absent from the field; they are simply not yet organized into a sixth analytical dimension, and their

omission here should be read as a boundary of the present framework rather than a judgement on their importance.

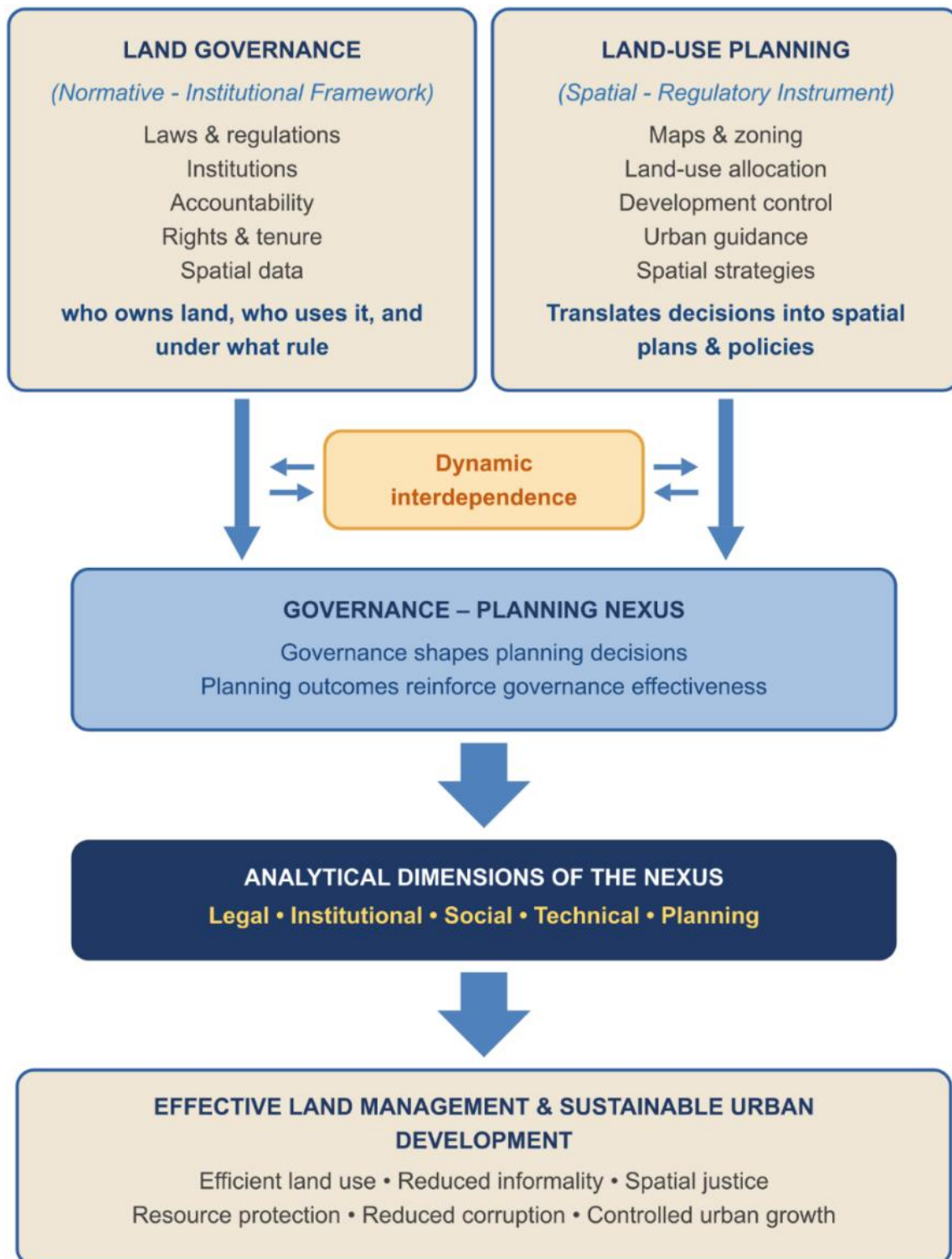


Figure 2. Five-dimensional analytical framework of the Governance-Planning Nexus. Synthesized from (FAO ,2012; Deininger ,2013; UN-Habitat ,2015; Mitchell and McEvoy 2019)



Table 2. Operational coding rules for the five dimensions: inclusion indicators, exclusion indicators/boundary cases and the distinction between Score 1 (implicit/instrumental) and Score 2 (explicit/analytical) engagement. The same rules were applied to all 30 included studies.

Dimension	Inclusion indicators (counts as engagement)	Exclusion indicators / boundary cases (do not count)	Score 1 (implicit / instrumental) vs. Score 2 (explicit / analytical)
Legal	Discussion of tenure law, zoning regulations, planning law, registration rules, dispute-resolution mechanisms, or constitutional/property-rights frameworks.	Generic legal references with no analytical use (e.g. one sentence citing “the Land Act” without analysis); private contract or commercial-law issues unrelated to land governance.	Score 1: a statute is named to justify a policy choice. Score 2: legal framework is itself an analytical object (e.g. comparing zoning law regimes).
Institutional	Analysis of government structures, multi-level coordination, planning agencies, ministries, intergovernmental relations, mandates and accountability mechanisms.	Mere mention of an institution as an actor (e.g. “the ministry approved the plan”) without analysis of its capacity, mandate or coordination.	Score 1: institutions appear as background actors. Score 2: institutional configurations are the explanatory variable (e.g. multi-level governance arrangements).
Social	Public participation, transparency, spatial justice, inclusion of vulnerable or indigenous groups, perceived legitimacy of decisions, contested land claims.	Demographic descriptors alone (e.g. population size); “the community” mentioned only as setting; user satisfaction surveys not linked to governance or planning.	Score 1: participation is reported as procedural step. Score 2: participation/justice is treated as a determinant of planning outcomes.
Technical	GIS, spatial-data infrastructures (SDI), digital cadastres, geospatial monitoring, 3D land administration, fit-for-purpose tools, smart-city data systems treated as governance/planning components.	Software-only descriptions (e.g. “ArcGIS was used to draw the map”) without analytical role; pure remote-sensing accuracy assessments without governance link.	Score 1: GIS/SDI is used only as a visualisation/illustration tool. Score 2: technology is treated as a structural component of governance (e.g. SDI as institutional infrastructure).
Planning	Master plans, zoning, spatial strategies, growth management, regulatory development controls, integrated spatial planning, land-use change analysis.	Architectural or building-design discussions without spatial regulation; economic land valuation without spatial-policy implications.	Score 1: planning instruments are mentioned descriptively. Score 2: planning instruments are the analytical lens through which governance is examined.



3. MATERIALS AND METHOD

3.1 Study Design and Reporting Standard

It should be emphasized that the systematic scoping review is the research methodology of this study, whereas its scientific contribution is the analytical framework itself. A systematic scoping review was selected because the literature on land governance and land-use planning is broad, conceptually fragmented and methodologically diverse. A narrowly framed systematic review or a quantitative meta-analysis would not fit this evidence base (**Kusters et al., 2020; Entwistle and Nyantakyi-Frimpong, 2025**). The scoping design is appropriate for three reasons. First, the field does not lend itself to a single PICO-style question. Second, the studies use heterogeneous methods and do not report comparable outcome measures. Third, the purpose of this article is to map how the governance-planning relationship is conceptualized across five dimensions, rather than to estimate a pooled effect size. The review was reported according to PRISMA-ScR, informed by PRISMA 2020 flow-reporting principles. The review protocol was not prospectively registered.

3.2 Search Strategy and Information Sources

A systematic search was conducted across five international databases 10–14 November 2025: Scopus, Web of Science (Clarivate), ScienceDirect (Elsevier), SpringerLink and Taylor & Francis Online. The search combined controlled vocabulary and free-text terms covering both governance and planning concepts. The Scopus and Web of Science strings were used as master strings; equivalent searches were adapted for ScienceDirect, SpringerLink and Taylor & Francis Online according to each platform's syntax, field codes and Boolean-depth limits while preserving the same conceptual coverage. The exact strings used in each database are reported in **Table 3**.

Table 3. Exact search strings used in each database (date of search: 10–14 November 2025).

Database	Search string
Scopus	TITLE-ABS-KEY(("land governance" OR "land tenure governance" OR "land administration") AND ("land-use planning" OR "spatial planning" OR "land development controls" OR "urban planning"))
Web of Science	TS=(("land governance" OR "tenure governance") AND ("land-use planning" OR "spatial planning"))
ScienceDirect	Title, abstract, keywords: ("land governance" OR "land tenure governance" OR "land administration") AND ("land-use planning" OR "spatial planning" OR "urban planning"). Filters: Research articles; 2015–2025; subject areas: Social Sciences, Environmental Science, Earth and Planetary Sciences.
SpringerLink	Title and abstract: ("land governance" OR "land administration") AND ("land-use planning" OR "spatial planning"). Filters: Article; Discipline = Earth Sciences, Geography, Political Science; Date range 2015–2025; English language.
Taylor & Francis	[Abstract] OR [Title] OR [Keywords]: ("land governance" OR "land administration") AND ("land-use planning" OR "spatial planning" OR "urban planning"). Filters: Article; 2015–2025; subjects: Urban Studies, Geography, Environmental Studies.



Filters were applied for three criteria: (i) English language; (ii) peer-reviewed journal article; and (iii) publication year between 2015 and 2025. The 2015 lower bound was selected because it marks the post-SDGs and IGUTP period and the growth of digital and spatial-governance literature, while 2025 was the most recent complete publication year at the time of the search.

3.3 Eligibility Criteria

Studies were included if they met four criteria: (i) they explicitly examined the relationship or interaction between land governance and land-use or spatial planning, rather than discussing only one field in isolation; (ii) they engaged at least one of the five analytical dimensions defined in Section 2; (iii) they were peer-reviewed journal articles indexed in at least one of the five selected databases; and (iv) they provided sufficient conceptual, empirical or policy-oriented content for dimensional coding.

Journal quartile rank (SJR/Scimago Q-rank) was not used as an inclusion criterion because such a rule could introduce selection bias and is not required by PRISMA-ScR. Inclusion was based on topical relevance and the four content criteria above. The Q-rank of each included study is reported in **Table 6** only as a descriptive characteristic of the sample, not as a filter.

3.4 Selection Process

Records were retrieved from five bibliographic databases between 10 and 14 November 2025. The per-database breakdown of the 185 records identified is reported in **Table 4**, which reflects platform-specific coverage and the relative distribution of publishers represented in the final sample. It should be noted that these counts were obtained from a verification re-count conducted during manuscript preparation using the same search strings and date filters.

All retrieved records were imported into Mendeley, where duplicate entries were removed automatically and subsequently verified manually. The deduplicated pool of 142 records was then subjected to three sequential screening stages:

1. Title screening excluded records clearly outside the scope of the review, including purely agronomic, economic-modelling or environmental-impact studies that contained no governance-planning dimension.
2. Abstract screening retained only records that explicitly addressed land governance, land-use planning, tenure arrangements or spatial regulation.
3. Full-text screening confirmed the analytical relevance of each retained record and assessed the feasibility of dimensional coding against the five-dimension framework.

Table 4. Per-database breakdown of the 185 records identified during the search (10–14 November 2025). The total matches the identification row in **Table 5**. Based on a verification re-count during manuscript preparation.

Database	Records identified (n)	% of total
Scopus	72	38.9%
Web of Science (Clarivate)	48	25.9%
ScienceDirect (Elsevier)	32	17.3%
SpringerLink	18	9.7%
Taylor & Francis Online	15	8.1%
Total identified	185	100%



Screening was conducted independently by the first author (HM) and the co-author (MR). Any disagreements arising at each stage were resolved through structured discussion until consensus was reached. The complete selection process, including the number of records retrieved, duplicates removed, and records excluded at each stage with reasons, is summarized numerically in **Table 5** and presented visually in the PRISMA-ScR flow diagram as in **Fig. 3**.

Table 5. Numerical summary of the PRISMA-ScR study selection.

Stage	Description	n
Identification	Records identified through database searching	185
Screening (title)	Records screened after duplicate removal and title check	142
Screening (abstract)	Abstracts assessed for relevance to land governance and land-use planning	78
Eligibility	Full-text articles assessed for analytical relevance and dimensional codability	46
Exclusions (full text)	Excluded for lack of analytical content or non-codable focus	16
Included	Studies retained in the final scoping review and dimensional analysis	30

The 30 included studies constitute the residual sample after the eligibility criteria were applied. The sample size was determined by the screening process rather than by a predefined cap.

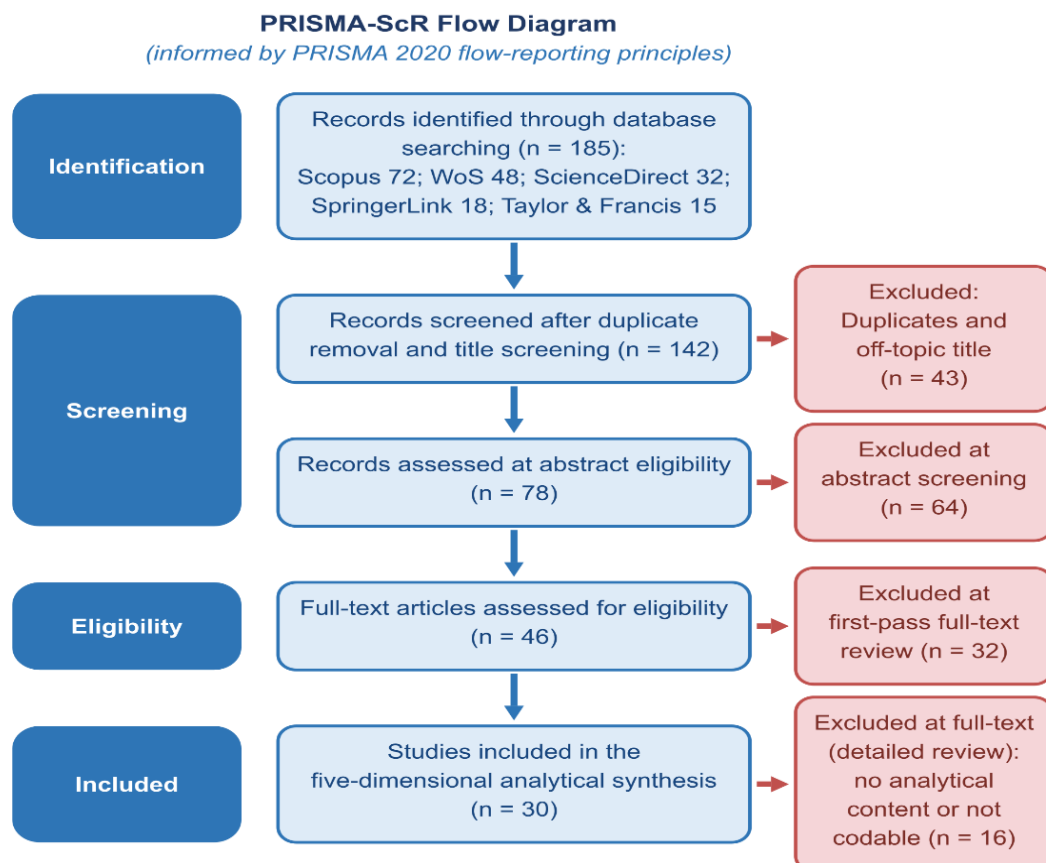


Figure 3. PRISMA-ScR flow diagram of the selection process. Numbers indicate the records carried forward to each stage and the records excluded at each step. Following PRISMA-ScR of (Tricco et al., 2018) and PRISMA-ScR (Page et al., 2021) flow-reporting principles.



3.5 Data Extraction and Coding

To make the reading of each article transparent, a standardized coding form was prepared before analysis. For each study, the form recorded bibliographic details, year of publication, journal, descriptive Q-rank, geographical scope, study design, data type and a three-level analytical engagement score for each dimension: 0 = absent/not addressed; 1 = implicit or instrumental, meaning that the dimension was mentioned or used as a tool but not analyzed; and 2 = explicit and analytical, meaning that the dimension was treated as part of the study's explanation. This three-level scheme was used because a simple binary code would hide an important distinction: some studies only use a dimension in passing, while others make it central to the argument. This distinction is conceptual as much as procedural: a Score of 1 record that a dimension is present in a study, whereas a Score of 2 records that the dimension carries explanatory weight in the study's own account of governance or planning outcomes. The coverage figures reported in Section 4 therefore indicate where a dimension is discussed at all, while the integration figures indicate where it does interpretive work; the two should not be read interchangeably.

The coding scheme was operationalized from the institutional planning perspective developed in Section 2: each dimension was treated as an analytical lens for examining how governance structures condition planning systems. Operational coding rules were defined a priori for each dimension, with inclusion and exclusion indicators and worked examples provided in **Table 2**. Coding was performed by the first author (HM), and ambiguous cases were discussed with the co-author (MR) until consensus on a 0/1/2 score was reached. The single-coder design is acknowledged as a limitation of the review. The full coding matrix is provided in **Table 9**.

4. RESULTS AND DISCUSSION

4.1 Study Selection and Characteristics

The PRISMA-based search retrieved 185 records. After duplicate removal and three screening stages, 30 studies were retained for analysis **Fig. 3; Table 5**. The general characteristics of the included studies are summarized in **Table 6**.

Table 6. Characteristics of the 30 included studies (S1–S30). Based on the 30 included peer-reviewed journal articles.

ID	Reference	Geographical scope	Method	Q
S1	(Durán-Díaz, 2023)	Global South (multi-country)	Mixed methods	Q1
S2	(Chen et al., 2025)	China (national)	Policy-text analysis	Q1
S3	(Dingkuhn et al., 2025)	Multi-region (Ireland, USA, Philippines)	Systematic review + cross-case analysis	Q1
S4	(Kalogianni et al., 2020)	Global	Conceptual / system design	Q1
S5	(Childress et al., 2021)	Brazil	Case study	Q1
S6	(Azadi et al., 2023)	Iran & Ethiopia	Conceptual comparative	Q1
S7	(Sofianopoulos et al., 2025)	Global	Systematic review	Q1
S8	(Costa et al., 2024)	Global	Structured review	Q1
S9	(Alemie et al., 2015)	Ethiopia	Case study	Q1
S10	(Nowak et al., 2021)	Global / EU	Comparative legal	Q1



S11	(Udessa et al., 2023)	Ethiopia (Gelan, Lega Tafo)	Qualitative case study	Q1
S12	(Hersperger et al., 2018)	Global	Comparative qualitative	Q1
S13	(Azadi, 2020)	Global	Conceptual review	Q1
S14	(Entwistle and Nyantakyi-Frimpong, 2025)	Liberia	Qualitative case study	Q1
S15	(Liu and Zhou, 2021)	China	Institutional analysis	Q1
S16	(Ramezani et al., 2023)	Iran	Conceptual review	Q1
S17	(Cobbinah et al., 2020)	Ghana	Qualitative case study	Q1
S18	(Kusters et al., 2020)	Global	Participatory workshops	Q1
S19	(Bah and Dossa, 2025)	Francophone Africa	Comparative qualitative	Q1
S20	(Slobodníková and Tóth, 2025)	Slovakia	Multi-case qualitative	Q1
S21	(Van Assche et al., 2022)	Alberta, Canada (8 communities)	Comparative qualitative case study (96 interviews + focus groups + plan/policy analysis)	Q1
S22	(Feng et al., 2024)	China (Shanghai)	Policy analysis	Q1
S23	(Babalola, 2023)	Ibadan, Nigeria	Quantitative survey	Q1
S24	(Asadzadeh et al., 2023)	Europe & Iran	Mixed methods	Q1
S25	(Hersperger et al., 2024)	Global / EU	Comparative qualitative	Q1
S26	(Boulton and Dedekorkut-Howes, 2024)	Australia	Multi-case qualitative	Q1
S27	(Hoddy et al., 2025)	Mozambique	Socio-legal qualitative	Q1
S28	(Bozkurt et al., 2025)	Global	Review	Q1
S29	(Kassa and Mussa, 2024)	Ethiopia (Borena)	Qualitative case study	Q1
S30	(Nuhu, 2019)	Tanzania (peri-urban)	Qualitative case study	Q2

Note on the peer-reviewed status of the 30 included studies. All 30 studies listed in **Table 6** are peer-reviewed journal articles, identifiable through their journal titles in the reference list (e.g. Land, Land Use Policy, Cities, Sustainability, Sustainable Cities and Society, Landscape and Urban Planning, Global Environmental Change, World Development, ISPRS International Journal of Geo-Information, Urban Forum). Institutional references such as FAO-VGGT, World Bank-LGAF, UN-Habitat IGUTP, GLTN, OECD and (**Enemark, 2015**) are used only as theoretical/framework sources in Section 2 and are not included in the analyzed sample. The reference numbers used in the S1–S30 identifiers map to the publication metadata in the reference list; a full DOI cross-check has been performed for all reference list entries

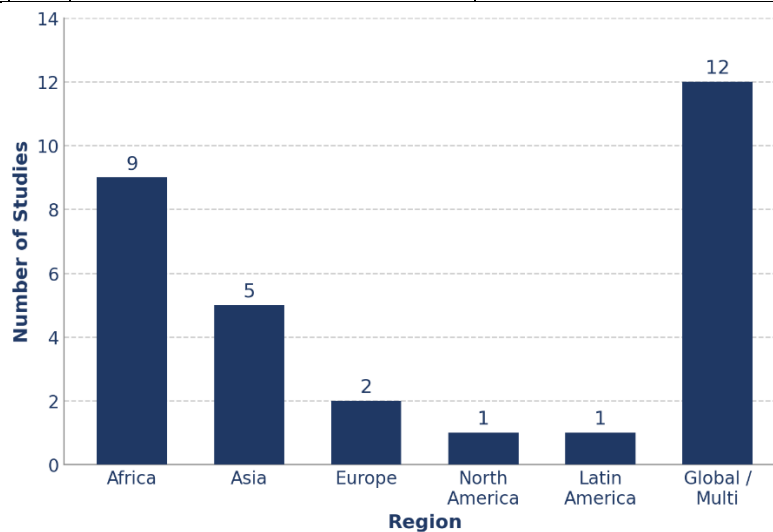
4.2 Geographical Distribution

Although the sample is international, it is not geographically even. The 30 studies cover five world regions and a substantial global or multi-regional cluster as shown in **Table 7** and **Fig. 4**. African studies form the largest regional group ($n = 9$), followed by Asian studies ($n = 5$, mostly from China and Iran). European studies ($n = 2$), North American studies ($n = 1$, Canada with eight Alberta communities) and Latin American studies ($n = 1$, Brazil) are markedly under-represented, while one-third of the sample is global or multi-regional.

This pattern matters because the geography of the literature also shapes the geography of the concepts: some dimensions are developed through African tenure and institutional debates, while others are more visible in Global North planning and digital-governance studies. Regional dimension profiles per world region are compared in **Table 8** and **Fig. 5**.

**Table 7.** Geographical distribution of the 30 included studies by region. Based on the 30 included studies.

Region	n	Study codes	Comment
Africa	9	S9, S11, S14, S17, S19, S23, S27, S29, S30	Strong representation
Asia	5	S2, S6, S15, S16, S22	China and Iran only
Europe	2	S20, S25	Slovakia and one multi-region EU paper
North America	1	S21	Canada only (Alberta, 8 communities)
Latin America	1	S5	Brazil only
Global / Multi-region	12	S1, S3, S4, S7, S8, S10, S12, S13, S18, S24, S26, S28	Cross-cutting analyses; specific countries covered include USA (S3), Ireland and Philippines (S3), and EU-wide cases (S25)

**Figure 4.** Geographical distribution of the 30 included studies based on **Table 7**.**Table 8.** Regional patterns in the reviewed sample: dominant theoretical orientation and most-engaged analytical dimensions per region. Synthesizing regional patterns identified across the 30 included studies.

Region	Studies (n)	Dominant theoretical pattern	Most-engaged dimensions (sample studies)
Africa	9	Institutional fragmentation + customary–statutory legal pluralism; tenure–security framing	Institutional & Legal (S9, S11, S14, S17, S19, S23, S27, S29, S30)
Asia (China, Iran)	5	Centralized state-led reform; vertical institutional integration	Institutional & Planning (S2, S6, S15, S16, S22)
Europe	2	Multi-level / strategic planning; networks of plans	Planning, Institutional & Social (S20, S25)
North America	1	Adaptive governance; community–strategy integration with land-use tools	Institutional, Planning & Social (S21)
Latin America	1	Private-sector–led formalization; informality and tenure	Institutional, Legal & Planning (S5)
Global / Multi-region	12	Conceptual–framework consolidation; comparative cross-context analysis (incl. USA in S3)	All five dimensions; Technical–structural concentrated here (S4, S7, S8, S28)



Figure 5. Regional engagement profile heatmap. Average score (0–2) per region: (0= absent, 1= implicit/instrumental, 2= explicit/analytical) for each of the five analytical dimensions, computed from the three-level coding matrix (**Table 9**). Green = explicit/analytical engagement; yellow = implicit/instrumental; orange = absent. Regional averages were computed from the three-level engagement scores of the 30 included studies.

4.3 Dimensional Coverage Across Studies

Three-level coding of the studies is reported in **Table 9**, and the aggregate pattern is shown in **Figs. 6 and 7**. The institutional dimension is engaged in all 30 studies (coverage 100%), followed by planning (29/30; 97%), social (27/30; 90%) and legal (27/30; 90%). The technical dimension is the weakest part of the nexus: it appears in 19 studies (63%) but reaches full analytical integration (Score 2) in only 6 studies (20%). This distinction is important. The issue is not that technology is completely absent, but that it is often treated as a support tool rather than as a structural component of land governance and planning.

Table 9. Three-level analytical engagement coding matrix of the 30 included studies across the five analytical dimensions. 0 = absent/not addressed; 1 = implicit/instrumental; 2 = explicit/analytical. Per-column “Coverage” counts studies with Score 1 or 2; “Integration” counts only Score 2. Cells are colour-coded (green = 2, yellow = 1, orange = 0). Following the coding rules in **Table 2**.

Study	Institutional	Legal	Social	Technical	Planning
S1	2	2	2	1	2
S2	2	2	2	1	2
S3	2	0	2	0	2
S4	2	2	2	2	2
S5	2	2	2	0	2
S6	2	2	2	2	2
S7	2	2	2	2	2
S8	2	0	2	2	2
S9	2	2	2	2	2



Study	Institutional	Legal	Social	Technical	Planning
S10	2	2	2	0	2
S11	2	2	2	1	2
S12	2	0	2	1	2
S13	2	2	2	1	2
S14	2	2	2	0	2
S15	2	2	0	0	2
S16	2	2	2	1	2
S17	2	2	0	0	2
S18	2	2	2	1	2
S19	2	2	2	0	0
S20	2	2	2	1	2
S21	2	1	2	0	2
S22	2	2	0	0	2
S23	2	2	2	1	2
S24	2	2	2	1	2
S25	2	2	2	1	2
S26	2	2	2	1	2
S27	2	2	2	0	2
S28	2	2	2	2	2
S29	2	2	2	0	2
S30	2	2	2	1	2
Coverage (n) — Score 1 or 2	30	27	27	19	29
Integration (n) — Score 2 only	30	26	27	6	29

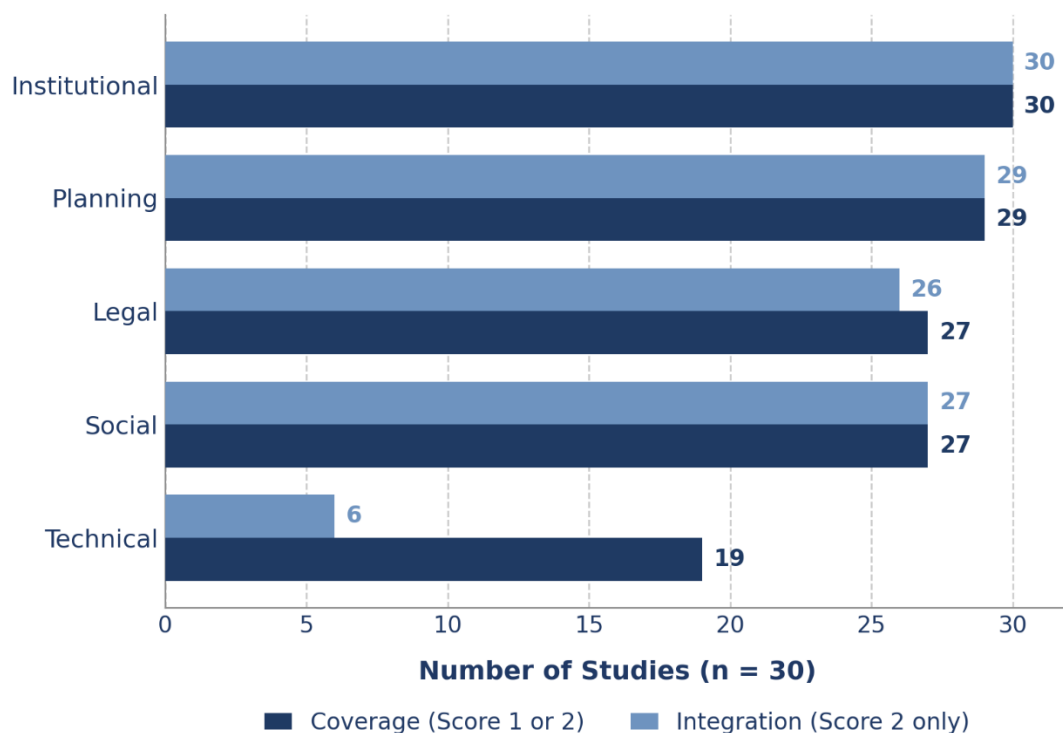


Figure 6. Coverage (Score 1 or 2) and analytical integration (Score 2 only) of the five dimensions across the 30 included studies. Based on **Table 9**.

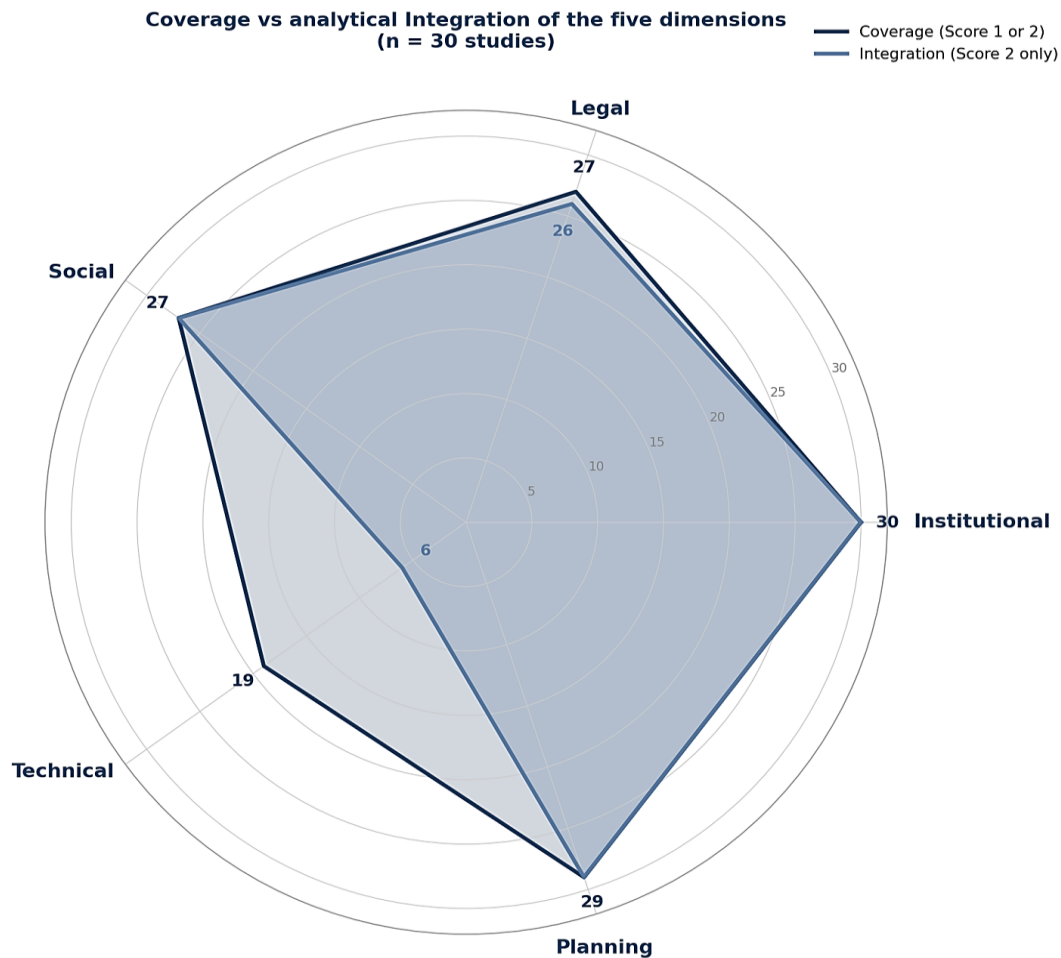


Figure 7. Radar chart comparing coverage (Score 1 or 2) and analytical integration (Score 2 only) across the five dimensions. Institutional and planning dimensions dominate, while the technical dimension is the least integrated. Based on **Table 9**.

4.4 Dominant Analytical Patterns

Three patterns emerge from the cross-tabulation of dimensional coverage with geographical scope as shown in **Table 10**:

1. Institutional and legal emphasis in Africa. African studies (S9, S11, S14, S17, S19, S23, S27, S29 and S30) cluster around fragmented institutional structures, overlapping mandates and tenure-related legal questions.
2. Strategic spatial planning in the Global North. European studies (S20, S21 and S25) and Australia (S26) emphasize multi-level strategic planning, participatory approaches and evidence-based planning in relatively stable institutional environments.
3. State-led reform in Asia. Chinese and Iranian studies (S2, S6, S15, S16 and S22) describe centralized national reforms in which planning and governance are reshaped jointly through large-scale modernization programmes.

**Table 10.** Cross-cutting trends and patterns identified in the reviewed literature. Based on the 30 included studies.

#	Trend	Brief description and exemplar studies
1	Institutional dominance with context-specific legal emphasis (Africa)	Fragmented governance, tenure rights, overlapping mandates (S9, S11, S14, S17, S29, S30).
2	Multi-level strategic planning (Global North)	Evidence-based, multi-scalar strategic planning (S20, S21, S25).
3	Centralised national reforms (Asia)	State-led integration of planning and governance (S2, S15, S22, S16).
4	Centrality of social distance (Latin America / Global South)	Spatial justice, participation, planning legitimacy (S27, S5, S18).
5	Uneven technical integration	GIS/SDI/3D-LAS treated as a structural component in S4, S6, S7, S8, S9, S28; treated only as an instrumental tool or absent in most Asian and several European studies (e.g. S15, S22, S25).
6	Multidimensional but partial integration	Most studies engage three or four dimensions analytically; only 5 studies (S4, S6, S7, S9, S28) reach full analytical Integration (Score 2) on all five dimensions.

4.5 Identified Research Gaps

The gaps that emerge from the coding matrix are not merely numerical. They point to weak connections inside the nexus itself. The most consequential gaps are the under-developed analytical role of the technical dimension, the limited translation of social participation into formal planning outcomes, the weak linkage between legal reform and social equity, persistent geographical gaps in the Middle East outside Iran, Central Asia and large parts of South America, and the absence of a fully integrated five-dimension model. These gaps are summarized in **Table 11**.

Table 11. Research gaps identified across the 30 included studies. Based on the 30 included studies and **Tables 9 and 10**.

Gap	Brief description	Where it appears in the sample
G1	Imbalanced representation of the five dimensions	Technical Coverage 19/30 and Integration only 6/30 vs. institutional 30/30, planning 29/30.
G2	Limited analytical integration of the technical dimension	In the majority of studies, GIS/SDI is used as an instrumental tool rather than as a structural analytical component (Score 1 in S20, S25, S26 vs. Score 2 in S4, S6, S7, S8, S9, S28)
G3	Weak translation of social considerations into formal planning	Social participation reported as a procedural step rather than analyzed as a determinant of planning outcomes in several studies (e.g. S5, S18, S27).
G4	Limited legal–social linkage	Studies analyzing legal reform without explicit social-equity or participation analysis (S15, S17, S22).
G5	Persistent geographical gaps	Middle East outside Iran; Central Asia; much of South America.
G6	Over-emphasis on the institutional dimension	Institutions used as dominant explanatory lens across the sample.
G7	Absence of a fully integrated five dimension Nexus model	No study integrates all five dimensions in a single model.
G8	Limited assessment of long-term effects of digital transformation	Technical studies focus on tools, not on state–society implications.



Taken together, these descriptive and gap-analysis findings establish what the reviewed literature covers and where it falls short; the following section turns to why these patterns emerge and what they imply for future research on the Governance-Planning Nexus. The dimensional pattern documented above raises three interrelated analytical observations. Together, they show that the Governance-Planning Nexus is not absent from the literature but is unevenly assembled.

4.6 The Dominance of the Institutional Dimension

Institutions dominate not because other dimensions are unimportant, but because institutions are easier to see, name and compare. Ministries, cadastral agencies, planning departments and formal mandates are visible units of analysis, and they fit comfortably within qualitative case-study designs, which are common in the sample **Table 6**. This visibility, however, can become an analytical bias. When institutions become the default explanation, legal, social and technical dimensions risk being pushed into the background, even though they may independently shape land-use outcomes. Future research should therefore treat institutions as one part of the nexus, not as a substitute for the nexus as a whole (**Healey, 2006; Feng et al., 2024**).

4.7 The Relative Weakness of the Technical Dimension

The technical dimension tells a different story. It is present, but often in a quiet and supporting role. The under-representation of this dimension (coverage 63%; analytical integration 20%) is striking in a period when policy discourse increasingly emphasizes data-driven planning, digital cadasters and 3D land administration (**Ramezani et al., 2023; Costa et al., 2024; Hoddy et al., 2025**). Three explanations emerge from the sample. Digital infrastructures are unevenly distributed, especially between well-resourced and resource-constrained contexts. In many Global South studies, tools such as GIS are used to illustrate or support analysis rather than to explain governance arrangements. Finally, the field still tends to privilege qualitative-institutional reasoning over data-infrastructure analysis. This means that the technical dimension is not simply missing; it is under-theorized.

Each of these three explanations deserves closer inspection, because they operate through different mechanisms and therefore call for different remedies. The infrastructural explanation is not simply a matter of resources. A digital cadaster or a spatial data infrastructure presupposes institutional preconditions — near-complete parcel registration, mandates for inter-agency data sharing, and recurrent maintenance budgets — that many land administration systems in the Global South do not yet meet, which is precisely why the fit-for-purpose land administration agenda emerged as a pragmatic alternative to full cadastral digitization (**Enemark, 2015**). Where the underlying infrastructure is partial, the technical dimension can only ever appear in an instrumental role, because there is no stable data layer for scholarship to treat as an object of governance analysis in its own right. The methodological explanation follows a different logic: when spatial tools are used to map outcomes rather than to interrogate how land information is produced, standardized, owned and exchanged, the resulting studies register technical presence without technical integration — exactly the Score 1 pattern that dominates the coding matrix. Questions of data interoperability, platform dependency and the standardization of land-administration domain models are raised in the reviewed sample almost exclusively by the system-design studies (**Kalogianni et al., 2020; Sofianopoulos et al., 2025**), and hardly at all by the case-



study literature, which suggests that the gap is one of research design rather than of empirical opportunity.

The third, disciplinary explanation may be the most consequential, because it shapes the other two. Land governance scholarship has largely inherited its analytical vocabulary from institutional and planning theory, in which technical systems are conventionally treated as neutral instruments that implement decisions made elsewhere. Yet digital land infrastructures are not neutral: their data standards, access rules and updating protocols allocate informational advantage among state agencies, private intermediaries and landholders, and in that sense, they function as institutions in their own right. Reading them this way would move the technical dimension from the periphery of the Nexus to a position where its couplings with the legal and social dimensions — currently the weakest links identified in Section 4.9 — become empirically tractable. Until the field makes that move, the under-representation documented here (gaps G2 and G8) is likely to persist regardless of how quickly digital land administration expands in practice.

4.8 Implications for the Governance-Planning Nexus

The broader message is that the Governance-Planning Nexus is unevenly built. It has two strong components, institutional and planning; two intermediate components, legal and social; and one structurally underdeveloped component, technical. The integration among these components is weaker than the visibility of any one component on its own. This finding is consistent with Healey's argument that planning systems cannot be understood outside governance arrangements (**Healey, 2006**), and it extends Krawchenko and Tomaney's multi-scalar framework (**Krawchenko and Tomaney, 2023**) by showing where multidimensional integration is currently strongest and weakest.

This unevenness is not distributed randomly across the sample; it tracks the governance context in which each body of scholarship is situated, and that context deserves to be treated as an explanatory variable in its own right rather than as background information. The African cluster ($n = 9$), the largest in the sample, converges overwhelmingly on the institutional and legal dimensions as in **Table 8**, a pattern that reflects the enduring coexistence of customary and statutory tenure systems across much of the continent. Where colonial-era statutory law was superimposed on pre-existing customary regimes rather than replacing them, land governance research has little choice but to foreground institutional fragmentation and legal pluralism as analytical entry points, because these are the terms in which land conflicts and reforms are actually negotiated on the ground (**Chimhowu, 2019**). The Asian cluster ($n = 5$, concentrated in China and Iran) shows a comparably strong institutional dimension, but for a structurally different reason: centralized, state-led reform produces land governance systems in which institutional and planning instruments are deliberately, rather than incidentally, coupled, so that studies of Chinese and Iranian land policy tend to read planning outcomes directly off institutional design (**Ho, 2001**). European studies ($n = 2$), by contrast, engage all five dimensions more evenly, which is consistent with a planning tradition that has long theorized itself as multi-level and path-dependent, embedded in national social models that constrain how far governance instruments can be transferred or standardized across contexts (**Nadin and Stead, 2008**). The single North American study in the sample (S21, eight Alberta communities) foregrounds institutional, planning and social dimensions together, mirroring a collaborative-governance tradition in which legitimacy is built through negotiated, multi-actor planning processes rather than through statutory instruments alone (**Innes and Booher, 2010**). The Latin American case



(S5, Brazil) shows a narrower institutional–legal–planning triad, which fits a regional literature more concerned with regularizing informality through private-sector-led formalization than with elaborating participatory or technical infrastructure (**Fernandes, 2011**).

Read together, these regional profiles indicate that the same five-dimensional framework surfaces different couplings depending on the governance tradition it is applied to, and that this is a feature of the evidence rather than an artefact of the coding scheme. A framework built primarily on African and Asian material, in other words, would foreground different dimensions than one built on European or Latin American material, simply because the underlying governance systems make different dimensions analytically visible. This has a direct bearing on the geographical gap identified as G5: because Europe, North America, Latin America, the Middle East outside Iran and Central Asia remain thinly represented, several plausible dimensional couplings, particularly those involving multi-level European governance and Latin American informality, are still underspecified in the literature, and closing this gap is as much a theoretical priority as a geographical one.

4.9 From Classification to Interaction: Reading the Nexus as a Complex Configuration

The five-dimensional framework was designed, in the first instance, as a classificatory instrument, and the results above applied it in that spirit. Classification, however, is only the first analytical step. The harder question is how the five dimensions act upon one another, because governance and planning outcomes are rarely produced by any single dimension working alone. Systems-oriented scholarship offers useful vocabulary for this move. Land governance can be read as a social-ecological system in Ostrom's sense, in which legal rules, organizational mandates, social practices and technical infrastructures operate as interacting subsystems rather than as separate variables (**Ostrom, 2009**). Governance theory reaches a similar conclusion from a different starting point: complex governance settings behave adaptively, and their outcomes cannot be traced back to a single institutional lever (**Folke et al., 2005; Duit and Galaz, 2008**). Planning theory recognized this condition much earlier. Land-use problems are “wicked” precisely because their legal, social and technical components are entangled (**Rittel and Webber, 1973**), and collaborative and complexity-informed planning scholarship has since treated planning systems as networks of interdependent actors rather than hierarchies of decisions (**de Roo and Silva, 2010; Innes and Booher, 2010; Klijn and Koppenjan, 2016**).

Read through this lens, the coding results reported above acquire a second meaning. **Fig. 8** translates the coding matrix of **Table 9** into an interaction map, in which the weight of each link reflects how frequently two dimensions were analytically integrated within the same study. Three structural properties stand out. First, the institutional–planning and institutional–legal couplings carry most of the analytical load in the literature; they are the connections through which authors most often explain land-use outcomes. Second, every link involving the technical dimension is weak. This is a more precise diagnosis than simply noting that the technical dimension is under-represented: even where digital tools appear, they are rarely coupled analytically to legal frameworks or social practices, so their governance effects remain untraced. Third, and most importantly, the Nexus behaves as an emergent configuration. Its explanatory power lies in the pattern of couplings rather than in the presence of any individual dimension, which is why studies that score highly on several dimensions in isolation can still fail to integrate them into a single explanatory frame, as gap G7 records.

This reading carries a practical consequence for how the framework should be used. Coding for the presence of dimensions, as in this review, is a necessary first pass; a second pass should assess the couplings between dimensions, asking not only “is the legal dimension addressed?” but “is the legal dimension connected, in the author’s own argument, to social practice, to technical infrastructure, or to planning outcomes?” Treating the Nexus as a configuration of couplings converts the framework from a descriptive checklist into an explanatory device, and it aligns the study of land governance with the broader adaptive-systems tradition in governance research (Folke et al., 2005; Duit and Galaz, 2008).

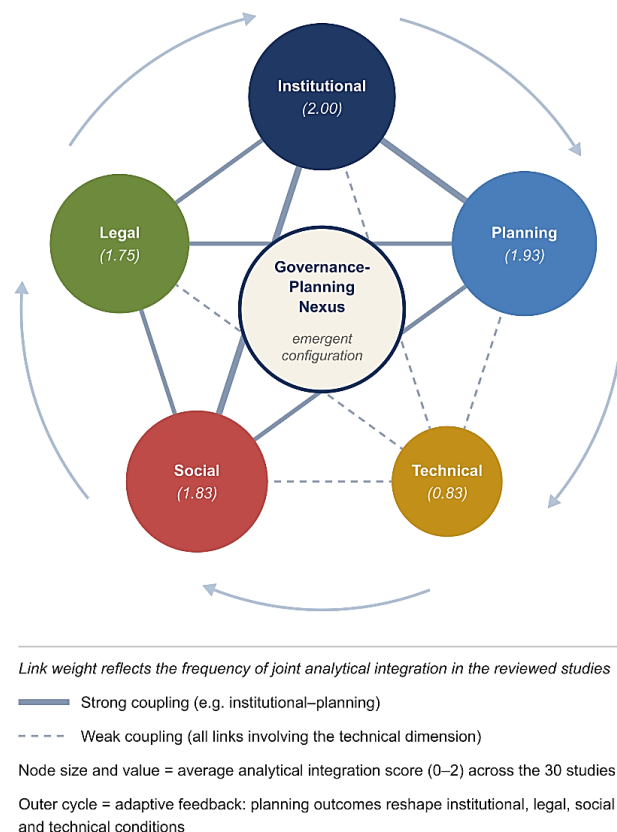


Figure 8. Interaction map of the five analytical dimensions of the Governance-Planning Nexus. Link weight reflects the frequency with which two dimensions were analytically integrated within the same study; dashed links denote weak coupling. Node size and the value in parentheses show each dimension’s average analytical integration score (0–2) across the 30 reviewed studies. The outer cycle represents adaptive feedback from planning outcomes to governance conditions (Table 9).

Future research therefore needs to move beyond asking whether governance and planning are connected. The more important question is how that connection is assembled, through which dimensions, and with what consequences. Three directions follow. First, technical infrastructures such as GIS, SDI and digital cadasters should be analyzed as governance structures, not only as mapping tools. Second, nexus studies should expand to under-represented regions, particularly the Middle East outside Iran, Central Asia and South America. Third, the field needs explicit and replicable five-dimensional models that connect legal frameworks, social practices, technical systems and planning outcomes within the same analytical design.

Several limitations should be acknowledged. First, the review covered five major databases but did not include grey literature, non-peer-reviewed reports by international agencies or



non-English publications; this may have biased the sample toward English-language scholarly conventions and better-indexed regions. Second, the three-level coding scheme (0/1/2), although more sensitive than the original binary scheme, still relies on the judgement of a single main coder. Ambiguous cases were discussed with the co-author until consensus was reached, but fully independent dual coding and an inter-rater agreement statistic, such as Cohen's kappa, were not used. Third, the search cut-off date of 14 November 2025 means that later publications are not represented. Fourth, neither backward/forward citation chasing nor formal quality appraisal of individual studies was undertaken. This is acceptable for a scoping review, but it limits the depth of the synthesis. Finally, the review maps analytical patterns; it does not aggregate effect sizes or quantitative outcomes. Future reviews of this literature would benefit from a fully independent double-coding protocol accompanied by a formal inter-rater agreement statistic such as Cohen's kappa, together with a structured quality-appraisal instrument such as the Mixed Methods Appraisal Tool (Hong et al., 2018), both of which were beyond the resource scope of the present single-institution review but would strengthen the evidentiary basis of future syntheses of this literature.

5. CONCLUSIONS

Overall, this study sets out to develop a five-dimensional analytical framework for the Governance-Planning Nexus, and the systematic scoping review conducted for this purpose shows that the Governance-Planning Nexus has become an important but still uneven field of inquiry. By applying a theory-informed five-dimensional framework to 30 peer-reviewed studies published between 2015 and 2025, the review shows that institutional and planning dimensions are strongly represented, legal and social dimensions are present but not always well connected, and the technical dimension remains the least integrated. Geographically, the reviewed literature is concentrated in Africa, China and Iran, with much weaker representation from Europe, North America, Latin America, the Middle East outside Iran and Central Asia.

The main contribution of the article is the five-dimensional analytical framework and its operational coding scheme, which make this uneven architecture visible. Conceptually, it translates institutional planning theory and multi-scalar governance into a usable five-dimensional analytical lens. Empirically, it shows where literature is strong, where it is partial and where future research can produce more integrated knowledge. The study therefore offers a framework not only for describing the existing literature, but also for designing the next generation of studies on land governance and land-use planning. Beyond its descriptive and conceptual contribution, the five-dimensional lens is intended as a working instrument for future empirical research, not only as a device for synthesizing existing literature. A natural next step is to apply the framework to single-city or single-region case studies in contexts that remain thinly represented in the reviewed sample — the Middle East outside Iran being one such context — where it could be used to diagnose, rather than merely classify, which of the five dimensions are weakly coupled in a specific governance setting and where reform effort might therefore be most productively directed. Used this way, the framework shifts from an analytical map of literature to a diagnostic tool for practice, capable of informing land-governance reform priorities in rapidly urbanizing contexts where institutional, legal, social and technical arrangements have evolved unevenly.



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Credit Authorship Contribution Statement

Hala Musa: Conceptualization, Methodology, Formal analysis, Data curation, Writing – original draft, Writing – review and editing. Mojtaba Rafieian: Conceptualization, Methodology, Writing – original draft, Writing – review and editing, Supervision, Project administration. Seyed Ali Safavi: Writing – review and editing, Project administration.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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حوكمة الأراضي وتخطيط استخدام الأراضي: نحو إطار تحليلي متكامل للعلاقة بين الحوكمة والتخطيط

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الخلاصة

غالبًا ما يُنظر إلى حوكمة الأراضي وتخطيط استخدامات الأراضي بوصفهما مجالين منفصلين، إلا أنهما يلتقيان عمليًا في كل موضع تتفاعل فيه حقوق الأراضي، والقرارات المؤسسية، والتنظيمات المكانية في تشكيل الواقع العمراني والمكاني. تهدف هذه الدراسة إلى تطوير إطار تحليلي خماسي الأبعاد لقراءة ترابط الحوكمة والتخطيط. (Governance–Planning Nexus) ولتحقيق ذلك، جرى تحديد الأدبيات ذات الصلة وتجميعها وتحليلها من خلال مراجعة نطاقية منهجية (Systematic Scoping Review) أُجريت ووُثِّقت وفقًا لإرشادات PRISMA–ScR. ويستند الإطار إلى نظرية التخطيط المؤسسي (Institutional Planning Theory)، وقد استُخلص من أربعة مراجع دولية هي: المبادئ الطوعية للحوكمة المسؤولة لحيازة الأراضي (FAO–VGGT)، وإطار تقييم حوكمة الأراضي للبنك الدولي (World Bank–LGAF)، والمبادئ التوجيهية الدولية للتخطيط الحضري والإقليمي التابعة لموئل الأمم المتحدة (UN–Habitat–IGUTP)، والشبكة العالمية لأدوات الأراضي (GLTN). ويعمل هذا الإطار من خلال خمسة أبعاد رئيسية هي: البعد القانوني، والبعد المؤسسي، والبعد الاجتماعي، والبعد التقني، والبعد التخطيطي. وشملت عملية البحث خمس قواعد بيانات هي Scopus، و Web of Science، و ScienceDirect، و SpringerLink، و Taylor & Francis Online، وذلك للبحث عن الدراسات المحكمة المنشورة خلال الفترة من 2015 إلى 2025. وبعد إجراء عملية فرز مكونة من ثلاث مراحل، تم الاحتفاظ بـ 30 دراسة، ثم ترميزها وفق مخطط تدرجي ثلاثي لمستوى الاندماج = 0 : غياب البعد، 1 = حضور ضمني/وظيفي، 2 = حضور صريح/تحليلي. وأظهرت النتائج وجود بنية واضحة، ولكنها غير متوازنة. فقد ظهر البعد المؤسسي في جميع الدراسات الثلاثين، تلاه البعد التخطيطي (29 من أصل 30)، ثم البعد الاجتماعي والقانوني (27 من أصل 30 لكل منهما)، في حين كان البعد التقني هو الأضعف، إذ ظهر في 19 دراسة فقط، ولم يُدمج بصورة تحليلية إلا في 6 دراسات. كما بينت النتائج أن الدراسات الإفريقية ركزت بصورة رئيسية على القضايا المؤسسية والقانونية، بينما أولت الدراسات الأوروبية والأمريكية الشمالية اهتمامًا أكبر بالاستراتيجيات متعددة المستويات والتخطيط القائم على المشاركة المجتمعية، في حين أن عددًا محدودًا فقط من الدراسات دمج الأبعاد الخمسة جميعها ضمن إطار تفسيري واحد. وتتمثل المخرجات الرئيسية لهذه الدراسة في تقديم إطار تحليلي خماسي الأبعاد قابل للتكرار والتطبيق، مدعومًا بمخطط ترميز تشغيلي يمكن استخدامه في الدراسات المستقبلية. وتُظهر الأدلة أن الفجوة الأساسية لا تكمن في غياب الحوكمة أو التخطيط بحد ذاتهما، وإنما في الدمج الجزئي وغير المتوازن لمكوناتهما القانونية والاجتماعية والتقنية والمؤسسية ضمن ممارسات تخطيط استخدامات الأراضي.

الكلمات المفتاحية: الإطار التحليلي، تخطيط استخدامات الأراضي، حوكمة الأراضي، العلاقة بين الحوكمة والتخطيط، المراجعة النطاقية.