



RESEARCH ARTICLE

Section: *Literature, Linguistics & Criticism***Language, sustainability, and essential-needs supply security: A Framing analysis of Saudi institutional and official-news discourse**Saif Abdullah Altamimi^{1*} & Neelofar Hussain Wani²¹Department of English Language and Literature, College of Science and Humanities, Prince Sattam bin Abdulaziz University²Department of English, College of Languages and Translation, King Khalid University Abha, Kingdom of Saudi Arabia*Correspondence: sai.altamimi@psau.edu.sa**ABSTRACT**

Environmental sustainability and the secure provision of food and water are often discussed separately, although they are inseparable in an arid, import-dependent setting. This article examines how Saudi public institutions and the Saudi Press Agency give linguistic form to that relationship. It draws on a purposive bilingual corpus of eighteen Arabic and English webpages and news releases issued by Vision 2030, the Saudi Green Initiative, the Ministry of Environment, Water and Agriculture, the Saudi Water Authority, the General Food Security Authority, and the Saudi Press Agency. Entman's framing model guides analysis of problem definitions, causes, evaluations, and remedies; metaphor, agency, modality, and temporal orientation reveal how those functions are realised. The analysis identifies a security-continuity frame joining reliable supply to resilience; a stewardship frame centred on resources and future generations; a transformation frame casting sustainability as a national journey; and a managerial-integration frame organised around efficiency, infrastructure, and anticipatory planning and governance. A quieter responsibility-partnership frame appears in references to consumption, food loss, water demand, partnership, and awareness. Security-continuity functions as the principal bridging frame across environmental sustainability and essential-needs supply, while leaving affordability, distribution, household practice, and ecological limits comparatively less visible. The study contributes a bilingual, cross-domain account of Saudi sustainability communication and clarifies its selective alignment with SDG 12 and linked goals.

KEYWORDS: framing theory, sustainability communication, food security, water security, Saudi Arabia, institutional discourse, SDG 12, bilingual discourse

Research Journal in Advanced Humanities

Volume 7, Issue 3, 2026

ISSN: 2708-5945 (Print)

ISSN: 2708-5953 (Online)

ARTICLE HISTORY

Submitted: 13 June 2026

Accepted: 19 July 2026

Published: 28 August 2026

HOW TO CITE

Altamimi, S. A., & Wani, N. H. (2026). Language, sustainability, and essential-needs supply security: A Framing analysis of Saudi institutional and official-news discourse. *Research Journal in Advanced Humanities*, 7(3). <https://doi.org/10.58256/ngdye448>



Published in Nairobi, Kenya by Royallite Global, an imprint of Royallite Publishers Limited

© 2026 The Author(s). This is an open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

1. Introduction

The continuity of food and water supply is a basic test of public institutions. Environmental sustainability places a second demand on the same institutions: essential needs must be met without exhausting the resources on which future provision depends. These demands can reinforce one another. Efficient irrigation, lower food loss, water reuse, conservation, and better demand management can improve both supply security and environmental performance. They can also pull in different directions. New production capacity and larger strategic reserves may reduce immediate vulnerability while increasing energy, water, or material use. Conservation measures may protect resources while asking consumers, firms, or farmers to alter familiar practices. Public communication matters at precisely this point because policy language tells audiences what the problem is, where responsibility lies, and which forms of action appear reasonable.

Saudi Arabia offers a particularly revealing setting in which to study this relationship. The country combines an arid climate and scarce renewable freshwater with large urban systems, energy-intensive desalination, a substantial reliance on food imports, and an ambitious national transformation programme. The National Water Strategy acknowledges rapid depletion of non-renewable groundwater, high agricultural demand, network losses, and the cost of urban water services, while defining a sustainable water sector in terms of environmental protection, continuous access, affordability, quality, and demand management (Ministry of Environment, Water and Agriculture [MEWA], n.d.). Research on Saudi water use likewise stresses that supply expansion alone cannot settle the problem. Household behaviour, conservation, reuse, governance, and pricing all shape the long-term balance between availability and sustainability (Almulhim & Abubakar, 2023, 2024; Mir & Ashraf, 2023). Food security raises a related set of questions. Strategic reserves, diversified imports, domestic production, early warning, and emergency planning strengthen continuity, but food loss, dietary patterns, agricultural water use, and the environmental cost of production connect security to SDG 12 as well as SDGs 2 and 6 (Baig et al., 2019a, 2019b, 2022; Haque & Khan, 2022).

These material conditions do not enter public life without interpretation. They are selected, named, and arranged into stories about risk, progress, duty, innovation, and national development. A reservoir can be represented as infrastructure, a strategic shield, a public service, or an ecological intervention. Food waste can be framed as an economic loss, a moral failure, a security risk, or a circular resource. Desalination can signify reliable provision and technical leadership, but it can also raise questions about energy intensity and environmental cost. Each description foregrounds some relationships and recedes others. Framing analysis is therefore useful not because it treats language as a substitute for policy, but because it reveals the public reasoning through which policy priorities become coherent and legitimate.

Existing scholarship provides important parts of this picture. Studies have assessed the sustainability content of Vision 2030 (Alshuwaikhat & Mohammed, 2017), examined Saudi environmental sustainability in online media (Almaghlouth, 2022), analysed media representations of the Saudi Green Initiative (Hameed et al., 2022), and explored the country's circular-economy and resource-nexus agenda (Almulhim & Al-Saidi, 2023). Work on Gulf food governance has shown how the language of security can depoliticise distribution by presenting food policy chiefly as technical management (Henderson, 2022). Water studies, meanwhile, document the need for demand-side interventions and differentiated communication to households (Almulhim & Abubakar, 2024). Yet the discursive connection between environmental sustainability and the security of food and water has received less direct attention. A previous study by Altamimi and Wani (2026) identified this connection through the metaphorical framing of 36 salient expressions drawn from the SGI, GFSA, and SWA. The study identified a metaphor system organised around journey, security, reserve, system management, and early warning, linking sustainability with national transformation, future generations, and essential resources. The present study, however, extends the analysis beyond metaphor to examine broader framing structures and multiple linguistic devices across institutional and official-news genres, while using the SDGs, particularly SDG 12, as an interpretive lens for examining patterns of discursive emphasis and relative silence. Furthermore, on the micro-level, the previous study treated security and continuity as distinguishable patterns, whereas the present whole-text analysis reveals their systematic functional integration. The gap is not an absence of studies on sustainability or security. It lies in the limited integration of two essential-needs domains, two languages, and more than one official genre within a single framing analysis.

The present article addresses that gap through a bounded study of Saudi institutional and official-news

discourse. This wording is deliberate. A corpus drawn from government portals and the Saudi Press Agency cannot stand for public opinion or for the full range of discussion among citizens, businesses, independent commentators, and civil society. It can, however, show how authoritative public-facing actors formulate problems and solutions and how official news reproduces or adapts those formulations. Narrowing the claim protects the analysis from a common error: treating official communication as if it were the public itself.

The study asks four questions:

1. Which frames organise the relationship between environmental sustainability and food-and-water supply security in the sampled Saudi discourse?
2. How do lexical choice, metaphor, modality, agency, evaluation, and temporal language realise those frames?
3. How do the frames define problems, attribute causes, assign responsibility, and legitimise preferred remedies?
4. How are the identified frames configured in the sampled corpus across institutional webpages and official-news texts, and across food- and water-focused materials, and which dimensions of SDG 12 are comparatively less salient?

For clarity, the Sustainable Development Goals (SDGs) are the United Nations' set of 17 global goals for sustainable development, adopted as part of the 2030 Agenda, and used here as a policy vocabulary for discussing linked social, economic, and environmental priorities (United Nations General Assembly, 2015). In this article, the SDGs are used as an interpretive lens, especially SDG 12 on responsible consumption and production, rather than as a performance score. The article makes three contributions. First, it identifies security-continuity as an integrated cross-domain bridging frame that discursively connects environmental sustainability with food- and water-supply security. Second, by analysing complete institutional and official-news texts across Arabic and English and across food and water domains, it shows how a shared policy architecture is differently configured by genre and domain. Third, using the SDGs, particularly SDG 12, as an interpretive lens, it identifies patterns of discursive emphasis and relative silence, showing stronger attention to resource efficiency, waste reduction, sustainable organisational practice, and awareness than to some demand-side and deliberative dimensions of sustainability.

2. Literature Review

2.1 Framing, language, and sustainability communication

Framing begins from a simple observation: communication is necessarily selective. Entman (1993) describes framing as selecting aspects of perceived reality and making them more salient so that a text promotes a problem definition, causal interpretation, moral evaluation, or treatment recommendation. These functions often overlap. A phrase such as “water security” names a valued condition, presupposes possible disruption, and invites measures that promise continuity. The word “waste” identifies an undesirable practice and carries an evaluation before any explicit judgment is added. A declaration of “transformation” constructs the present as an incomplete stage in a purposeful movement toward a better future.

Entman's four functions are especially useful for policy discourse because they prevent analysts from reducing a frame to a topic or repeated keyword. Sustainability is a topic; “stewardship for future generations” is a frame when it defines resource depletion as a problem, attributes responsibility to present users and institutions, evaluates conservation positively, and recommends protective action. Food security is a policy domain; “resilience through strategic readiness” becomes a frame when threats and volatility are treated as causes, continuity as a moral and administrative obligation, and reserves, diversification, or early warning as remedies.

Gamson and Modigliani (1989) extend this logic through the notion of an interpretive package. In this article, an interpretive package means a recurring cluster of words, metaphors, examples, evaluations, causal claims, and policy remedies that together invite readers to understand an issue in a particular way. Packages gather metaphors, exemplars, catchphrases, visual labels, causal claims, and policy positions around a central organising idea. Their approach matters here because official Saudi communication frequently combines

programmatic labels with recurring images of journeys, pillars, integration, protection, leadership, and national ambition. A frame is not established by the mere presence of one of these words. It becomes analytically persuasive when several devices converge on a stable way of understanding the issue across texts and institutions.

Linguistic analysis adds precision to frame identification and is well established in environmental communication research (Schäfer & O'Neill, 2017). Metaphor can compress a complex policy programme into a familiar scene: a journey has direction, stages, obstacles, and leadership; a pillar bears weight; a shield guards against danger; a circular system replaces loss with renewed value. Charteris-Black (2004) and Semino (2008) show that metaphor does more than decorate a message. It organises inference and evaluation. Agency is equally consequential. Active clauses can name the state, an authority, a company, or citizens as responsible actors, while nominalisations such as “development,” “management,” and “transition” may background the people who decide and act. Modality distinguishes commitment from aspiration: will, must, seeks to, and aims to carry different degrees of force. Pronouns construct political community, and temporal expressions connect current sacrifice to future benefit.

Framing scholarship also warns against moving too quickly from textual patterns to social effects. Media frames can shape interpretation, but the presence or frequency of a frame does not prove that audiences accept it (Scheufele, 1999). Reliable frame analysis therefore requires transparent definitions, contextual coding, and attention to competing cases (Matthes & Kohring, 2008; Krippendorff, 2019). The present study follows that caution. It identifies what the sampled texts make available as an interpretation; it does not claim to measure persuasion, behavioural change, or policy success.

Sustainability communication also involves a distinction, adapted from Newig et al.'s (2013) wider account of communication regarding sustainability, between communication of sustainability and communication about sustainability. The first transmits goals, programmes, and approved practices. The second opens the meaning of sustainability to discussion, conflict, and revision. Institutional communication often performs both functions unevenly. It explains programmes and encourages participation, yet it may also present the preferred path as settled. This tendency is not unique to Saudi Arabia. Sustainability discourse widely favours narratives of green growth, innovation, transition, resilience, circularity, and responsible consumption. These narratives can mobilise action, but each simplifies. Innovation narratives may understate political choices; individual-responsibility narratives may understate institutional power; crisis narratives may justify urgency while narrowing deliberation.

The literature on food-system narratives illustrates the stakes. Béné et al. (2019) identify competing accounts that prioritise efficiency, demand restraint, technological transformation, or broader changes to food systems. Because each narrative begins from a different diagnosis, it recommends different interventions. Marinescu (2021) similarly shows that sustainable-food communication does not merely convey information; it constructs public meanings around consumption and responsibility. Taken together, these studies suggest that food discourse must attend to access, responsibility, and the organisation of supply as well as production and consumer choice. These insights are relevant to Saudi supply security, where the language of reserves, trade, investment, domestic production, and waste can either connect or separate environmental and distributive concerns.

2.2 Security, resilience, and the water-food nexus

Security is an unusually powerful frame because it links basic need to possible interruption. In food policy, security commonly includes availability, access, utilisation, and stability. In water policy, it may include adequate quantity, acceptable quality, affordability, ecological protection, and resilience to shocks. The concept can build a broad coalition: engineers, planners, businesses, households, and environmental actors can all support reliable provision. Yet the breadth that gives security its appeal can also conceal disagreements over who bears costs, which risks receive priority, and whether the preferred response expands supply or restrains demand.

Research on the water-energy-food nexus makes this tension visible. Wiegand and Bruns (2018) argue that dominant nexus discourse often joins scarcity and risk to an ecological-modernisation frame in which better measurement, integration, efficiency, markets, and technology promise to reconcile growing demand with limited resources. They also identify a less visible counter-discourse that questions this managerial optimism by drawing attention to distribution, power, and historically produced inequality. The point is not that planning

or technology are unimportant. It is that they carry a politics even when presented as neutral optimisation.

Resilience works in a similar way. In broad resilience scholarship, it names the capacity of a system to absorb disturbance, maintain essential functions, recover, and adapt (Meerow et al., 2016). In climate-security debate, however, resilience can preserve traditional security priorities if institutions use it mainly to manage shocks without examining their deeper causes (Ferguson, 2019). Applied to food and water, resilience may encompass strategic storage, diverse supply routes, emergency planning, redundant infrastructure, flexible production, conservation, and social protection. The breadth of the term makes close textual analysis necessary: who or what is expected to be resilient, against which threat, by what means, and for whose benefit?

Saudi water research supports the need to distinguish supply and demand. MEWA's National Water Strategy gives continuous access a central place but also acknowledges scarcity, agricultural abstraction, groundwater depletion, losses, affordability, and demand management. Mir and Ashraf (2023) review the sector's structural challenges and the role of desalination, wastewater reuse, and governance. Almulhim and Abubakar (2023) argue for a conservation strategy combining efficient technologies, reuse, education, public awareness, and institutional measures. Their later household study identifies distinct consumer segments, suggesting that a single undifferentiated appeal to conserve water is unlikely to work equally well across the population (Almulhim & Abubakar, 2024). These studies make an important communication point: a secure supply may be publicly associated with infrastructure, but long-term security also depends on ordinary use, incentives, and credible accounts of shared responsibility.

Food policy contains a parallel distinction. A supply-side frame emphasises domestic production, international investment, import diversification, storage, logistics, and market monitoring. A demand- and system-side frame adds nutrition, loss and waste, consumption, access, and the resource intensity of food. Henderson's (2022) critical account argues that food-security policy in Gulf states can take the form of technocratic knowledge-power, in which specialised institutions define the problem, produce authoritative data, and legitimise corporate and state-led solutions. The present article uses that argument as a cautionary point rather than as a complete description of the Saudi corpus. It draws attention to what managerial competence may leave unstated, but the sampled Saudi policy pages do not fit a purely supply-expansion account. They also mention sustainable agricultural practice, efficient resource management, water rationalisation, food loss, waste, healthy diets, support for small producers, and social access. The empirical question is therefore not whether sustainability appears, but how strongly its different dimensions are joined to security.

Saudi scholarship documents the material reasons for that connection. Haque and Khan (2022) show how temperature change threatens crop yields and increases future dependence on volatile external supplies. Baig et al. (2019a, 2019b) review food waste as an economic, environmental, and social concern and call for coordinated roles across public agencies, firms, non-profits, consumers, and researchers. Later work identifies the causes and consequences of waste and the need for public education and policy intervention (Baig et al., 2022). Food loss and waste are not marginal to security: they represent discarded water, energy, labour, land, transport, and purchasing power. Their inclusion in official discourse would therefore signal a movement from simple supply sufficiency toward resource stewardship and responsible consumption.

2.3 Saudi sustainability discourse and the remaining gap

Vision 2030 changed the scale and visibility of sustainability language in Saudi national development. Alshuwaikhat and Mohammed (2017) found substantive sustainability elements in the Vision and National Transformation Programme while also identifying areas that required deeper integration. Zaidan et al. (2019) situate Gulf sustainability within the region's resource, economic, and institutional conditions, where development ambitions must confront water, food, and energy vulnerability. Almulhim and Al-Saidi (2023) show how circular-economy and resource-nexus thinking has gained policy relevance in Saudi Arabia, particularly through attempts to align resource efficiency with national development.

Discourse studies add a linguistic account of this shift. Almaghlouth's (2022) corpus-based study of Saudi online media identifies an action-oriented environmental discourse marked by top-down initiation and supporting narratives of national sustainability. Hameed et al. (2022) find that Middle Eastern media present the Saudi Green Initiative as a potentially transformative programme while giving uneven attention to its several environmental targets. These studies establish that environmental policy is communicated through recurrent

patterns of action, leadership, and futurity. They do not, however, make food and water security the central comparative axis.

This omission matters because supply security changes the moral and temporal force of sustainability. Environmental protection may otherwise be heard as a long-term aspiration; security brings it into the present by tying it to continuity of life and public service. Conversely, security without sustainability may privilege capacity and reserves while postponing the ecological consequences of provision. Studying the two together reveals which bridge is built between them.

The present study therefore focuses on the intersection of environmental sustainability and food-and-water security across institutional webpages and official news in Arabic and English. It does not attempt to reproduce the full Saudi public sphere. Instead, it asks how authoritative public discourse makes the intersection intelligible, legitimate, and actionable.

3. Theoretical and Analytical Framework

The analysis combines Entman's four framing functions with a linguistic account of framing devices. At the first level, each passage was examined for what it presented as the problem, what it treated as a cause or source of risk, what it praised or criticised, and what it recommended. At the second level, the study asked how language performed those functions. The principal devices were labels, metaphor, agency, modality, evaluation, temporality, pronouns, nominalisation, and quantification.

The framework distinguishes a topic from a frame. A passage about desalination belongs to the water domain, but it can realise several frames. If it emphasises dependable supply during scarcity, it supports security and continuity. If it foregrounds efficiency, lower impact, or renewable energy, it supports stewardship or ecological modernisation. If it presents a new facility as evidence of national achievement, it supports transformation and leadership. The distinction avoids counting every reference to water or sustainability as evidence of a single frame.

Frame packages were identified when several elements recurred together across texts. The security-continuity package combined risk, reliability, strategic readiness, and uninterrupted provision. The stewardship package joined protection, conservation, responsible use, and future generations. The transformation package organised the present as a journey toward national goals and a better future. The managerial package combined integrated planning, governance, infrastructure, technology, innovation, efficiency, monitoring, and measurable targets. A responsibility-partnership package assigned roles to consumers, institutions, business, and society, particularly around demand, food waste, awareness, and participation.

The study also applied a critical question to each package: what becomes less visible when this frame organises the issue? Security may background ecological cost or distribution. Stewardship may invoke a shared moral community without specifying unequal capacities to act. Transformation may turn disagreement into a temporary obstacle on an agreed route. Managerial language may present contested choices as technical necessities. Responsibility language may shift attention between institutions and individuals. These are interpretive possibilities, not accusations. They were retained only where the sampled texts supported them.

Finally, the SDGs were used as a map of discursive emphasis. Building on the introductory definition, the study treats the SDGs as internationally recognised policy reference points rather than as evidence of achieved performance. SDG 12 supplied the principal categories: efficient use of natural resources (12.2), reduced food loss and waste (12.3), prevention and reduction of waste (12.5), communication of sustainable organisational practice (12.6), and public information for sustainable lifestyles (12.8) (United Nations Department of Economic and Social Affairs [UN DESA], n.d.-c). SDG 2 provided food access, nutrition, resilient agriculture, and market stability (UN DESA, n.d.-a); SDG 6 provided safe water, efficiency, integrated management, and ecosystem protection (UN DESA, n.d.-b); SDG 13 provided the climate context (UN DESA, n.d.-d). This mapping describes what the discourse foregrounds. It does not convert public language into evidence that a target has been achieved.

4. Methodology

4.1 Research design and corpus

The study used a qualitative, comparative framing analysis supported by a structured corpus inventory. The

corpus was purposive rather than statistically representative. Its purpose was to capture the main official sites at which sustainability, food security, and water security are publicly defined, then to compare those definitions with selected official-news texts that report projects and national achievements. All items were publicly accessible and were retrieved on 10 May 2026.

Eighteen texts were included: thirteen institutional webpages and five Saudi Press Agency reports. Nine were Arabic and nine English. Seven texts addressed environmental sustainability or cross-domain national development, eight focused primarily on water, and three focused primarily on food. The institutional sources were Vision 2030, the Saudi Green Initiative, MEWA, the Saudi Water Authority (SWA), and the General Food Security Authority (GFSA). Five source documents in the present corpus were also used in Altamimi and Wani (2026). However, the earlier study employed expression-driven selection centred on metaphorically salient items, whereas the present study analysed complete documents and passages and deliberately searched for negative cases. The present corpus also extends beyond those shared sources through the inclusion of Vision 2030 and MEWA materials and five Saudi Press Agency reports, enabling comparison across institutional and official-news genres. Official-news items were selected from SPA because they addressed sustainability, supply security, efficiency, infrastructure, or related national initiatives within the study's defined domains. The corpus is summarised in Table 2 and fully listed with URLs in Appendix A.

Table 1. Corpus profile

Dimension	Category	n
Genre	Institutional webpage	13
Genre	Saudi Press Agency news report	5
Language	Arabic	9
Language	English	9
Primary focus	Environmental or cross-domain	7
Primary focus	Water	8
Primary focus	Food	3
Total	All texts	18

Source: Authors' inventory of the 18-text corpus. Primary focus is a coding category; cross-domain items may discuss more than one sector.

To make the empirical basis fully auditable, the study treats the eighteen items as a named corpus rather than as background sources. Each item is assigned a corpus code (C01-C18), a language label, a genre/domain label, and an analytical role. These codes allow the findings to be traced back to specific public-facing documents while preserving the article's bounded claim: the corpus represents institutional and official-news discourse, not Saudi public opinion as a whole.

Table 2. Corpus inventory for the 18-text bilingual dataset

Code	Source/title	Language and genre/domain	Analytical role in the corpus
C01	Vision 2030 - Overview	English; cross-domain institutional webpage	Provides national-transformation context for resources, quality of life, food security, and sustainable water use.
C02	Vision 2030 - Nabdhata'rifiyya [Overview]	Arabic; cross-domain institutional webpage	Shows Arabic public-facing framing of national priorities, transformation, and institutional ambition.
C03	Vision 2030 - Saudi Green Initiative	English; environmental institutional webpage	Supplies English-language SGI framing of environmental protection, targets, and future-oriented sustainability.
C04	Vision 2030 - Mubadarat al-Sa'udiyya al-Khadra' [Saudi Green Initiative]	Arabic; environmental institutional webpage	Supplies Arabic SGI framing of environmental protection, national mobilisation, and future generations.
C05	Saudi Green Initiative - Information about Saudi Green Initiative	English; environmental institutional webpage	Provides programme labels, transition vocabulary, protection language, and stewardship references.

Code	Source/title	Language and genre/domain	Analytical role in the corpus
C06	Saudi Green Initiative - Ma'lumat hawla Mubadarat al-Sa'udiyya al-Khadra'	Arabic; environmental institutional webpage	Shows Arabic SGI language of protection, journey, national ambition, and future-facing environmental duty.
C07	Saudi Water Authority - Sustainability	English; water institutional webpage	Provides English terms connecting water security, reliable services, sustainability, and supply management.
C08	Saudi Water Authority - Al-istidama [Sustainability]	Arabic; water institutional webpage	Provides Arabic terminology for sustainable water security, durable resources, and future generations.
C09	Saudi Water Authority and Saudi Vision 2030	English; water institutional webpage	Links SWA roles to Vision 2030 through regulation, innovation, service quality, and sector governance.
C10	Al-Hay'a al-Sa'udiyya lil-Miyah wa-Ru'yat 2030	Arabic; water institutional webpage	Shows Arabic institutional explanation of SWA roles, Vision 2030, and water-sector transformation.
C11	MEWA - National Water Strategy	English; water institutional webpage	Gives strategy-level definitions of scarcity, demand, affordability, service quality, emergency access, and demand management.
C12	General Food Security Authority - Food sustainability	Arabic content; food institutional webpage	Provides food-loss, waste, awareness, responsible consumption, and sustainable-practice material.
C13	General Food Security Authority - Food security	Arabic content; food institutional webpage	Provides strategic-commodity, reserves, early-warning, availability, access, and resilience material.
C14	Saudi Press Agency - Sustainable framework for water security	English; official news report	Turns water-security policy into an achievement narrative centred on integrated and sustainable provision.
C15	Saudi Press Agency - NWC launches 15 water and sanitation projects	English; official news report	Connects infrastructure investment, service reliability, regional projects, and water-sector accomplishment.
C16	Saudi Press Agency - Mashru' al-Shu'ayba 6	Arabic; official news report	Provides Arabic project discourse linking infrastructure expansion to water security in Makkah and the holy sites.
C17	Saudi Press Agency - 'Am 2024: Munjazat 'azzazat makanat al-Mamlaka 'alamiyyan	Arabic; cross-domain official news report	Provides an Arabic accomplishment narrative linking national standing, development, and sustainability-related achievements.
C18	Saudi Press Agency - Saudi Arabia in the year 1445 AH	English; food/cross-domain official news report	Provides a year-in-review news item linking national progress with sustainable food systems and early goal achievement.

Source: Authors' corpus inventory. Full URLs and retrieval information are preserved in Appendix A; source codes C01-C18 are used only for traceability and do not imply statistical representativeness.

The sample includes Arabic- and English-language pages from the same institutional sources where available, but it does not assume that corresponding pages are literal translations. The Vision 2030 overview and Saudi Green Initiative pages, the SGI information pages, and SWA's sustainability and Vision pages provide Arabic- and English-language source materials. MEWA's National Water Strategy and GFSA's detailed food pages add policy depth even where an exact language pair was not available. Dated SPA items from 2024 and 2025 add event-centred news genres: a national water-security framework, regional water and sanitation projects, the Shuaibah water project, national achievements in 2024, and a year-in-review item that includes sustainable food systems.

Inclusion required an explicit connection to environmental sustainability, resource use, food security, water security, continuity of essential supply, or a remedy linking these concerns. Generic institutional pages with only isolated keywords were excluded. Duplicate releases and mirrors were excluded. The study treats each

webpage or news release as a document unit, a coherent paragraph or headline-lead sequence as a framing unit, and the clause or phrase as linguistic evidence. This layered approach prevents individual words from being mistaken for frames.

4.2 Analytical procedure

Analysis proceeded in five stages. First, each document was logged by institution, title, language, genre, date where supplied, policy domain, and URL. Second, passages were marked for Entman's four functions. Third, a provisional codebook derived from the roadmap and literature was applied: security and resilience; stewardship and future generations; transformation and journey; technology and infrastructure; efficiency and circularity; participation and responsibility; scarcity and crisis. Fourth, the codebook was revised during close reading. Technology and infrastructure were combined with integration and anticipatory governance in a broader managerial frame because these elements repeatedly worked together. Scarcity did not stand consistently as an independent frame; it more often served as the problem condition within security or managerial packages. Fifth, the study compared frames by source genre and domain and deliberately searched for negative cases, especially passages on affordability, healthy diets, household demand, food waste, and social access that complicated a purely supply-side interpretation.

Arabic texts were analysed in Arabic. Only short excerpts selected for presentation were transliterated and translated. Translation aimed at functional clarity rather than word-for-word substitution. Institutional terms such as *al-amn al-ma'i* (water security), *istidamat al-imdadat* (sustainability of supply), and *al-faqd wa-l-hadr al-ghidha'i* (food loss and waste) were kept stable across examples. English pages were analysed as independently audience-oriented texts unless the source itself identified them as translations.

As a qualitative multi-author study, the analysis does not report a formal intercoder coefficient. Consistency was addressed through two separated coding passes and author discussion. The first pass identified frame candidates; the second returned to all texts with fixed definitions, recorded disconfirming examples, and checked that each claimed frame performed at least two of Entman's functions and appeared in more than one text. The authors then reviewed borderline cases together and resolved interpretive disagreements through discussion. This procedure cannot replace a full independent reliability design, and that limitation is acknowledged below. It is nevertheless more transparent than presenting intuitive themes without definitions or a negative-case check.

4.3 Ethics and interpretive limits

The corpus contains institutional communication and professional news reporting, not posts by ordinary social-media users. No private or personally identifying data were collected. Public accessibility was treated as a condition of inclusion, not as evidence of public reception. The analysis makes no claim about how Saudi citizens interpret these messages, how frequently they encounter them, or whether the frames change behaviour. The corpus is a snapshot of accessible public-facing discourse, not a longitudinal archive and not an exhaustive census of institutional communication. Several institutional pages are undated or continually updated. The study therefore avoids claims about change over time. Most importantly, the title refers to institutional and official-news discourse rather than Saudi public discourse as a whole.

5. Findings

5.1 A shared architecture with unequal emphases

The corpus does not present sustainability and essential-needs security as rival aims. Vision 2030 places protection of vital resources beside development, food security, and sustainable water use. SGI links environmental protection to quality of life and future generations. SWA connects sustainable water security with regulation, integrated supply planning, reliability, demand management, and innovation. MEWA joins continuous access to affordability and resource protection, while GFSA places availability, reserves, early warning, loss and waste, sustainable production, and awareness within one institutional field.

Water is the clearest point of fusion. The label "Water Security & Sustainable Supply Management" makes security and sustainability a single administrative object (SWA, n.d.-a). Food discourse is broader: security appears first through strategic commodities, reserves, diversification, warning systems, and readiness;

loss, nutrition, resource efficiency, and sustainable agriculture support that larger system. The central pattern is therefore clear. Security acts as the bridge between ecological care and essential supply, and continuity gives the bridge its temporal logic.

5.2 Security-continuity: protecting provision against interruption

The security-continuity package constructs food and water as systems that must remain dependable under ordinary and exceptional conditions. Scarcity, volatile markets, resource pressure, and disruption define the problem. Continuity is positively valued, while strategic storage, early warning, diversified supply, infrastructure, and integrated planning become legitimate remedies.

Water texts make this logic direct. The Arabic label *al-amn al-ma'i al-mustadam*, “sustainable water security,” describes an enduring condition rather than a short emergency response (SWA, n.d.-b). The English phrase “reliable, high-quality water services” adds continuity and quality. MEWA requires access “under normal operations and during emergency situations” (MEWA, n.d.), giving institutional obligation a temporal range and casting planning as protection rather than mere investment.

Official news supplies concrete exemplars. A February 2025 SPA report describes an “integrated and sustainable model of water security” achieved despite arid conditions (SPA, 2025a). The concessive structure produces a story of competence overcoming constraint. Regional networks and the Shuaibah project similarly connect investment, capacity, efficiency, and reliability to security (SPA, 2025b, 2025c).

Food texts use the same grammar of preparedness. GFSA assumes responsibility for *daman wafrat jami' al-sila' al-istratijiyya*, “ensuring the availability of all strategic commodities,” alongside storage, early warning, and rapid response (GFSA, n.d.-a). “Strategic” moves commodities from ordinary market goods into national readiness; warning systems make future threats objects of monitoring and coordination.

The frame is connective but selective. It extends security beyond immediate supply by implying that depleted resources cannot support lasting provision. Yet capacity, storage, networks, and procurement are easier to narrate than household conservation, affordability, diet, or unequal exposure to disruption. These concerns exist in the corpus, but are less salient in the sampled headline and lead material.

5.3 Stewardship and future generations: resources as an inherited trust

A second package treats land, water, food, and ecosystems as resources requiring careful use. Safeguarding, conservation, restoration, rationalisation, and future generations carry its moral force. Where security asks whether supply will continue, stewardship asks whether present action preserves the conditions of future life. SGI gives the frame national scale. Its Arabic page refers to *ta'ziz juhud himayat al-bi'a wa-tasri' rihlat intiqal al-taqa*, “strengthening environmental protection and accelerating the energy-transition journey” (SGI, n.d.-b). Protection and movement appear together. Vision 2030 adds quality of life and benefit to future generations, while land and sea protection, afforestation, and restoration provide visible objects of care (Vision 2030, 2024a, 2024b).

Water discourse turns stewardship into governance. MEWA's phrase “safeguarding the natural resources and the environment” identifies sector institutions as custodians. SWA's Arabic sustainability page repeatedly joins durable resources to future generations, making human flourishing depend on environmental continuity (SWA, n.d.-b). GFSA extends the same logic to agriculture through efficient, sustainable resource management and rationalised irrigation water (GFSA, n.d.-b).

Stewardship creates solidarity, but its broad moral appeal can blur unequal capacity. Households, regulators, water authorities, and agricultural companies do not control the same resources. The most precise texts therefore name institutional duties and specify demand management, affordability, irrigation efficiency, and loss. They connect the appeal to future generations with present decisions.

5.4 Transformation, journey, and leadership

A third package casts sustainability as a purposeful national movement. Journey metaphors, target years, future orientation, and verbs such as accelerate, launch, establish, and achieve organise the present as movement toward a desired condition. The journey metaphor was identified in Altamimi and Wani (2026); the present analysis situates it within a broader transformation frame realised through temporality, agency, evaluation,

target-setting, and genre-specific achievement discourse. Target dates such as 2030 and 2060 turn an open future into a schedule against which progress can be narrated.

Within the sampled corpus, this frame is prominent in the official-news texts. Projects and annual reviews allow institutions to appear as effective agents, while figures for investment, capacity, networks, or protected area make progress measurable.

The journey frame also creates a risk. It assumes a destination and can recast trade-offs as implementation obstacles. The corpus provides limited evidence of disagreement over environmental costs, large infrastructure, demand restraint, or patterns of consumption. Transformation mobilises; it does not necessarily invite deliberation.

5.5 Managerial integration, technology, and efficiency

The fourth package makes complexity governable through strategy, regulation, data, infrastructure, monitoring, technology, and efficiency. Security supplies the valued end; managerial language supplies the means. Fragmentation and inefficiency define the problem, while integrated systems make the remedy appear coherent. MEWA's National Water Strategy is the clearest example. Demand, resources, operations, and institutional enablers form a unified framework. The "gap between supply and demand" makes dispersed practices measurable, and objectives on conservation, affordability, emergency access, and environmental protection place supply and sustainability within the same structure. SWA continues this logic through regulation, supply-chain planning, compliance, consumer protection, and innovation. SPA then translates the structure into plants, pipelines, networks, connections, and projects.

GFSA applies comparable reasoning to food. Strategic reserves, risk registers, early warning, market analysis, and emergency plans make uncertainty governable. Loss and waste appear within the same system as storage and warning, becoming not only ethical concerns but measurable inefficiencies. This frame aligns directly with SDG 12.2, 12.3, and 12.6 and with SDG 6.4.

Its weakness is possible technical closure. If the problem is a gap or coordination failure, the expected answer is better management. Questions of entitlement, cultural practice, and distribution fit less easily. The corpus nevertheless resists a wholly technocratic reading: MEWA includes affordability, while GFSA includes nutrition, smaller producers, healthy diets, and awareness. These social aims are present, although they are less prominent in the analysed material.

5.6 Responsibility, participation, and the quieter demand side

The fifth package extends responsibility beyond central institutions through partnership, awareness, consumers, efficient use, healthy diets, irrigation practice, and food-waste reduction. Food texts offer its richest form. GFSA links security to *al-faqd wa-l-hadr*, "loss and waste," dietary change, smaller farmers, and coordination across public and private actors. The problem now includes how food is produced, bought, consumed, and discarded. Water pages identify price signals, network and building loss, incentives, and conservation, while SWA places demand management among its responsibilities. Such detail matters because households differ in their water practices and motivations (Almulhim & Abubakar, 2024). A generic responsible consumer is unlikely to capture those differences.

The frame must balance structural and individual responsibility. The strongest passages allocate distinct roles to agencies, firms, producers, and consumers and connect awareness to enabling conditions. Even so, awareness is more visible than participation in defining priorities. Citizens appear mainly as beneficiaries, consumers, or implementation partners rather than speakers who might reshape the problem. The pattern marks the boundary between communication of sustainability and communication about it.

5.7 Silences, tensions, and genre differences

Four areas remain comparatively quiet. Affordability appears in MEWA and access-related GFSA material but is less salient in achievement news. Distribution is usually expressed through national benefit rather than differentiated regions or income groups. Ecological limits are visible in sustainable agriculture and irrigation efficiency, yet food news more readily celebrates investment, storage, production, or procurement. Finally, the corpus offers little open contestation over sufficiency, consumption, or trade-offs.

These are silences of public salience, not proof of policy absence. Strategy pages can hold several goals in tension; news releases select an event, agent, and achievement. Within the examined corpus, food pages contain more behavioural and social detail; water pages form the tighter bond among security, infrastructure, and sustainability.

6. Discussion

6.1 Security-continuity as the bridging frame

The main finding is that Saudi institutional and official-news discourse does not simply place sustainability beside food and water security. It binds them through a security-continuity frame. This arrangement addresses a familiar communicative difficulty by allowing security-continuity to function as a bridge across policy domains. Environmental sustainability can seem distant when framed only in terms of future ecological benefit, while supply security can seem narrowly material when framed only as capacity. Combining them allows conservation, integration, infrastructure, and preparedness to appear as parts of one obligation: maintaining essential life-support systems over time.

Entman's framework clarifies how the bridge works. Problems are defined as scarcity, disruption, inefficiency, fragmentation, loss, and environmental pressure. Causes are attributed to aridity, resource depletion, rising demand, inefficient use, market volatility, and insufficient coordination. Moral evaluation appears in the praise of stewardship, reliability, ambition, efficiency, and readiness. Remedies include integrated governance, infrastructure, technology, reserves, diversification, conservation, loss reduction, awareness, and partnership. The frame is therefore not a slogan attached to unrelated initiatives. It is a recurring logic that connects diagnoses to action.

The result partly supports research on dominant water-energy-food nexus discourse. Like the pattern identified by Wiegleb and Bruns (2018), the Saudi corpus favours integration, efficiency, risk management, and technical or administrative remedies. It also resembles Henderson's (2022) account of Gulf food security as a field of technocratic authority. Yet the corpus complicates a wholly managerial interpretation. Stewardship, future generations, affordability, waste reduction, nutrition, small producers, and awareness appear within the official architecture. The issue is one of hierarchy rather than simple absence. Managerial solutions carry the dominant interpretive prominence within the sampled corpus; social and demand-side considerations occupy important but quieter positions.

Table 3. Frame-function matrix

Frame	Problem definition	Preferred remedies	What recedes
Security-continuity	Disruption, scarcity, volatility	Reliable supply, reserves, diversified provision, readiness	Ecological cost; distribution
Stewardship	Depletion, damage, waste	Conservation, restoration, efficient use	Unequal capacity to act
Transformation	An incomplete transition	Goals, milestones, national programmes	Disagreement; trade-offs
Managerial integration	Fragmentation, inefficiency	Strategy, regulation, infrastructure, monitoring	Politics; social access
Responsibility-partnership	Wasteful use, weak awareness	Conservation, loss reduction, participation	Institutional asymmetry

Source: Authors' qualitative framing analysis. The final column records recurrent blind spots, not claims that each topic is absent from every text.

6.2 SDG 12: strong organisational alignment, weaker public deliberation

The corpus aligns most visibly with SDG 12.2 through resource efficiency and optimisation, 12.3 through food loss and waste, and 12.6 through the communication of institutional sustainability practice. Water-demand management and agricultural efficiency connect these themes to SDG 6, while sustainable production and resilience connect them to SDG 2. Climate action and future-oriented environmental protection connect them to SDG 13.

Alignment is less developed at the level of public deliberation. Target 12.8 concerns information

and awareness for sustainable lifestyles, and the corpus does include awareness. Yet citizens are more often positioned as recipients of guidance or beneficiaries of institutional action than as contributors to problem definition. Newig et al.'s (2013) distinction is useful here: the corpus is rich in communication of sustainability, but offers less evidence of communication about sustainability in which competing values and trade-offs are openly negotiated.

The practical implication is not that official communication should abandon coherence. Essential-service communication needs clarity and confidence. It could, however, make the demand side more visible without weakening the security narrative. Messages might explain why conservation protects reliability, how food-waste reduction preserves water and energy, how affordability is considered, and which actor is responsible for which change. Public-facing communication can also acknowledge trade-offs directly. Doing so may strengthen trust because it shows that sustainability is not an ornamental label placed on supply expansion.

6.3 Theoretical and methodological implications

The study contributes to framing research by demonstrating how security-continuity operates as a bridging frame between policy domains in the sampled discourse. Security does not merely define water or food independently; it supplies a shared grammar through which environmental sustainability becomes relevant to both. The analysis demonstrates that security-continuity functions as a cross-domain bridging frame, realised through multiple linguistic devices across institutional and official-news genres. The analysis also demonstrates the value of separating frame functions from linguistic devices. The same remedy - for example, a desalination project - acquires different meaning depending on whether it is narrated through continuity, leadership, stewardship, or efficiency.

Methodologically, the multi-genre design reveals differences across institutional webpages and official news. Strategy pages carry complexity and qualification; news releases carry exemplars and evaluative closure. A larger study could test these patterns across a longitudinal, multi-actor corpus that includes commercial media and ethically sampled public discussion. The present corpus provides an evidence-based starting point, not a final map of the Saudi public sphere.

6.4 Limitations

Several limitations bound the claims. The purposive corpus is small and institutionally concentrated. SPA is an official news agency, so the genre comparison does not represent the full range of Saudi journalism. Dynamic webpages may change after retrieval, and several carry no stable publication date. Although more than one author participated in the analysis, the study did not use a fully independent coding design with a reported intercoder coefficient. Instead, it relied on a two-pass consistency procedure, negative-case checking, and author discussion to stabilise frame definitions. This matters because the findings should be read as interpretive, text-based claims about a bounded corpus rather than as population estimates or measurements of audience reception. The study analyses text rather than visual design, video, social-media circulation, audience reception, or policy outcomes. Finally, the SDG analysis concerns discursive emphasis; it does not evaluate national performance.

These limits point toward a clear research programme. Future studies could build a dated archive from 2021 onward, include regional and business media, compare institutional discourse with citizen interpretations, and add interviews or experiments to test reception. Multimodal analysis could examine how maps, infrastructure images, green colour, numerical targets, and images of families or future generations reinforce the verbal frames. Comparative work with another Gulf country could identify which elements arise from shared regional conditions and which are distinctively Saudi.

7. Conclusion

Saudi institutional and official-news discourse represents sustainability and essential-needs supply security through a coherent but selective set of frames: security-continuity, stewardship, transformation, managerial integration, responsibility-partnership. The security-continuity frame provides the central bridge. It defines reliable food and water provision as a lasting public obligation rather than a short-term logistical task. Stewardship supplies the moral horizon by linking present resource use to future generations. Transformation casts sustainability as a national journey with milestones, leadership, and measurable accomplishment. Managerial integration makes

complexity governable through strategies, regulation, infrastructure, technology, monitoring, and efficiency. Responsibility-partnership extends action to producers, firms, and consumers, particularly in the discourse of conservation and food waste, but remains quieter than supply-side achievement.

The relationship between sustainability and security is therefore neither simple harmony nor unavoidable conflict. Official discourse constructs a conditional complementarity: supply becomes secure when it is efficiently managed and environmentally durable; sustainability becomes publicly urgent when it protects the continuity of essential life. This framing is well suited to a setting where water scarcity, food-import exposure, national transformation, and infrastructure development meet. It also carries a risk. When institutional competence, capacity, and technology dominate the account, affordability, distribution, household practice, ecological limits, and disagreement may receive less attention.

For practice, the clearest opportunity lies in making the demand side as intelligible as the supply side. Public communication can show how household conservation supports reliable water service, how food-waste reduction protects money and embedded resources, how affordability enters planning, and how responsibilities differ across institutions, businesses, producers, and consumers. It can also acknowledge trade-offs without surrendering a coherent national direction. Such communication would bring the discourse into fuller alignment with SDG 12, especially its concern with resource use, loss and waste, organisational practice, and public understanding.

The study does not claim to describe Saudi public opinion or to measure policy effectiveness. Its contribution is more precise: it explains how authoritative public language selects the problems, actors, values, and remedies through which sustainability and essential supply become mutually meaningful. In that discourse, the future is secured not by provision alone, and resources are protected not as abstractions, but as the material basis of continued life.

Funding Statement: The author extends their appreciation to Prince Sattam bin Abdulaziz University for funding this research work through the Project number (PSAU/2026/02/39613)

References

- Almaghlouth, S. (2022). Environmental sustainability in the online media discourses of Saudi Arabia: A corpus-based study of keyness, intertextuality, and interdiscursivity. *PLOS ONE*, 17(11), e0277253. <https://doi.org/10.1371/journal.pone.0277253>
- Almulhim, A. I., & Abubakar, I. R. (2023). Developing a sustainable water conservation strategy for Saudi Arabian cities. *Groundwater for Sustainable Development*, 23, 101040. <https://doi.org/10.1016/j.gsd.2023.101040>
- Almulhim, A. I., & Abubakar, I. R. (2024). A segmentation approach to understanding water consumption behavioral patterns among households in Saudi Arabia for a sustainable future. *Resources, Environment and Sustainability*, 15, 100144. <https://doi.org/10.1016/j.resenv.2023.100144>
- Almulhim, A. I., & Al-Saidi, M. (2023). Circular economy and the resource nexus: Realignment and progress towards sustainable development in Saudi Arabia. *Environmental Development*, 46, 100851. <https://doi.org/10.1016/j.envdev.2023.100851>
- Alshuwaikhat, H. M., & Mohammed, I. (2017). Sustainability matters in national development visions: Evidence from Saudi Arabia's Vision for 2030. *Sustainability*, 9(3), 408. <https://doi.org/10.3390/su9030408>
- Altamimi, S. A., & Wani, N. H. (2026). *Metaphors of sustainable environment and essential-needs supply in Saudi Arabia: A framing-theory approach*. *Research Journal in Advanced Humanities*, 7(2). <https://doi.org/10.58256/djp93e28>
- Baig, M. B., Al-Zahrani, K. H., Schneider, F., Straquadine, G. S., & Mourad, M. (2019a). Food waste posing a serious threat to sustainability in the Kingdom of Saudi Arabia: A systematic review. *Saudi Journal of Biological Sciences*, 26(7), 1743-1752. <https://doi.org/10.1016/j.sjbs.2018.06.004>
- Baig, M. B., Gorski, I., & Neff, R. A. (2019b). Understanding and addressing waste of food in the Kingdom of Saudi Arabia. *Saudi Journal of Biological Sciences*, 26(7), 1633-1648. <https://doi.org/10.1016/j.sjbs.2018.08.030>
- Baig, M. B., Alotaibi, B. A., Alzahrani, K., Pearson, D., Alshammari, G. M., & Shah, A. A. (2022). Food waste in Saudi Arabia: Causes, consequences, and combating measures. *Sustainability*, 14(16), 10362. <https://doi.org/10.3390/su141610362>
- Béné, C., Oosterveer, P., Lamotte, L., Brouwer, I. D., de Haan, S., Prager, S. D., Talsma, E. F., & Khoury, C. K. (2019). When food systems meet sustainability: Current narratives and implications for actions. *World Development*, 113, 116-130. <https://doi.org/10.1016/j.worlddev.2018.08.011>
- Charteris-Black, J. (2004). *Corpus approaches to critical metaphor analysis*. Palgrave Macmillan. <https://doi.org/10.1057/9780230000612>
- Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43(4), 51-58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>
- Ferguson, P. (2019). Discourses of resilience in the climate security debate. *Global Environmental Politics*, 19(2), 104-126. https://doi.org/10.1162/glep_a_00500
- Gamson, W. A., & Modigliani, A. (1989). Media discourse and public opinion on nuclear power: A constructionist approach. *American Journal of Sociology*, 95(1), 1-37. <https://www.jstor.org/stable/2780405>
- Hameed, A., Jabeen, I., & Afzal, N. (2022). Towards an eco-friendly future: A corpus-based analysis of media discourse on "Saudi Green Initiative." *Lege Artis: Language Yesterday, Today, Tomorrow*, 7(1), 84-119. https://lartis.sk/wp-content/uploads/2022/06/Hameed_et_al.pdf
- Haque, M. I., & Khan, M. R. (2022). Impact of climate change on food security in Saudi Arabia: A roadmap to agriculture-water sustainability. *Journal of Agribusiness in Developing and Emerging Economies*, 12(1), 1-18. <https://doi.org/10.1108/JADEE-06-2020-0127>
- Henderson, C. (2022). The power of food security. *Globalizations*. Advance online publication. <https://doi.org/10.1080/14747731.2022.2075616>
- Krippendorff, K. (2019). *Content analysis: An introduction to its methodology* (4th ed.). SAGE. <https://doi.org/10.4135/9781071878781>
- Marinescu, V. (2021). Talking about sustainability: How the media construct the public's understanding of sustainable food in Romania. *Sustainability*, 13(9), 4609. <https://doi.org/10.3390/su13094609>
- Matthes, J., & Kohring, M. (2008). The content analysis of media frames: Toward improving reliability and

- validity. *Journal of Communication*, 58(2), 258-279. <https://doi.org/10.1111/j.1460-2466.2008.00384.x>
- Meerow, S., Newell, J. P., & Stults, M. (2016). Defining urban resilience: A review. *Landscape and Urban Planning*, 147, 38-49. <https://doi.org/10.1016/j.landurbplan.2015.11.011>
- Mir, M. A., & Ashraf, M. W. (2023). The challenges and potential strategies of Saudi Arabia's water resources: A review in analytical way. *Environmental Nanotechnology, Monitoring & Management*, 20, 100855. <https://doi.org/10.1016/j.enmm.2023.100855>
- Newig, J., Schulz, D., Fischer, D., Hetze, K., Laws, N., Lüdecke, G., & Rieckmann, M. (2013). Communication regarding sustainability: Conceptual perspectives and exploration of societal subsystems. *Sustainability*, 5(7), 2976-2990. <https://doi.org/10.3390/su5072976>
- Schäfer, M. S., & O'Neill, S. (2017). Frame analysis in climate change communication. In *Oxford Research Encyclopedia of Climate Science*. Oxford University Press. <https://doi.org/10.1093/acrefore/9780190228620.013.487>
- Scheufele, D. A. (1999). Framing as a theory of media effects. *Journal of Communication*, 49(1), 103-122. <https://doi.org/10.1111/j.1460-2466.1999.tb02784.x>
- Semino, E. (2008). *Metaphor in discourse*. Cambridge University Press.
- United Nations Department of Economic and Social Affairs. (n.d.-a). *Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture*. Retrieved August 15, 2026, from <https://sdgs.un.org/goals/goal2>
- United Nations Department of Economic and Social Affairs. (n.d.-b). *Goal 6: Ensure availability and sustainable management of water and sanitation for all*. Retrieved August 15, 2026, from <https://sdgs.un.org/goals/goal6>
- United Nations Department of Economic and Social Affairs. (n.d.-c). *Goal 12: Ensure sustainable consumption and production patterns*. Retrieved August 15, 2026, from <https://sdgs.un.org/goals/goal12>
- United Nations Department of Economic and Social Affairs. (n.d.-d). *Goal 13: Take urgent action to combat climate change and its impacts*. Retrieved August 15, 2026, from <https://sdgs.un.org/goals/goal13>
- United Nations General Assembly. (2015). Transforming our world: The 2030 Agenda for Sustainable Development (A/RES/70/1). <https://undocs.org/A/RES/70/1>
- Wiegand, V., & Bruns, A. (2018). What is driving the water-energy-food nexus? Discourses, knowledge, and politics of an emerging resource governance concept. *Frontiers in Environmental Science*, 6, 128. <https://doi.org/10.3389/fenvs.2018.00128>
- Zaidan, E., Al-Saidi, M., & Hammad, S. H. (2019). Sustainable development in the Arab world: Is the Gulf Cooperation Council region fit for the challenge? *Development in Practice*, 29(5), 670-681. <https://doi.org/10.1080/09614524.2019.1628922>