Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Advancing Sustainable Public Expenditure through SDG-Aligned Budgeting? The Traceability of Environmental and Social Allocations in the Budget Laws of the Kingdom of Bahrain

Jaafar Al-Mesaiadeen
Gulf University
Ali Haji
ali.haji@gulfuniversity.edu.bh
Gulf University
Taghreed Althiyabat
Universiti Sains Malaysia
Wadeeah Marhoon
Gulf Future Business WLL

Research Article

Keywords: SDG budget tagging, budget law, budget transparency, institutional decoupling, public financial management, Bahrain

Posted Date: November 13th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11542456/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License.
Read Full License

Additional Declarations: No competing interests reported.

Advancing Sustainable Public Expenditure through SDG-Aligned Budgeting? The Traceability of Environmental and Social Allocations in the Budget Laws of the Kingdom of Bahrain

Jaafar Al-Mesaiadeen[a], Ali Haji[a,*], Taghreed Althiyabat[b], Wadeeah Marhoon[c]

[a] Accounting & Financial Science Department, College of Administrative and Financial Science, Gulf University, Sanad 743, Bahrain

[b] School of Distance Education, Universiti Sains Malaysia, 11800 USM, Penang, Malaysia

[c] Gulf Future Business WLL, Zinj 358, Bahrain

* Corresponding author: Ali Haji, Accounting & Financial Science Department, College of Administrative and Financial Science, Gulf University, Building 1964, Road 4363, Block 743, Sanad, Kingdom of Bahrain. Email: ali.haji@gulfuniversity.edu.bh

Abstract

Bahrain's government says that its budget is aligned with the Sustainable Development Goals (SDGs). This paper asks whether its budget laws make environmental and social purposes traceable to those goals. All operative articles and annexed schedules of the three biennial budget laws for 2021–2026 were coded for environmental and social purposes, program objectives, SDG references and performance measures, and the schedules were compared with those of four earlier laws back to 2009–2010. None of the 33 operative articles, which authorize aggregate amounts, contain any of these features. Because the schedules have classified spending by function since 2017–2018, environmental and social allocations can be identified. The recurrent appropriation under the environmental protection heading was 0.13–0.16% of approved state expenditure each year (0.14–0.18% with project allocations). Social protection rose from 12.05% in 2021 to 17.64% in 2025, largely because of a new Citizen Account line that consolidates support programs (8.51% to 10.51% excluding it and support for limited-income households). No article or schedule gives a program objective, an SDG link or an indicator, even in the law prepared after the 2023 Voluntary National Review, although ministries are asked to budget with performance indicators. Because the schedules were redesigned for functional classification but never carried results information, a fixed legal format cannot explain the pattern alone; it is consistent with commitments being decoupled from the

instrument that authorizes spending. A replicable coding approach and illustrative SDG target tags are provided.

Keywords: SDG budget tagging; budget law; budget transparency; institutional decoupling; public financial management; Bahrain

1. Introduction

Economic, social and environmental problems facing governments are now closely interrelated, and this is largely why sustainable development has become a priority of modern public policy. In 2015 the United Nations adopted the 2030 Agenda, whose 17 Sustainable Development Goals (SDGs) and 169 targets give these concerns a common framework across a wide range of social, environmental and economic issues [1]. Achieving them is widely seen as depending on effective governance [2]. Because the framework treats these fields together, governments and other institutions are asked to consider how progress in one area affects progress in another. For a government, taking the SDGs seriously also means setting national goals and putting sustainability policy into practice, and both force decisions about how the available public resources are divided among competing demands and priorities [3]. Public budgeting therefore has a central role in sustainable development, because it is the process through which national commitments are matched with actual expenditure. Budget decisions are what turn the priorities of national plans into funded programs, services and public activities.

Among these budget decisions is the funding of the government institutions that deliver key services such as healthcare, education, infrastructure, environmental protection, social protection and public administration. Unlike spending in private organizations, which depend mostly on business needs, the allocation of public funds is meant to create social value and respond to social needs. Public policy and the spending that supports it therefore have a direct bearing on citizens' quality of life.

Traditional public budgeting, however, has given most of its attention to financial control, the distribution of resources, efficiency, accountability and the provision of services. Under this approach, the environmental and social consequences of public services and projects are not always defined, quantified or related to spending categories and performance statistics. Public expenditure therefore needs to be

examined not only in terms of what can be financed, but also in terms of whether the activities and outputs it pays for contribute to the ultimate goals of sustainability.

SDG-aligned budgeting is one of the main processes through which the link between public spending and sustainable development can be strengthened. Traditional budgets tend to be organized by program, activity, function, ministry or area of economic activity. SDG-aligned budgeting goes a step further by linking these allocations to the SDGs they are meant to serve, through concrete and measurable tasks; tagging individual budget lines with the targets they serve is one way of doing this [4]. For the SDGs to be integrated effectively, they need to be visible in budget allocations, in budget reporting and in the other phases of the budget cycle. A review of the 2021 Voluntary National Reviews recommends building SDG targets into program budgets and moving toward budgeting oriented to results [5]. On this basis, environmental indicators can be used to examine energy efficiency, resource efficiency, emissions, waste management, water and environmental protection. Social indicators cover the other side of public spending, including equality, accessibility, social protection, community health and quality of life, and work on social sustainability places particular weight on inclusion, non-discrimination and public participation [6]. In this study, an allocation is called traceable when the document that authorizes it also states its purpose, the objective or SDG target it serves and an indicator against which its results can be followed.

Sustainable development is commonly described as having economic, environmental and social dimensions, although the three-pillar model lacks a rigorous theoretical basis [7, 8]. This study is concerned mainly with the environmental and social dimensions. The emphasis does not imply that the economic dimension is unimportant. Economic and fiscal questions are already built into government budgetary planning through decisions on revenue, spending, resource allocation, financial management and fiscal control. This study looks at something narrower; namely how clearly environmental and social aims are written into the documents through which spending is planned and authorized. Environmental and social indicators let a ministry look past the cost of a service, or the outputs it delivers, to the wider effects of the money it spends, which is what a fuller idea of sustainable government spending requires.

The question has practical weight in Bahrain, where sustainability now sits at the center of development planning. Bahrain Economic Vision 2030, launched in 2008, rests on the principles of sustainability, competitiveness and fairness and aims to improve the lives of Bahraini citizens [9]. These principles have been carried into national planning. The Government Program 2023–2026, which the 2023 Voluntary National Review refers to as the Government Plan, describes itself as dedicated to sustainability, competitiveness and fairness, and its objectives include the quality and sustainability of government services and the safeguarding of natural resources through sustainable development [10]. Bahrain has also set a target of net zero emissions by 2060 [11, p. 12]. The 2023 Voluntary National Review goes further, stating that the Government Program makes explicit references to the implementation of the SDGs [11, p. 26]. The government's presentation of the budget makes a similar claim: the national portal describes Bahrain's budget and related programs as closely aligned with the SDGs, naming SDG 8 and SDG 16 [12]. Neither source explains how the link is made in the budget itself, and the two goals named on the portal concern growth, employment and institutions rather than the environment or social protection. At the level of strategy and official communication, then, the links between public sector development, social welfare, environmental protection and sustainability are clearly stated, while the link between the budget and the SDGs is asserted rather than shown.

Nevertheless, the existence of national sustainability commitments does not show how far environmental and social priorities are embedded in the planning of public expenditure and in the budget itself. This is the gap with which the study is concerned. Bahrain has made national pledges on sustainability and has reported on the SDGs in Voluntary National Reviews in 2018, 2023 and 2026, yet how these strategic commitments are translated into recognizable and measurable environmental and social terms in government budgeting and spending remains unclear. Awareness of sustainability is not in question; what needs to be established is whether these commitments can be followed through the way state expenditure is allocated, monitored and evaluated. If that link is not visible in the first place, the relationship between government expenditure, public service delivery and measurable sustainability outcomes cannot be assessed.

Appropriations in Bahrain are made by law, which is why the budget law is the focus here: it is the instrument that gives legal force to spending. National visions, government programs and Voluntary National Reviews express intentions and report on them. A commitment that does not reach the authorizing instrument cannot be traced from the legal authority to spend to the purpose of the spending, and that is a narrower question than whether Bahrain budgets for the SDGs. In many budget systems, program objectives and performance information are presented in the documents that accompany the budget law rather than in the law itself [13, 14]. In Bahrain, the Ministry of Finance and National Economy states that ministries prepare their budgets according to their strategic plans and with performance indicators [15], but the documents published with the budget, namely the law, its schedules and the Ministry's appropriation tables, do not present them (Section 3.2). This study therefore asks what the published authorizing instrument allows a legislator or citizen to trace; ministries' internal budget submissions are outside its scope. International evidence suggests that the link to budgets is where the SDG agenda has been weakest. A review of the political impact of the SDGs found their effects to be mainly discursive, with little evidence that governments had reallocated public funds to implement them [16], and a later scoping review finds the uptake of the goals uneven and often largely symbolic [17]. National case studies give the same picture. Hege et al. [18] found budget–SDG links still at an early stage and mostly limited to mapping exercises, while Elder and Newman [19] describe the budget information that governments put in their Voluntary National Reviews as selective and unsystematic. In institutional theory this kind of gap is known as decoupling, where formal structures and commitments are kept apart from the practices that govern day-to-day decisions [20, 21]. Applied to budgets, the term describes commitments that are adopted and reported while the routines that allocate resources carry on much as before. In case-selection terms, Bahrain is a most-likely case in the Gulf for finding the link in the authorizing instrument [22]. Its strategic documents and the government's own account of the budget both state the SDG link openly, and its organic budget law, Decree-Law No. 39 of 2002 [23], expects program objectives to form part of the general budget. At the same time, fiscal policy has been driven by a long effort to balance the budget, most visibly through the Fiscal Balance Program launched in 2018.

Three contributions follow from this design. The first is a documentary test of SDG traceability that can be repeated from the published texts alone. Bahrain's budget laws for 2021–2026 are read in full, articles and schedules alike, against what SDG-aligned budgeting requires, and the results are set beside the organic budget law, the government's own claims about SDG alignment, and the schedules of earlier laws going back to 2009–2010. The coding rules keep the absence of disclosure apart from the absence of spending, so a program that is not described is never treated as a program without money, and each biennial law (rather than each fiscal year) counts as one legislative decision. The second contribution is to show were, within the published laws, the chain from commitment to authorization breaks. Spending has been classified by function since the 2017–2018 budget, which makes environmental and social allocations visible, yet no law states program objectives, SDG links or indicators, and the format did not change when a new law was drafted after the 2023 Voluntary National Review. Finally, the paper indicates what closing the gap would take, by attaching illustrative SDG target tags to the named schedule lines (Section 5.3) and by comparing Bahrain with jurisdictions that already publish such links.

1.1 Statement of the Problem, Significance, Motivation, and Research Questions

Bahrain has made sustainability a priority of its national development agenda through Economic Vision 2030 and its commitment to the SDGs. These commitments need to be translated into indicators that public institutions can use to inform expenditure planning, resource allocation, monitoring and evaluation. The main problem addressed in this research is the scarcity of empirical evidence on whether environmental and social considerations are made explicit in Bahrain's public budgeting, and on what this means for sustainable public expenditure.

Several studies have examined the relationship between environmental protection, social development, sustainability and public expenditure. Much less is known about how environmental and social considerations enter the budget itself, and whether they can be traced through the documents that authorize spending in the Bahraini setting. Specifically, it is necessary to examine whether the budget laws, as the legal basis of expenditure, state the purposes, indicators and SDG links that would allow allocations to be followed from authorization to intended results.

This study is significant because it contributes to knowledge of SDG-aligned government budgeting in Bahrain and offers an approach that can be applied in other Gulf Cooperation Council (GCC) states. Research on the SDGs remains concentrated in developed countries [24], and in the GCC the agenda has been examined mainly in terms of regional priorities and sustainability transitions rather than budgets [25, 26]. Systematic documentary evidence on what Bahrain's budget laws disclose about environmental and social purposes adds to this literature. Government institutions can use the results to see where budget documentation could be improved, especially with regard to environmental protection, social inclusion, accountability and expenditure assessment, and the same results can inform the design of a budgeting framework that links national sustainability priorities to measurable, expenditure-based indicators.

National development strategies set out broad environmental and social priorities yet understanding how sustainability commitments are carried into budgeting decisions also requires knowing whether those priorities appear in the documents through which public money is authorized. The research questions follow from that requirement:

> **RQ1.** To what extent are environmental purposes, the allocations associated with them and performance indicators explicitly identified in Bahrain's budget laws for 2021–2026, annexed schedules included?
>
> **RQ2.** To what extent are social program purposes, the allocations associated with them and performance indicators explicitly identified in the budget laws for 2021–2026 and their annexed schedules?
>
> **RQ3.** How has the explicit disclosure of environmental and social considerations in the budget laws changed over time, and to what extent do the laws refer expressly to the Sustainable Development Goals?

The 33 operative articles and 15 annexed schedules of the three laws were coded for this purpose, the codes were set against the approved estimates, and the schedules were compared with those of four earlier laws, from 2009–2010 to 2019–2020. The questions are descriptive, and the study does not test whether disclosure has any effect on spending. They are also limited to the published laws; the documents in which ministries prepare and defend their budget requests are left aside.

2. Literature Review

2.1 Sustainable Development and the Role of Public Expenditure

In the 2030 Agenda, the United Nations [1] presents sustainable development as one integrated idea in which environmental protection, economic prosperity and social well-being are pursued together, so that present needs are met without putting future generations at risk. Its three dimensions (environmental, social and economic) are often summed up as the "triple bottom line" or the three pillars of sustainability, a model that Purvis et al. [7] find in wide use even though its conceptual origins are hard to trace. On the social side, Dempsey et al. [27] defines urban social sustainability in terms of equitable access and the sustainability of the community itself, and Summers and Smith [28] link sustainable improvements in human well-being to social and intergenerational equity.

This research is concerned with the SDGs, which span environmental, social and economic dimensions and a wide range of policy fields [29]. Much of the work on these goals now happens in municipalities as well as in national ministries, and local governments vary widely in how far their climate commitments turn into measurable results [30]. At either level, the work needs institutions and policy instruments, and both have to be paid for out of public budgets. In South Africa, Hendriks [31] found municipal budgets to be a key channel for financing SDG-related services but argued that the goals cannot be reached if spending stays limited to basic service provision. Guerrero and Castañeda [3] likewise treat public expenditure, including public budgets and fiscal policy, as a central instrument for the SDGs, while showing that more spending alone does not close development gaps. Public spending also matters for basic services such as water and sanitation, where the Millennium Development Goal targets were missed in many urban areas [32]. Beyond such services, the same spending funds social programs that can improve the living conditions of the population in general and of vulnerable groups in particular. Conditional cash transfers to poor families, for example, have reduced poverty substantially in some countries [33], and have become a central instrument of poverty-reduction policy in Latin America [34]. Public expenditure also funds education, community services and health facilities, and the quality of such social infrastructure shapes people's quality of life [35].

Governments nevertheless need to manage their finances carefully. Ajili and Ayoub [36] show, for five Middle East and North African countries, that external debt service absorbs a large share of the resources available for health, education and public investment. An analysis of 60 Voluntary National Reviews likewise counts the need to balance SDG-related spending against debt limits among the main lessons of the first decade of the goals for lower- and middle-income countries [37]. Public spending can still advance sustainable development when it narrows inequality and improves essential services, so long as the state can keep financing it.

This study concentrates on the environmental and social dimensions because it examines whether governments make these aspects visible when they plan and authorize spending. Economic and fiscal considerations remain relevant, but they are already part of public budgeting through decisions on costs, affordability and revenue.

2.2 SDG-Aligned Budgeting and Sustainable Public Expenditure

A traditional public budget shows how much each department may spend, but the figures alone say little about whether the spending improves people's lives or protects the environment. Performance budgeting attaches objectives and measures to spending plans [14]. Green budgeting asks governments to look at what their budget choices do to the environment [38].

SDG-aligned budgeting requires more than either. In the approach set out by the United Nations Development Programme (UNDP) [39], governments identify the SDG targets related to each program, report results against suitable measures, and record the money allocated and spent. For such links to exist, the budget needs a program classification in which each line stands for a purpose and not just for an organization [40]. Climate budget tagging follows the same logic for climate-relevant spending. A World Bank review compared 18 tagging methodologies [41], and an International Monetary Fund note on green public financial management reports that more governments have begun tagging climate-related expenditure during budget preparation over the past ten years [42]. Explicit links can also expose policies that work against each other, as when low effective tax rates on fossil fuels undercut climate objectives pursued elsewhere in the fiscal system [43].

Clear links let citizens see what public money pays for and give officials a firmer basis for reviewing results. Research on fiscal openness generally finds that governments

that disclose more about their budgets also achieve better budget outcomes, though few studies can show that the disclosure itself is the cause [44]. Putting an SDG label on a budget line does not, on its own, show that the goal was reached. Bozatlı et al. [45] give a European example: public budgets for energy research and development in European Union countries did not work as a tool for reducing the carbon footprint, although that was their purpose. Governments therefore need to measure outcomes as well as record expenditure. Reporting practice complicates comparison as well; in Voluntary National Reviews, for example, budget figures are often reported selectively and without context [19]. UNDP [39] also expects budget programs to be defined in line with SDG targets and monitored through performance indicators. If departments do not agree on which programs serve which target, the same spending may end up only loosely tied to a goal or counted more than once. In the end, the SDG framework is useful in budgeting only if it informs budget decisions, and the cases examined by Hege et al. [18] suggest that, so far, it does so to a limited extent.

2.3 Integration of Environmental and Social Indicators into Public Budgeting

Environmental indicators have come into wide use as a way of judging whether public budgets improve real outcomes. The record so far is uneven, and some of it shows that labels on spending are not enough by themselves. Green budgeting is meant to bring environmental objectives into decisions on spending and taxation [38]. Yet the 2024 review of practice by the Organisation for Economic Co-operation and Development (OECD), which draws on its 2022 survey of member countries, finds that ministries still lack disaggregated green data and indicators for measuring results. According to the same review, measuring the impact of green budgeting remains a key problem for ministries of finance [38]. Studies that trace green content through the budget documents themselves find that it reaches only a small part of them; in Slovenia's budget documents for 2018–2022, for example, Stanimirović et al. [46] found green or sustainability elements in only 11 of 24 policies and 23 of more than 3,000 projects. Classification is itself demanding linking budget lines to the SDGs takes time and specialist knowledge, and tagging rules designed for one institutional setting rarely transfer cleanly to another [4].

Where spending is clearly directed, environmental results can follow. In a study of Chinese provinces, environmental expenditure was associated with lower per capita carbon emissions [47]. The same study found emissions to be lower where final

accounts stayed close to the budget and found that fiscal transparency weakened the effect of budget deviation. In the European Union, environmental investment has been associated with higher rates of e-waste recycling [48]. Yet a larger budget does not guarantee better environmental results [3]. To make use of public spending, governments need to identify the objective and the expected benefits of each allocation.

The problem is most visible when programs are poorly targeted. Environmental protection expenditure in the European Union has been examined alongside renewable energy as a response to ecological pressures [49]. Recent panel evidence, however, finds that such expenditure has had a negative association with a composite sustainable development index at the European Union level and a positive one in only a few member states [50]. The authors conclude that green budget measures need to be restructured. Efficiency matters as well. Countries differ widely in how efficiently they turn public spending into SDG progress, so that similar levels of spending can produce quite different results [51]. Budgets should therefore be assessed against changes in land use, energy use, water and waste, and not only by the amount allocated.

The same concern applies to social spending. Budget allocations can support equality, inclusion, access to services, quality of life, housing, social protection and health, and cross-country evidence shows that equity-oriented spending on health, education and social protection reduces income inequality and improves human development [52]. How much difference such spending makes, however, depends on how the programs are run. When they are well designed, social programs reduce the losses in human development caused by inequality, through their effects on life expectancy, schooling and income [53]. The link is not uniform, however. At the global level, Nguyen and Le [54] find that the relationship between public spending and SDG progress follows an inverted U-shape, with returns that diminish beyond certain levels of spending. These findings suggest that social spending needs to state the benefits each program is expected to deliver, and that links to the SDGs are most useful when they can be verified at the level of budget programs [55].

2.4 SDG-Aligned Public Budgeting in Bahrain and the Research Gap

Studies that connect the SDGs with public budgets remain limited. Drawing on nine national and subnational cases, Hege et al. [18] finds that SDG budgeting is at an early stage: most governments map their budgets to the goals or add qualitative reporting, while few use the SDGs for performance evaluation or resource allocation. Guariso et al. [4] add that linking budgets to the SDGs is resource-intensive, which is a particular obstacle for administrations with limited capacity. At the local level, Guarini et al. [56] find that few Italian capital cities have integrated sustainable development concerns into their strategic plans, and that where the SDGs appear they serve mainly as a reference framework. Reviews of national reporting point the same way. Budget figures in Voluntary National Reviews are selective and inconsistent [19]. The reviews are also self-reported. An analysis of 232 reviews from 166 countries found no significant relationship, for most goals, between the sentiment with which a country reported on a goal and its official score [57], so frequent or favorable mention of a theme does not show that it is being implemented. Göçoğlu et al. [37] further find that the reviews of middle-income countries rarely treat weak coordination as a problem, a pattern they call governance blindness. Institutional arrangements matter as well. Comparing 137 countries, Breuer et al. [58] finds strong commitment from the center of government in most cases, but also a dominant role for ministries of foreign affairs and the environment, which suggests that sustainability is not yet treated as a concern of government as a whole.

Bahrain presented its first Voluntary National Review in 2018 and its second in 2023 [11, pp. 17–18]. Economic Vision 2030 predates the SDGs, but the 2023 Review presents its guiding principles of sustainability, fairness and competitiveness as closely in line with the 2030 Agenda [11, p. 18]. The same Review describes the Government Program as making explicit references to the implementation of the SDGs and presents SDG indicators as a means of measuring progress and informing future decisions [11, pp. 23, 26]. SDG implementation is coordinated by a national committee chaired by the Minister of Cabinet Affairs, under whose umbrella the Ministry of Sustainable Development works [11, p. 23]. In the Government Program 2023–2026, the government commits itself to safeguarding natural resources and to improving the quality and sustainability of public services [10], which places environmental and social goals at the center of national policy. Fiscal policy has also been shaped by the Fiscal

Balance Program, launched in 2018 with the objective of balancing the budget by 2022, a target later extended by two years [11, p. 29], and decisions about spending priorities have been all the more consequential as a result. Bahrain's third Voluntary National Review, published in 2026, refers to the 2025–2026 general budget mainly through particular allocations, such as a financing package for social housing, and mentions budgets responsive to women's needs under the National Gender Balance Model; it does not describe a mechanism for linking budget programs to SDG targets [59]. Regional studies of the GCC have approached sustainability mainly through regional priorities and transition pathways [25, 26] and have paid less attention to how commitments enter the budget.

Here the organic budget law is directly relevant. Under Article 7 of Decree-Law No. 39 of 2002 on the General Budget [23], the general budget includes, besides the revenue and expenditure estimates, "the objectives of the programs included in the budgets of ministries and government entities" (authors' translation). Ministers are required to report each year on budget execution compared with the objectives set for the programs approved in the budget (Article 48), and the government's execution report to the legislature is to include summaries of program budgets and performance indicators (Article 50). Budget estimates may be prepared for up to two fiscal years (Article 23, as amended by Decree-Law No. 40 of 2012 [60]; see also Article 109 of the Constitution [61]). The general budget that the government prepares and submits is not the same document as the law that approves it, and none of the provisions cited here require program objectives to be reproduced in the budget law or its schedules. The Ministry of Finance and National Economy describes budget preparation in similar terms: ministries are to prepare their budgets according to their strategic plans and with performance indicators, and the Ministry has introduced tables linking budgets to strategic priorities [15]. Bahrain's own budget legislation and practice therefore anticipate a link between allocations and program objectives, which makes it possible to ask whether that link is visible in the budget laws themselves.

The studies and official reports reviewed above show Bahrain's commitment to sustainability goals, but little is known about how those goals inform budget decisions. Aldada et al. [62] analyze Bahrain's progress across industry sectors, the economy, sustainable communities, the environment and the quality of government institutions, while the official plans identify priorities across different areas of government. Neither

type of evidence, on its own, shows whether environmental and social indicators are used when expenditure is planned, managed and evaluated, and, to the authors' knowledge, no previous study has examined Bahrain's budget laws for SDG links or attempted to tag their allocations to SDG targets. A study of the budget instrument itself is therefore needed to establish whether environmental and social considerations are visible at the point where public money is authorized. The closest study in design is that of Godinho and Vaz de Lima [55], who examine whether the SDG links of Brazil's multi-year plan are carried into its annual budget law. The present study asks a similar question of a budget system in which the authorizing law is short and the allocations are set out in annexed schedules, and it reads the answer against the country's own organic budget law.

2.5 Theoretical Lens: From Commitment to Authorization

Institutional theory offers a useful way to interpret the relationship between sustainability commitments and budget practice. Meyer and Rowan [20] argued that organizations adopt formal structures that reflect institutionalized rules, because such structures confer legitimacy, while keeping them loosely connected to their technical activities. Governments face similar pressures when they adopt international agendas. Bromley and Powell [21] distinguish two forms of the resulting decoupling, a distinction that Bromley et al. [63] apply to the nonprofit sector in the United States. Policy–practice decoupling occurs when a policy or commitment is adopted symbolically but not carried into the practices that govern day-to-day decisions. Means–ends decoupling occurs when practices are implemented but their link to the organization's core goals remains unclear. Stål and Corvellec [64] show how the second form can persist, as organizations keep sustainability practices separate from their core operations in ways that obscure and justify the gap between means and ends. Budget reforms are open to the same pattern. Brunsson [65] describes public organizations that keep talk, decisions and action apart, and Pritchett et al. [66] show how reforms can reproduce the forms of a capable state without its functions. In a study of performance-based budgeting in an Italian ministry, Mauro et al. [67] find that the reform could look compliant on paper while the changes it was meant to bring about did not occur, because the actors involved were not aligned on the goals and values on which it depended.

The SDG literature reviewed above contains several signs of the first form. The goals have changed how governments talk about development more than how they allocate resources [16], and their uptake has been uneven and often largely symbolic [17]. National budget–SDG links are mostly confined to mapping [18]. The main vehicle of SDG reporting, the Voluntary National Review, is self-reported, its tone is largely unrelated to measured progress [57], and the budget information it contains is selective and hard to compare [19]. When foreign affairs and environment ministries dominate SDG governance [58], or when nobody treats weak coordination as a problem [37], the formal commitment and the budget routine can drift apart without much resistance. Bahrain divides the two tasks: a national committee at the center of government coordinates SDG implementation [11, p. 23], whereas the Ministry of Finance and National Economy prepares the budget under the organic budget law. The two processes need not meet the budget law unless the law is designed to carry SDG information.

Budget laws are a demanding place to look for coupling. Unlike strategies and reviews, they are binding: they are the point at which an executive proposal becomes a legal authority to spend. Where performance budgeting has been adopted, the budget structure itself carries program objectives and indicators [14], and SDG budgeting guidance asks for SDG targets to be attached to programs in the budget [39]. In many systems these elements are presented in the budget documents and program statements that accompany the law [13, 14], so their absence from the operative articles of an appropriation law is to be expected. Appropriation laws can carry them, however: the Philippine General Appropriations Act sets out organizational outcomes and performance indicators, with targets, for each agency [68]. The schedules are a different matter. They set out the allocations themselves, and they are the part of the law in which a program structures, an objective or a tag would become visible to the legislature and the public. Bahrain's organic budget law sets a comparable domestic expectation by listing program objectives among the components of the general budget. A budget law that authorizes amounts without stating purposes, indicators or SDG links does not prevent sustainability spending, but it means that such spending cannot be traced through the authorizing instrument. Each of the three laws in the study period approved estimates for two fiscal years [69–71], so allocation decisions are taken law by law rather than year by year. If sustainability commitments were being

coupled to the budget, the preparation of a new law is where a change in disclosure would be expected to appear.

On this basis, two expectations guide the analysis. The first (E1), which relates to RQ1 and RQ2, concerns the content of the laws. Because operative articles rarely carry program information, E1 is assessed mainly on the schedules: under coupling, they would attach program objectives, SDG references or performance measures to environmental and social allocations; under decoupling, they would classify allocations by entity and function without such links. The second (E2), which relates to RQ3, concerns change over time and is designed to separate decoupling from a simpler explanation, that the form of the budget law is fixed by the organic law and by drafting practice and changes only with a wider reform of public financial management. If the format were fixed, the schedules would look the same before and after the government took on SDG commitments. If the format can change but SDG commitments are kept apart from the authorizing instrument, the schedules would show reforms of other kinds without acquiring objectives, targets or indicators, including in the 2025–2026 law, the first prepared after the 2023 Review had described the Government Program as referring explicitly to the SDGs. To observe this, the schedules of the three laws are compared with those of earlier laws back to 2009–2010. A pattern in which allocations are classified but their link to stated ends is left open could also be read as means–ends decoupling; the documents cannot distinguish the two forms, and neither can be confirmed without observing how budgets are prepared inside government. Means–ends decoupling would be contradicted if the budget documents prepared within government stated objectives and indicators for these allocations, in which case the gap would lie in what is published rather than in budget practice.

3. Methodology

3.1 Research Design

The study adopted a documentary design that combines a structured content analysis of the budget laws with a descriptive analysis of public finance data. The budget laws approving Bahrain's state budget for 2021–2026 were examined, together with their annexed schedules and the schedules of four earlier laws, to establish whether they make environmental and social considerations explicit, whether these are linked to specific allocations or performance indicators, and whether they refer to the SDGs.

Information from the documents was converted into numerical variables on a structured coding sheet. The analysis reports frequencies and, for the allocations and the fiscal series, amounts, shares and annual changes.

3.2 Corpus and Data Sources

Bahrain's state budget is approved by law, for up to two fiscal years at a time. Three laws cover the study period. Law No. 9 of 2021 [69], issued on March 30, 2021, approved the state budget for 2021 and 2022; Law No. 5 of 2023 [70], issued on June 5, 2023, did the same for 2023 and 2024; and Law No. 11 of 2025 [71], issued on March 27, 2025, approved the budget for 2025 and 2026. With 11 numbered articles in each law, there are 33 articles in all. The articles set out estimated revenue, total expenditure divided into recurrent and project expenditure, transfers from oil revenue to the Future Generations Reserve, the estimated deficit and its financing, municipal and Capital Secretariat estimates, the treatment of other ministry estimates, and implementation provisions (Table A1). Each law also has five annexed schedules: total revenue and expenditure (Schedule 1), revenue by ministry and government entity (Schedule 2), recurrent expenditure by ministry and entity (Schedule 3), project expenditure by ministry and entity (Schedule 4), and the revenue and expenditure of the municipalities and the Capital Secretariat (Schedule 5). The laws cover the state budget, that is, the estimates of ministries and government entities; the municipal estimates are approved in the same laws but reported separately, and spending financed outside the state budget is not recorded in the laws and is therefore outside the analysis.

The texts were taken from the official legislation portal of the Legislation and Legal Opinion Commission. The portal's web pages reproduce the schedules as images, but the Official Gazette files published on the same portal contain them in machine-readable form, and these files were used. Schedules 4 and 5 of Law No. 11 of 2025 appear in the Gazette file only as images; they were coded from the text version of the same tables published by the Ministry of Finance and National Economy [72], so all 15 schedules were coded. The articles and schedules were coded in Arabic, the language of the official texts. For the comparison over time, the appropriation tables of four earlier laws (2009–2010, 2015–2016, 2017–2018 and 2019–2020), also published by the Ministry [72], were read for their structure and coded for the same features; the operative articles of those laws were not examined. The corpus therefore

consists of three laws, with 33 articles and 15 schedules, together with the schedules of four earlier laws, and the findings concern what the published laws, with their schedules, make explicit.

Figures were extracted from the text layer of the Gazette files with the assistance of an artificial intelligence (AI) tool (see Declarations), and all coding decisions were made by the authors. The extracted amounts were checked in three ways. The amounts in Table 1 were matched to the operative articles of each law, which state them in full. The reconciliations described below and in Section 4.1 were applied in every year. For 2025–2026, the amounts of the Citizen Account, the retirees' living-standard allowance and total government subsidies were also compared with press reports of the budget bill [73], and the project allocation under the environmental protection heading with the Ministry's tables [72]; all agreed.

For each year from 2021 to 2026, the articles of the same three laws supply the approved estimates that make up the fiscal series: revenue, state expenditure, recurrent expenditure, project expenditure, transfers to the Future Generations Reserve, the estimated deficit, municipal expenditure and the other estimates distributed under Article 9. Changes over the period are measured from 2021 to 2025, the first years of the first and the third law, so that both end points are first-year estimates, and the 2026 estimates complete the within-law comparison for the third law (Section 4.6). Sector totals (Schedule 3) and the economic composition of expenditure (Schedule 1) were recorded for all six years. Because the text layer does not always preserve the order of the two-year columns, the figures for each year were assigned by checking that the sector totals added up to the corresponding totals in Schedule 1; the check held to the nearest thousand dinars in every year. No other assignment of the year columns satisfied it. Where both years of a law carry identical sector totals, as social protection does in 2021 and 2022, this check cannot detect a swap of individual lines between the two years. All amounts are approved estimates in nominal Bahraini dinars (BHD). They are not audited outturns and do not show program delivery.

3.3 Research Instrument and Measurement

The research instrument was a coding and data extraction sheet of the kind commonly used in documentary content analysis [74]. Every article and schedule was entered

with its law, its number and a summary of its content, and was then coded for five binary features (an explicit environmental purpose, an explicit social program purpose, a program objective or expected result, an explicit reference to the SDGs, and an environmental or social performance measure). These five were chosen because guidance on SDG budgeting and on performance budgeting expects every budget program to have a stated purpose, an objective, an identified SDG target and a measurable indicator [14, 39]. The program objective feature also mirrors Article 7 of the organic budget law. Line-item schedules have no field for objectives or indicators, so coding these features on the schedules tests whether the annexes were designed to carry them, as the appropriation laws of some countries do [68]. A feature was scored 1 if the text stated it explicitly and 0 if it could not be found after a full reading; a document that could not be read was entered as missing and never scored 0. The first two features (environmental purpose and social program purpose) are not coded in the same way for articles and schedules. An article scores only if it states a purpose, whereas in a schedule a heading that names the function is enough, so a schedule code records a functional classification and says nothing about what the spending is meant to achieve. This difference is kept in view when the results are reported, and the decision rule for each feature is set out in Appendix A.

As little as possible was inferred. A provision was coded as environmental or social only when the text said so, and its subject matter on its own was not enough. In the schedules, this condition was met by a heading that names a function, such as environmental protection, social protection, health or education, or by a line that names a social benefit or fund. The ten sector headings of Schedule 3 correspond in name to the divisions of the United Nations Classification of the Functions of Government (COFOG) [75], with local names for the divisions on economic affairs and on recreation, culture and religion, so the environmental protection heading corresponds to the COFOG division of that name. The schedules assign whole entities to a heading, however, whereas COFOG classifies transactions by function, so the headings are best read as an administrative grouping with functional labels. The name of an entity alone was not enough, so an allocation was attributed to environmental protection because it was listed under that heading, not because the entity's name refers to the environment. Transfers to the Future Generations Reserve were not coded as environmental or social simply because they concern natural-resource

revenue or future generations, and municipal appropriations were not coded as social spending without a stated social program purpose. Only where the documents identified an environmental or social purpose were amounts in BHD attributed to it, and total expenditure was never treated as environmental or social spending. Three things were recorded separately on the sheet: whether a provision existed, whether funding was attached to it, and whether a measurable indicator was specified.

Alongside the manual coding, the full Arabic texts of the articles and schedules were searched for the terms for sustainable development (*al-tanmiya al-mustadama*), goal or objective (*hadaf*, *ahdaf*), indicator (*mu'ashshir*), performance (*ada'*) and program (*barnamaj*). The text layer of the Gazette files does not always preserve Arabic ligatures and letter forms, so the search can miss a term that is present. It was therefore used only as a supplementary check on the manual reading, not as a test of absence.

3.4 Coding Reliability and Auditability

How far the results can be relied on depends on how consistently the documents were classified. The corpus was coded by one of the authors using the rules set out above, and no independent second coding was carried out, which is acknowledged as a limitation. Two features of the design reduce the room for judgment. The features coded are explicit statements in the text rather than interpretations of it, and every text was read in full; the term search served only as a supplementary check. Transparency provides a further safeguard. Table A1 reports the classification of every article type together with the provision it contains, Table A2 that of every schedule and Table A3 the decision rules. The code for each article and schedule of each law is given in Electronic Supplementary Material (ESM) 1, so that each coding decision can be checked against the published texts.

3.5 Data Analysis

The analysis was descriptive. For the articles, frequencies show how many of the 11 articles of each law contained each feature. For the schedules, the coding records whether each feature was present. The allocations listed under the environmental protection and social protection headings in Schedule 3 were expressed in BHD million and as a percentage of approved state expenditure for each year from 2021 to 2026. The other eight headings, among them health and education, the other main social

sectors in the schedule, were treated in the same way for comparison. Because the choice of denominator affects the shares, the environmental and social allocations were also expressed as shares of the total of the ten headings and of state expenditure excluding debt interest. For social protection, a series was also calculated that excludes the two lines whose presentation changed between the second and the third law (Section 4.4); because the Citizen Account consolidated more than the line it appears to replace, this series is indicative rather than strictly like for like. An allocation with both environmental and social purposes could carry both codes, but its amount would be counted only once in any total; because the sector headings do not overlap, no such case arose. It was not possible to take the budget reserve and the estimates that Article 9 leaves for distribution after enactment out of the denominators, since their final distribution is not published; Section 4.2 reports their size instead.

The fiscal series is there for context and does not answer the research questions; its tables give annual values, percentage changes and expenditure shares. Because three laws set the annual estimates, each change from one year to the next was also labeled as falling either within a law or at the boundary between two laws (Section 4.6). This split follows the biennial budget cycle, with each law counted as one allocation decision, as in the disclosure analysis. The economic composition of expenditure in Schedule 1 was then used to break down the largest change between laws (Section 4.6). All of these measures come from the published legal texts, so they cannot show how ministries deal with sustainability internally.

4. Results

4.1 Analytical Coverage and Reporting Basis

Six years of budget estimates (2021–2026) are analyzed, together with the sector allocations and economic composition of expenditure in each year, the codes for the three laws (33 articles and 15 schedules), and the layout of the schedules in four earlier laws. The financial data and the documentary codes are kept in separate datasets: budget amounts are estimated year by year, whereas disclosure is recorded article by article and schedule by schedule. Financial results are reported in nominal BHD million, to three decimal places as they appear in the laws, and no deflator was applied, so increases represent changes in nominal estimates and not in purchasing power. In every year the figures passed three reconciliation checks (recurrent and

project expenditure add up to state expenditure, expenditure minus revenue equals the stated deficit, and the components in Schedule 1 sum to the recurrent expenditure given in the articles). An amount was counted as environmental or social only if it sat under a heading naming that function, and no amount was assigned to these purposes because of an entity's name or the subject of a provision.

4.2 Approved Budget Estimates

Under the first two laws, estimated state expenditure was between BHD 3,568.659 million and BHD 3,630.785 million a year, and it rose to BHD 4,379.673 million in 2025 and BHD 4,536.991 million in 2026 (Table 1). Revenue estimates moved more, from BHD 2,405.881 million in 2021 to a peak of BHD 3,469.374 million in 2024, and the estimated deficit ranged from BHD 161.411 million in 2024 to BHD 1,455.248 million in 2025. Over 2021–2025, the period used for changes in Section 4.6, recurrent expenditure accounted for BHD 17,491.312 million of the BHD 18,816.312 million of estimated state expenditure and project expenditure for BHD 1,325.000 million, or 92.96% and 7.04%, respectively. Recurrent expenditure includes government debt interest, which is examined in Section 4.6.

Two features of the estimates matter what follows. First, not all of the expenditure authorized by the laws is allocated when they are enacted. Article 9 of each law provides for other estimates for ministries and government entities, which the Minister of Finance distributes after enactment, and Schedule 1 contains a budget reserve of between BHD 95.204 million and BHD 124.136 million a year. In the 2021–2022 and 2025–2026 schedules the Article 9 estimates are listed with the general public services lines. Together, the two amounted to between BHD 126.358 million and BHD 197.320 million a year, or 24 to 41 times the allocation under the environmental protection heading, so the sector allocations in Schedule 3 describe the law as enacted rather than the final distribution of spending. Second, the figures are plans. Each law's revenue estimates rest on the oil-price assumption adopted for it, and outturns can differ considerably from approved estimates; Tang et al. [47] treat the gap between the two as an aspect of budget management. The final accounts would be needed to judge what was spent, and the estimates are used here only as the amounts that each law authorized.

Table 1 *Approved budget estimates, 2021–2026 (BHD million)*

Category	2021	2022	2023	2024	2025	2026
Revenue	2,405.881	2,457.131	3,103.386	3,469.374	2,924.425	3,459.345
State expenditure	3,613.766	3,568.659	3,623.429	3,630.785	4,379.673	4,536.991
Recurrent expenditure	3,313.766	3,268.659	3,398.429	3,405.785	4,104.673	4,261.991
Project expenditure	300.000	300.000	225.000	225.000	275.000	275.000
Estimated deficit	1,207.885	1,111.528	520.043	161.411	1,455.248	1,077.646
Transfer to the Future Generations Reserve	20.586	20.586	20.591	20.647	18.703	18.531
Other estimates distributed under Article 9	32.641	31.154	88.145	98.122	62.292	72.177
Municipal expenditure	74.393	75.593	87.299	91.080	99.363	100.230

Note. Amounts are approved estimates in nominal BHD million (not outturns), the estimated deficit equals state expenditure minus revenue. The other estimates under Article 9 are included in state expenditure and are distributed among ministries and government entities by the Minister of Finance after enactment. Municipal estimates are approved in the same laws but are not part of state expenditure. Because the deficit stated in Article 6 equals expenditure minus revenue, the transfer to the Future Generations Reserve (Article 5) does not enter the deficit as stated in the law. Source: operative articles of Law No. 9 of 2021, Law No. 5 of 2023 and Law No. 11 of 2025 [69–71].

4.3 Environmental Provisions and Allocations (RQ1)

For RQ1, none of the operative articles of the three laws stated an environmental purpose; the frequency was 0 of 11 articles in each law (Table 2). No article contained a program objective or an environmental or social performance measure. The articles authorize aggregate amounts, and the project estimates they set (BHD 300.000 million in 2021 and 2022, BHD 225.000 million in 2023 and 2024, and BHD 275.000 million in 2025 and 2026) do not distinguish the purpose of individual projects.

The schedules give a different picture. In each law, Schedule 3 groups recurrent appropriations under ten sector headings, one of which is environmental protection, and the project schedules of all three laws also contain an environmental protection heading. An environmental function can therefore be identified from the law as a

whole, although not from its operative text. The allocation is small. Recurrent appropriations under the heading were BHD 5.167 million in 2021, BHD 5.212 million in 2022, BHD 5.030 million in 2023, BHD 4.830 million in 2024, BHD 6.809 million in 2025 and BHD 6.891 million in 2026, or between 0.13% and 0.16% of approved state expenditure in each year (Table 3). As a share of the total of the ten headings, the range was 0.19% to 0.23% (Table 4). Most of the amount was appropriated to the Supreme Council for Environment; in 2021–2022 and 2025–2026 the remainder went to a national initiative for agricultural development. The project schedules added BHD 0.300 million a year in 2021–2022, BHD 0.400 million a year in 2023–2024 and BHD 1.000 million a year in 2025–2026, also for the Supreme Council for Environment; with these project allocations, the share of approved state expenditure was 0.14% to 0.18% (Table 4).

The heading identifies the function and nothing more. Neither the heading nor the lines beneath it state a program objective, an expected result, an SDG target or an indicator. The heading is also a narrow measure of environmentally relevant spending. Its scope is that of the COFOG division of environmental protection, and activities such as water supply or energy are classified under other functions. Entities with an environmental mandate can also sit under other headings: the Ministry of Oil and Environment is listed under economic affairs and infrastructure in the schedules of the second and third laws, so its allocation is not counted here. The shares in Table 3 therefore show what the law labels as environmental protection; they are not a measure of the government's overall environmental effort. For scale only, general government in the European Union spent 1.7% of total expenditure on environmental protection in 2023, about half of it on waste management [76]; the comparison is loose, because Schedule 3 covers ministries and government entities only, assigns whole entities to headings and leaves out the municipalities, whose budgets appear in Schedule 5. Following the rule used for the articles, neither oil revenue nor transfers to the Future Generations Reserve count as environmental allocations. The finding for RQ1 is that the laws identify a small environmental allocation through their schedules but do not state what it is meant to achieve or how its results would be measured.

Table 2 *Explicit disclosure recorded in the budget laws and their schedules*

Feature	Law No. 9 of 2021 (2021–2022)	Law No. 5 of 2023 (2023–2024)	Law No. 11 of 2025 (2025–2026)
A. Operative articles (11 per law)			
Environmental purpose	0/11	0/11	0/11
Social program purpose	0/11	0/11	0/11
Program objective	0/11	0/11	0/11
SDG reference	0/11	0/11	0/11
Performance measure	0/11	0/11	0/11
B. Annexed schedules (5 per law)			
Environmental function named (heading)	Yes (Schedules 3, 4)	Yes (Schedules 3, 4)	Yes (Schedules 3, 4)[a]
Social function or benefit named (heading or line)	Yes (Schedules 3, 4)	Yes (Schedules 3, 4)	Yes (Schedules 3, 4)[a]
Program objective	No	No	No[a]
SDG reference	No	No	No[a]
Performance measure	No	No	No[a]

Note. Panel A reports the number of operative articles, out of 11 in each law, which state the feature. Panel B reports whether the feature appears in the law's schedules and, where it does, in which schedule. In the schedules, the first two features record a heading or line that names the function or benefit, not a statement of what the spending is meant to achieve (Table A3). [a] Schedules 4 and 5, which the Gazette file reproduces as images, were coded from the Ministry of Finance and National Economy's text version of the same tables (Section 3.2). Source: Law No. 9 of 2021, Law No. 5 of 2023 and Law No. 11 of 2025, with their schedules [69–71]; for Schedules 4 and 5 of Law No. 11 of 2025, the Ministry's tables [72].

4.4 Social Provisions and Allocations (RQ2)

For RQ2, none of the articles stated a social program purpose; each law recorded 0 of 11 articles (Table 2). The schedules, once again, say more than the articles. Schedule 3 lists a set of named social benefits and funds under the social protection heading, including the National Social Fund, the Social Welfare Fund, the retirees' living-standard allowance, food subsidies, the government's share in unemployment insurance, housing support and, until 2024, support for limited-income households.

Social programs can therefore be identified by name and amount, which comes closer to program information than anything in the operative articles.

Allocations under the social protection heading were BHD 435.554 million in 2021 and 2022, BHD 486.854 million in 2023, BHD 488.554 million in 2024, BHD 772.750 million in 2025 and BHD 771.750 million in 2026 (Table 3). Their share of approved state expenditure rose from 12.05% in 2021 to 13.44% in 2023 and 17.64% in 2025. Most of the increase came with the third law, and it came almost entirely from changes in three lines. The schedule of the third law contains a new Citizen Account line of BHD 312.600 million in 2025, while the line for support to limited-income households, BHD 128.000 million a year until 2024, no longer appears. The retirees' living-standard allowance rose from BHD 177.500 million to BHD 298.000 million. Together these three changes added BHD 305.100 million to the heading between 2024 and 2025, more than its total increase of BHD 284.196 million, while food subsidies fell by BHD 19.904 million. Health and education, the other main social sectors in the schedule, received between 7.94% and 8.35% and between 7.84% and 9.09% of approved state expenditure, respectively.

The schedule does not say what the Citizen Account finances are. The record of the budget's passage does: during joint consultations on the 2025–2026 budget, the government and the Council of Representatives described the account as bringing the existing support programs together in a single program, run by one body and graduated by household income, and as adding support for fuel, electricity and water paid in cash [77], alongside a framework in which petrol prices would follow world market prices [78]. So, the new line brings together more than the former support for limited-income households, and some of the 2025 increase may simply be support that used to be delivered through prices and now passes through the budget. The share of social protection in 2025 is not directly comparable with the shares of earlier years, and no published document allows a strictly like-for-like series. Excluding both the Citizen Account and the support for limited-income households gives an indicative series: social protection then amounted to BHD 307.554 million in 2021 and BHD 460.150 million in 2025, and its share of approved state expenditure rose from 8.51% to 10.51%. Between 2024 and 2025 this share rose by 0.58 percentage points, against more than four points for the headline share (Table 4). Most of the rise in the headline share in 2025 thus reflects the new Citizen Account line, while the rise in the indicative

series owes most to the retirees' allowance. The other bases in Table 4 show the same pattern at different levels; as a share of the ten headings, for example, social protection rose from 17.73% in 2021 to 26.16% in 2025.

As with the environmental heading, the schedule names each benefit and its amount but does not state its objective, an SDG link or an indicator. Social allocations are therefore identifiable and comparatively large, but the laws give no basis for judging what they are expected to achieve.

Two items are left out of social spending as measured here: municipal expenditure and the transfers to the Future Generations Reserve. Municipal expenditure rose from BHD 74.393 million in 2021 to BHD 99.363 million in 2025, but neither the articles nor Schedule 5 (which gives only aggregate municipal revenue and expenditure) says what programs the money pays for, so the rise cannot be counted as growth in social spending. The Reserve transfers, between BHD 18.531 million and BHD 20.647 million a year, add to a financial reserve meant for future generations. The text attaches no social service, beneficiary program or measurable social target to them. Both are therefore kept as separate fiscal categories, and the findings for RQ2 rely only on the social program expenditure that Schedule 3 identifies.

Table 3 *Allocations by sector heading in Schedule 3, 2021–2026*

Sector heading	2021	2022	2023	2024	2025	2026
A. Allocations (BHD million)						
General public services	205.909	206.451	279.227	286.933	262.169	276.154
Defense	523.360	523.360	525.300	525.300	550.832	550.843
Public order and safety	439.581	439.747	448.016	447.078	464.738	471.599
Economic affairs and infrastructure	159.735	115.236	109.589	105.545	115.355	118.878
Environmental protection	5.167	5.212	5.030	4.830	6.809	6.891
Housing and community amenities	14.279	14.285	12.536	11.911	12.622	12.796
Health	298.302	297.895	299.180	288.217	360.155	364.131
Youth, culture and media	53.911	54.189	50.097	48.203	54.571	54.331
Education	320.951	324.526	317.616	312.016	354.118	355.482
Social protection	435.554	435.554	486.854	488.554	772.750	771.750
All ten sector headings	2,456.749	2,416.455	2,533.445	2,518.587	2,954.119	2,982.855
State expenditure	3,613.766	3,568.659	3,623.429	3,630.785	4,379.673	4,536.991
B. Percentage of approved state expenditure						
General public services	5.70	5.79	7.71	7.90	5.99	6.09
Defense	14.48	14.67	14.50	14.47	12.58	12.14
Public order and safety	12.16	12.32	12.36	12.31	10.61	10.39
Economic affairs and infrastructure	4.42	3.23	3.02	2.91	2.63	2.62
Environmental protection	0.14	0.15	0.14	0.13	0.16	0.15
Housing and community amenities	0.40	0.40	0.35	0.33	0.29	0.28
Health	8.25	8.35	8.26	7.94	8.22	8.03
Youth, culture and media	1.49	1.52	1.38	1.33	1.25	1.20

Sector heading	2021	2022	2023	2024	2025	2026
Education	8.88	9.09	8.77	8.59	8.09	7.84
Social protection	12.05	12.20	13.44	13.46	17.64	17.01
All ten sector headings	67.98	67.71	69.92	69.37	67.45	65.75

Note. All amounts are nominal and in BHD million. Schedule 3 classifies by sector the recurrent expenditure of ministries and government entities, subsidies included; debt interest and the budget reserve are not part of it. The ten headings correspond in name to the divisions of the Classification of the Functions of Government (COFOG) [75]; entities are assigned to headings as a whole. In every year the ten sector totals add up to the sum of ministry expenditure and subsidies in Schedule 1. The ten-heading total includes the other estimates distributed under Article 9 (Table 1), which are attributed to entities only after enactment. The project schedules add BHD 0.300 million a year under environmental protection in 2021–2022, BHD 0.400 million a year in 2023–2024 and BHD 1.000 million a year in 2025–2026. Source: Schedules 1 and 3 of Law No. 9 of 2021, Law No. 5 of 2023 and Law No. 11 of 2025 [69–71].

Table 4 *Environmental and social protection allocations on alternative bases, 2021–2026*

Measure	2021	2022	2023	2024	2025	2026
A. Environmental protection						
% of state expenditure	0.14	0.15	0.14	0.13	0.16	0.15
% of state expenditure, including project allocations	0.15	0.15	0.15	0.14	0.18	0.17
% of the ten sector headings	0.21	0.22	0.20	0.19	0.23	0.23
% of state expenditure excluding debt interest	0.18	0.19	0.18	0.17	0.20	0.20
B. Social protection						
% of state expenditure	12.05	12.20	13.44	13.46	17.64	17.01
% of the ten sector headings	17.73	18.02	19.22	19.40	26.16	25.87
% of state expenditure excluding debt interest	14.99	15.49	17.04	17.19	23.08	22.82
C. Social protection excluding the Citizen Account and support for limited-income households (indicative)						
Amount (BHD million)	307.554	307.554	358.854	360.554	460.150	460.150
% of state expenditure	8.51	8.62	9.90	9.93	10.51	10.14

Note. State expenditure excluding debt interest is approved state expenditure minus government debt interest as stated in Schedule 1. Panel C excludes the Citizen Account line (BHD 312.600 million in 2025 and BHD 311.600 million in 2026) and the line for support to limited-income households (BHD 128.000 million a year in 2021–2024); the series is indicative, because the Citizen Account also consolidates other support programs (Section 4.4). The row including project allocations adds the environmental protection lines of Schedule 4 (Section 4.3). Source: Schedules 1, 3 and 4 of the three laws [69–71] and, for Schedule 4 in 2025–2026, the Ministry's tables [72]; authors’ calculations.

4.5 Changes in Disclosure and SDG References (RQ3)

For RQ3, no article and no schedule in any of the three laws referred to the SDGs (Table 2). The term search agreed with the manual coding. The phrase for sustainable development appeared only in the name of the Ministry of Sustainable Development, listed as an entity in the schedules of the second and third laws, and the word for program appeared only in the names of the housing support lines. The terms for goal or objective, indicator and performance were not found in any article or schedule.

The format of the three laws was also stable. They contain the same 11 articles in the same order (Table A1), and their schedules use the same five tables (Table A2), with the same ten sector headings in Schedule 3. The 2025–2026 law, the first prepared after the 2023 Voluntary National Review had described the Government Program as referring explicitly to the SDGs, introduced no new form of disclosure, and the two earlier laws, both also prepared after Bahrain's first Review in 2018, used the same format. Allocations changed considerably across the three laws, as Sections 4.3, 4.4 and 4.6 show, while the way they were presented did not.

The format has not always been fixed, however (Table 5). In the appropriation tables of 2009–2010 and 2015–2016, recurrent expenditure was grouped under four broad sectors (public administration, social services, economic services and infrastructure), and neither environmental protection nor social protection appeared as a heading; the main environmental body was listed among other entities. The ten functional headings were introduced with the 2017–2018 budget and have been used since, with an environmental protection heading in every subsequent schedule of recurrent expenditure. None of the seven sets of tables examined, before or after that change, states a program objective, an SDG reference or a performance measure, and the word for program appears only in the names of benefit lines such as housing support. Within the period examined, the schedules were therefore redesigned once, after the adoption of the SDGs and before Bahrain's first Voluntary National Review, to classify spending by function, but they were not redesigned to carry objectives or indicators after the 2018 or the 2023 Review. A fixed legal format cannot by itself account for this pattern; it is consistent with sustainability commitments being kept apart from the instrument that authorizes spending, although the documents cannot show why the 2017 reform took the form it did. Because each law covers two fiscal years, the comparison concerns legislative decisions rather than annual observations, and it does not show whether the integration of sustainability within ministries changed over the period.

Table 5 *Structure and disclosure features of the appropriation schedules, 2009–2010 to 2025–2026*

Budget years	Grouping of recurrent expenditure (Schedule 3)	Environmental protection heading	Social protection heading	Objectives, SDG references or indicators
2009–2010	Four broad sectors	No	No	None
2015–2016	Four broad sectors	No	No	None
2017–2018	Ten functional headings	Yes	Yes	None
2019–2020	Ten functional headings	Yes	Yes	None
2021–2022	Ten functional headings	Yes	Yes	None
2023–2024	Ten functional headings	Yes	Yes	None
2025–2026	Ten functional headings	Yes	Yes	None

Note. Before 2017–2018, Schedule 3 grouped entities under four broad sectors: public administration, social services, economic services and infrastructure. The 2009–2010 tables contain four schedules and no municipal schedule; the later tables contain five, with an annex listing government subsidies. The 2019–2020 tables are those published by the Ministry with the budget bill. The tables for 2011–2012 and 2013–2014 were not examined, and operative articles were not examined for laws before 2021. Source: appropriation tables published by the Ministry of Finance and National Economy [72] for 2009–2010 to 2019–2020; Schedules 1–5 of Law No. 9 of 2021, Law No. 5 of 2023 and Law No. 11 of 2025 [69–71].

4.6 Fiscal Context of the Three Laws

Estimated state expenditure was set to go from BHD 3,613.766 million in 2021 to BHD 4,379.673 million in 2025, a rise of BHD 765.907 million (21.19%). The path was far from steady. After a fall of 1.25% in 2022 and small rises of 1.53% in 2023 and 0.20% in 2024, expenditure jumped by 20.63% in 2025, so nearly all of the growth came in that one year.

The composition of expenditure also changed. Recurrent estimates rose from BHD 3,313.766 million in 2021 to BHD 4,104.673 million in 2025, an increase of 23.87% over the period, while project estimates fell by 8.33%, from BHD 300.000 million to BHD 275.000 million. The absolute increase in recurrent expenditure was BHD 790.907 million and the decrease in project expenditure BHD 25.000 million, which together give the net increase of BHD 765.907 million in total expenditure. Recurrent growth exceeded total growth because the fall in project estimates offset part of it. The split is by type of expenditure only and says nothing about the policies the money supports.

The project share was 8.30% in 2021 and 8.41% in 2022, fell to 6.21% in 2023 and 6.20% in 2024, and stood at 6.28% in 2025, a decline of 2.02 percentage points between the first and the last year. Over the same years the recurrent share rose from 91.70% to 93.72%. Project estimates grew by 22.22% between 2024 and 2025, but their share rose by only 0.08 percentage points, because total spending grew sharply at the same time. These figures describe a budget dominated by recurrent spending, without indicating the environmental or social value of either type of expenditure.

Because the estimates were set by three biennial laws, the year-on-year changes can also be divided into changes within a law and changes at the boundary between two laws (Table 6). This division describes the budget cycle rather than separate decisions, since each law fixes the estimates for both of its years when it is enacted. Within the first two laws, state expenditure changed little, falling by 1.25% between 2021 and 2022 and rising by 0.20% between 2023 and 2024. The first boundary brought a change of similar size, an increase of 1.53%, whereas the second brought an increase of 20.63%. Changes at the two boundaries added BHD 803.658 million to the annual estimate and changes within laws reduced it by BHD 37.751 million, but the step between 2024 and 2025 alone accounts for 97.8% of the net increase over 2021–2025. The pattern therefore rests mainly on one step, and within the third law expenditure rose by a further 3.59% in 2026.

Project estimates were identical in both years of each law (BHD 300.000 million, BHD 225.000 million and BHD 275.000 million) and changed only when a new law was enacted, by −25.00% and then by 22.22%. This follows from the drafting of the laws, since Article 4 of each law sets a single amount for project expenditure over the two years, divided equally between them. Revenue estimates behaved differently, rising within each law by 2.13%, 11.79% and 18.29%, so the stability of total expenditure within laws is specific to the expenditure side. The timing of enactment also matters. Each law was issued after the start of the first fiscal year it covers. Until then the previous budget continued to apply under Article 109 of the Constitution, with spending at one twelfth a month under Article 27 of the organic budget law. The preparation of a new law is therefore the point at which allocations are reopened, and Section 4.5 shows that the format of disclosure did not change at those points.

Table 6 *Year-on-year change in approved expenditure estimates within and between budget laws (%)*

Period	Type	Law(s)	State expenditure	Recurrent expenditure	Project expenditure
2021→2022	Within	No. 9 of 2021	−1.25	−1.36	0.00
2022→2023	Between	No. 9 of 2021 → No. 5 of 2023	1.53	3.97	−25.00
2023→2024	Within	No. 5 of 2023	0.20	0.22	0.00
2024→2025	Between	No. 5 of 2023 → No. 11 of 2025	20.63	20.52	22.22
2025→2026[a]	Within	No. 11 of 2025	3.59	3.83	0.00

Note. Within: both years are covered by the same law. Between: the second year is covered by a new law. Changes are calculated from approved estimates in nominal BHD. Project expenditure does not change within a law because Article 4 of each law divides it equally between the two years. [a] Shown to complete the within-law comparison for the third law; changes over the period are measured from 2021 to 2025. Source: Law No. 9 of 2021, Law No. 5 of 2023 and Law No. 11 of 2025 [69–71].

Schedule 1 shows what lay behind the second step (Table 7). Of the increase of BHD 748.888 million between 2024 and 2025, government subsidies, among which the Citizen Account is listed [73], accounted for BHD 287.281 million (38.4%), debt interest for BHD 243.000 million (32.4%), the expenditure of ministries and government entities for BHD 148.251 million (19.8%), projects for BHD 50.000 million (6.7%) and the budget reserve for BHD 20.356 million (2.7%). In the sector classification, social protection rose by BHD 284.196 million and health by BHD 71.938 million; as Section 4.4 shows, most of the social protection increase reflects the new Citizen Account line. Debt interest is part of recurrent expenditure throughout the period. Its share of approved state expenditure rose from 19.59% in 2021 to 21.70% in 2024, 23.54% in 2025 and 25.46% in 2026, so recurrent expenditure cannot be read as spending on programs and services alone.

Table 7 *Approved state expenditure by economic category, 2021–2026 (BHD million)*

Category	2021	2022	2023	2024	2025	2026
Ministries and government entities	1,959.787	1,965.175	2,040.341	2,021.283	2,169.534	2,202.355
Government subsidies	496.962	451.280	493.104	497.304	784.585	780.500
Budget reserve	96.517	95.204	98.984	99.198	119.554	124.136
Government debt interest	708.000	757.000	766.000	788.000	1,031.000	1,155.000
Other recurrent items[a]	52.500	–	–	–	–	–
Recurrent expenditure	3,313.766	3,268.659	3,398.429	3,405.785	4,104.673	4,261.991
Project expenditure	300.000	300.000	225.000	225.000	275.000	275.000
State expenditure	3,613.766	3,568.659	3,623.429	3,630.785	4,379.673	4,536.991
Debt interest (% of state expenditure)	19.59	21.21	21.14	21.70	23.54	25.46
Primary balance[b]	−499.885	−354.528	245.957	626.589	−424.248	77.354
Memo item: other estimates distributed under Article 9[c]	32.641	31.154	88.145	98.122	62.292	72.177

Note. [a] COVID-19 related expenditure (BHD 50.000 million) and the operating costs of the strategic food stock (BHD 2.500 million). [b] Revenue minus expenditure excluding debt interest; negative values are deficits. [c] Distributed among ministries and government entities by the Minister of Finance after enactment (Article 9); included in the categories above, not additional to them. Source: Schedule 1 and Article 9 of Law No. 9 of 2021, Law No. 5 of 2023 and Law No. 11 of 2025 [69–71].

Revenue estimates increased by 21.55% between 2021 and 2025, from BHD 2,405.881 million to BHD 2,924.425 million. Annual revenue peaked in 2024 at BHD 3,469.374 million and then fell by 15.71% in 2025. Between 2024 and 2025, expenditure rose by 20.63%, and the estimated deficit rose from BHD 161.411 million to BHD 1,455.248 million, an increase of BHD 1,293.837 million. Over the full period, the deficit rose from BHD 1,207.885 million in 2021 to BHD 1,455.248 million in 2025, an increase of 20.48%.

Excluding debt interest, the approved budget showed a primary deficit of BHD 499.885 million in 2021, primary surpluses of BHD 245.957 million in 2023 and BHD 626.589 million in 2024, the final year of the extended Fiscal Balance Program target, and a primary deficit of BHD 424.248 million in 2025 (Table 7). The series tracks planned financing needs as they changed, and since actual outturns may differ, only the final accounts could show what was achieved. From Table 3 one can see which functions gained resources, but not what the extra money was expected to achieve.

4.7 Scope of the Findings

No hypothesis tests, regression coefficients, confidence intervals or claims of statistical significance are reported, because the design is descriptive. With six annual sets of estimates set by three laws, and with disclosure features that did not vary across the laws, the relationship between disclosure and expenditure cannot be estimated. Counting the 33 articles as independent observations of national budget outcomes would change the unit of analysis and overstate the evidence, since the three laws repeat the same 11-article structure. As defined here, the codes describe the published laws and nothing else; they do not estimate how common sustainability provisions are across Bahrain's budget documents as a whole.

The results answer the research questions within the limits of the documents, but they say nothing about how well the funded activities performed or how far the SDGs were met. No claim is made about anything outside the documents studied, and that includes the budget documents that accompany the laws.

5. Discussion

5.1 Commitment, Classification and Authorization

The results separate three things that are often run together, namely commitment, the classification of spending and its authorization. On commitment, the SDG link is explicit, if general; the national portal presents the budget and its programs as closely aligned with the SDGs [12], and the 2023 Voluntary National Review describes the Government Program as referring directly to their implementation [11]. The schedules supply the classification, because their sector headings pick out environmental and social allocations. At the level of the link between allocations and results, nothing is stated in the law: no article or schedule gives a program objective, an SDG target or

an indicator. This pattern is consistent with both E1 and E2. It shows that sustainability objectives are not stated in the published laws; it does not establish that sustainability is absent from Bahrain's spending or from the budget documents prepared within government.

Read through the lens set out in Section 2.5, the pattern is consistent with policy–practice decoupling. The budget is described externally in SDG terms, while the instrument that authorizes it uses a classification by entity and function that did not change after the 2018 or the 2023 Review. A simpler explanation, that the form of the budget law is fixed by the organic law and by drafting practice, fits the three recent laws but not the longer record: the schedules were redesigned for the 2017–2018 budget, so the instrument could be reformed, and the reform that took place introduced a functional classification rather than objectives or indicators (Table 5). A reading in terms of means–ends decoupling is also possible, because the laws classify allocations by function without saying what ends they serve, and the documents do not allow the two forms to be told apart. There is a domestic side to the gap as well. The organic budget law lists the objectives of the programs in ministry budgets among the components of the general budget and requires annual reports to compare results with those objectives, and the Ministry of Finance and National Economy says that ministries prepare their budgets with performance indicators linked to strategic priorities [15]. Such information therefore appears to exist inside government, and what the evidence shows is that it is not published with the law or its schedules. Whether it reaches the budget submitted to the legislature is a question for further research; if it does, the gap is one of publication rather than of practice. The instrument is capable of carrying more than amounts. Its articles attach procedural conditions to spending, such as the requirement that revenue be collected and expenditure made under the applicable financial rules. The articles also let the Minister of Finance distribute other ministry estimates, on condition that the distributions are reported, and provide for implementation instructions (Table A1), while the schedules already name functions and benefits. What it does not carry is the link between means and ends that SDG budgeting requires.

The size of the environmental allocation should be read with care. The heading that the law labels as environmental protection received about 0.15% of approved state expenditure in every year (up to 0.18% with project allocations), and about 0.2% of the

ten headings. Yet the Government Program 2023–2026 commits the government to safeguarding natural resources [10], and Bahrain has set a target of net zero emissions by 2060 [11, p. 12]. The heading is a narrow measure, though. Some environmentally relevant spending may fall under other functions, as with the Ministry of Oil and Environment, which is listed under economic affairs and infrastructure. The estimates distributed after enactment are also many times larger than the heading (Section 4.2). Even so, the figure tells the reader something. It is the only amount that the authorizing instrument itself labels as environmental, and from the law alone an outside reader cannot tell which other allocations serve environmental goals.

On the social side, the figure in the 2023 Review is BHD 454 million of social support expenditure for 2021, or 13.6% of total government expenditure [11, p. 55]. In the 2021 schedule, the social protection heading stands at BHD 435.554 million, or 12.05% of approved state expenditure. Using outturns instead of estimates does not close the gap. The Central Bank of Bahrain puts total government expenditure in 2021 at BHD 3,604 million [79], of which BHD 454 million would be 12.6%, while the Review's 13.6% implies a total of about BHD 3,338 million. Since the Review does not say which budget lines or which expenditure total its figure is based on, the published documents do not allow the international report to be reconciled with the domestic authorization.

The comparison at the boundaries between laws (Table 6) is how time enters the analysis. Because each law sets allocations for two years, they are only reopened when the next law is drafted. In 2025 they were reopened on a large scale: between 2024 and 2025 subsidies went up by BHD 287.281 million, debt interest by BHD 243.000 million and the social protection heading by BHD 284.196 million (Tables 3 and 7). Yet the 2025 law, which added BHD 748.888 million to approved expenditure in its first year and was the first law drafted after the 2023 Review, kept the earlier format for its articles and schedules. Why disclosure stayed the same is a question the evidence cannot settle, but it does show that, since the functional reclassification of 2017–2018, the format has not changed at the points where the budget cycle reopened allocations.

5.2 Environmental and Social Findings in the Light of Prior Research

On RQ1, no operative article stated an environmental purpose. The schedules did contain an environmental protection allocation that can be identified, but it was small

(0.13% to 0.16% of approved state expenditure, or 0.14% to 0.18% with project allocations) and came with no objective or indicator. The OECD [38] reports a similar problem in green budgeting, where ministries still lack disaggregated green data and indicators for measuring results. Work on SDG budget tagging points the same way, since classification takes considerable resources and does not transfer easily from one institutional setting to another [4]. The present analysis cannot say whether the same institutional causes are at work in Bahrain. What Bahrain's schedules do already provide is one layer of the required information, a functional classification, on which objectives, indicators and SDG tags could be built.

A functional classification is not the same as a stated purpose, and the difference matters when project spending is interpreted. Project estimates fell from BHD 300.000 million in 2021 to BHD 275.000 million in 2025, while the project schedules labeled only BHD 0.300–1.000 million a year as environmental protection and gave the purpose of the remaining projects only by entity and sector; the decline cannot therefore be read as a reduction in environmental investment. Part of public investment may also be missing from the project estimates, since projects financed outside the state budget do not appear in the laws. Environmental outcomes, as Guerrero and Castañeda [3] note, do not increase in step with the amount spent. The present findings support a narrower, methodological version of that argument: expenditure levels cannot reveal environmental value without information on how the funds are to be used. The relevance of any allocation to sustainability has to be established first, and that requires information on both its amount and its purpose.

Studies that do find positive environmental effects of public spending are relevant here as well. Tang et al. [47] link provincial environmental expenditure in China to lower per capita carbon emissions, and Constantinescu et al. [48] associate environmental investment in the European Union with more e-waste recycling. Both can do this because the expenditure is identifiable and can be set against an environmental outcome. In Bahrain the expenditure can be identified too, but the objectives and outcome measures needed for a similar assessment are missing. Tang et al. [47] also find that emissions are lower where final accounts stay close to the budget, and that fiscal transparency weakens the effect of budget deviation. If so, a credible and visible budget may matter for how well money is spent, and not only for accountability.

The second research question gave a clearer result for social protection than the first gave for the environment, because the schedules name individual benefits and funds. What they give is the name and amount of each benefit, not what it is supposed to achieve, and the Citizen Account shows the cost of that omission. Someone tracking only the heading total would see social protection rise by more than four percentage points of state expenditure in 2025, while the indicative series that leaves the account out rose by less than one point. Without a statement of what the new line finances and what it replaces, a change in the presentation of transfers cannot be told apart from a change in policy. For that reason, the institution that receives an allocation, the way the allocation is classified, and its social purpose should each be recorded on their own. Otherwise, a reasonable guess about what a budget line covers can end up treated as a classification that the documents do not actually support. The Citizen Account is also the clearest case in the period of a budget measure that bears directly on an SDG target. The record of the budget's passage links it to moving fuel, electricity and water support from prices to cash transfers [77, 78], a reform relevant to target 12.c, which calls for inefficient fossil-fuel subsidies to be rationalized [1], as well as to social protection. The schedules, however, list it only as a social protection line, and its environmental relevance and SDG link can be seen only in documents outside the law.

Miranda-Lescano et al. [53] link social public spending to human development as captured by life expectancy, education and income, and Uddin et al. [52] find that spending aimed at equity reduces inequality across countries. The present paper is interested in the same question of what spending is for, although the Bahraini records cannot be used to test relationships of this kind. Nguyen and Le [54] find that spending and SDG progress are not linearly related, another reason to treat spending and outcomes separately. Nothing in the Bahraini results suggests that social or municipal spending failed to improve welfare; the documents simply lack the program and outcome information that such a judgment would need. Whether spending is socially relevant has to be established by investigation, not read off the amount spent.

As for RQ3, the SDGs are not mentioned in any of the three laws, and all three use the same form of disclosure. Gaps of this kind have been reported in other countries too. Hege et al. [18] point to a gap between SDG commitments and their use in budget decisions, and Elder and Newman [19] find that budget information is selective and

short on context even where governments do report SDG-related budgets. Godinho and Vaz de Lima [55] report that in Brazil the SDG links set out in the multi-year plan are not carried systematically into the annual budget law. The step they see as still needed is a move “from symbolic alignment to verifiable integration.” Italian cities treat the SDGs mainly as a reference framework for their strategic plans [56]. In Slovenia, green content has so far reached only a small part of the budget documents [46]. In Bahrain, too, the SDG link appears in strategic and reporting documents but stops short of the appropriation. The Bahraini case adds a further point, because its appropriation already has a functional classification and its organic budget law already provides for program objectives. Comparable instruments elsewhere show that such links can be published. The Philippine General Appropriations Act sets out organizational outcomes and performance indicators with targets for each agency [68], and in Mexico an annex to the budget proposal links most federal budget programs to at least one SDG [80]. Bahrain publishes neither kind of information with its budget law or with the Ministry's appropriation tables. Since the comparison covers published legislation only, it cannot show that ministry practice stayed the same, nor that the SDGs played no part in internal planning.

Okitasari and Kandpal [5] recommend building SDG targets into program budgets and moving toward results-oriented budgeting. The Bahraini case bears this out, since no one can judge alignment from a financial authorization when the links to programs are not shown. Bahrain's national sustainability commitments are the policy background to the question, and the legislative results show that those commitments cannot be followed through the published laws. Adding SDG labels would at least make the link easier to see. By itself, however, it would not show that a development goal had been reached, and without a performance indicator and a clear program purpose it would mean little.

Most of the growth in estimated expenditure was recurrent. Recurrent estimates include debt interest and subsidies (the schedules list many of these subsidies as social protection benefits), while project expenditure can pay for activities with very different objectives. The type of expenditure (recurrent or project) is therefore a weak indicator of sustainability, and an evaluation needs data on the objectives of spending in both categories, not an assumption that projects are more sustainable. The unallocated estimates point the same way. Where the Article 9 estimates and the

budget reserve finally go is decided only after enactment (Section 4.2), so the functional shares in the schedules reflect the law as passed rather than the way the money was eventually spent.

5.3 Contribution and Practical Implications

For the literature, the main contribution is to keep three things apart: the money allocated, the results achieved, and what is disclosed about sustainability. Once they are separated, the question is no longer whether money was spent but whether the available documents let anyone work out what it was for. Because sustainability has interrelated environmental, social and economic aspects [8], the evidence on each has to be gathered directly and cannot be inferred from a financial heading. On method, the coding treats a zero count of explicit references differently from missing spending data, so programs that are not observed are not written off, and the coding of the schedules shows how much a functional classification can reveal when objectives and indicators are absent. The Citizen Account adds a caution about shares. A share calculated from a functional heading depends on the denominator chosen and on how lines are presented: on the headline basis social protection rose from 12.05% to 17.64%, but without the Citizen Account and the line for limited-income households the rise was from 8.51% to 10.51% (Table 4). Comparisons over time need to be made on a consistent basis.

Miranda-Lescano et al. [53] and studies like theirs ask how expenditure relates to outcomes. This paper asks an earlier question, namely whether the authorizing instrument shows the documentary links that such an assessment depends on, and it reads the answer against Bahrain's legal framework for the budget. Its insight is contextual, methodological and conceptual; it is not presented as the first study of sustainability budgeting in Bahrain. The coding approach could be applied wherever budgets are authorized by a short legal text with annexed tables, and the law-boundary comparison wherever budgets are approved for more than one year.

In practice, anyone reading the budget documentation ought to be able to follow a program from its objective to its expected outcome and its allocation. Okitasari and Kandpal [5] call for SDG targets to be integrated into program budgets, and Godinho and Vaz de Lima [55] propose, for Brazil, a coding model that would attach SDG tags to existing budget programs without changing the legal structure of the budget.

Bahrain's organic budget law would support a similar step, since it already counts program objectives among the components of the general budget. The findings suggest five practical steps:

1. The Ministry of Finance and National Economy could publish, with each budget law, the program objectives that the organic law refers to, beginning with the environmental protection and social protection headings and giving each Schedule 3 line an SDG target tag and at least one performance indicator. Since ministries already prepare their budgets with performance indicators [15], this is mostly a matter of publishing information rather than collecting new data.
2. Where a new line replaces or absorbs older ones, as the Citizen Account did in 2025, a note to the schedule could name the lines replaced and say how much of the amount is new, which would keep functional shares comparable between laws.
3. The Council of Representatives and the Shura Council, which debate the budget under Article 109 of the Constitution [61], could ask for this information with the budget submission and use it when they scrutinize the budget, including the estimates that Article 9 leaves to be distributed after enactment.
4. The annual performance reports that the organic law already requires could then measure results against those same objectives and indicators.
5. When it reports budget figures in Voluntary National Reviews, the Ministry of Sustainable Development could use the schedule headings, so that the international report follows the same classification as the domestic authorization. The National Gender Balance Model, under which the general budget is monitored for its responsiveness to women's needs [59], shows that the administration already has some experience of reviewing the budget against a cross-cutting objective, and gender budgeting in OECD countries offers models for such cross-cutting tags [81].

To show what such tags could look like, Table 8 assigns candidate SDG targets [1] to the named lines of the environmental and social protection headings. The assignment is illustrative. It rests on the names of the lines and the wording of the targets, and a tag would need a stated program objective and an indicator before it could be used to track progress. Even so, it shows that the existing schedules could carry tags without

a change in their structure, much as the coding model proposed for Brazil would do [55].

Table 8 *Illustrative SDG target tags for named lines under the environmental and social protection headings*

Schedule 3 line	Heading	Candidate SDG targets
Supreme Council for Environment	Environmental protection	12.4, 13.2, 14.2, 15.5
National initiative for agricultural development	Environmental protection	2.4, 15.2
National Social Fund	Social protection	1.3, 10.4
Social Welfare Fund	Social protection	1.3
Retirees' living-standard allowance	Social protection	1.3, 10.4
Food subsidies	Social protection	2.1
Government's share in unemployment insurance	Social protection	1.3, 8.5
Housing support	Social protection	11.1
Support for limited-income households (to 2024)	Social protection	1.3, 10.4
Citizen Account (from 2025)	Social protection	1.3, 10.4, 12.c

Note. Targets of the 2030 Agenda [1]: 1.3 social protection systems; 2.1 access to food; 2.4 sustainable food production; 8.5 full and productive employment; 10.4 fiscal, wage and social protection policies for greater equality; 11.1 adequate and affordable housing; 12.4 sound management of chemicals and wastes; 12.c rationalization of inefficient fossil-fuel subsidies; 13.2 climate change measures in national policies; 14.2 marine and coastal ecosystems; 15.2 sustainable management of forests; 15.5 natural habitats and biodiversity. The tags are candidates assigned by the authors from the line names and public descriptions of the programs; they are not official classifications. Source: Schedule 3 of Law No. 9 of 2021, Law No. 5 of 2023 and Law No. 11 of 2025 [69–71].

An independent audit of the SDG tags would help to prevent the loose or double-counted links discussed in Section 2.2. With these steps in place, later evaluation becomes possible without assuming that more explicit reporting will improve outcomes by itself. Scrutiny would also be easier as financing needs change from one budget cycle to the next.

5.4 Limitations

Several limits apply to these interpretations. Only the published budget laws were studied, that is, their articles and schedules. Documents that are not published with

the law, such as the budget submitted to the legislature, ministry submissions, committee reports and internal program statements, were not examined, so the findings concern what the published authorizing instrument makes explicit, not what the government records or uses internally. Schedules 4 and 5 of Law No. 11 of 2025 were coded from the Ministry's text version of the tables rather than from the Gazette images, and the earlier laws were examined only through the Ministry's appropriation tables, without their operative articles; the tables for 2011–2012 and 2013–2014 were not examined. The figures taken from the Gazette text layer passed the reconciliations and comparisons described in Sections 3.2 and 4.1, but the 2021–2024 schedule lines were not checked one by one against the printed pages. All amounts are approved estimates in nominal terms, not audited outturns. The final accounts, which the Constitution requires to be submitted to the legislature and published (Article 113 [61]), were not used, apart from the 2021 total reported by the Central Bank of Bahrain. The environmental protection heading covers only part of the spending that is relevant to the environment. The Article 9 estimates and the budget reserve are distributed after enactment, and the revenue side, including any environmental taxes or levies, was not coded. All of the coding was done by one author, without an independent second coder, which is why the classifications and decision rules are reported in full in Appendix A and ESM 1. The comparison with earlier laws shows that the format of the schedules changed in 2017–2018, but not why, nor whether the change answered commitments other than the SDGs, such as international statistical standards. A single-country study with only illustrative comparisons also cannot say how far the pattern is specific to Bahrain. The results therefore cannot support causal claims, the conclusion that environmental and social considerations are absent from Bahrain's public sector, or statistical generalization to all budget records.

6. Conclusion

The study found that the operative articles of Bahrain's budget laws for 2021–2026 contain no environmental purposes, social program purposes, program objectives, SDG references or performance measures, while the annexed schedules classify spending by function and so identify environmental and social allocations. The recurrent appropriation under the environmental protection heading was about 0.15% of approved state expenditure in each year. Social protection rose from 12.05% to 17.64% between 2021 and 2025, although excluding the new Citizen Account line,

which consolidates several support programs, and the line for limited-income households, the rise was from 8.51% to 10.51%. No part of the laws states program objectives, SDG targets or indicators, the format did not change across the three laws, and the only redesign of the schedules found since 2009–2010, in 2017–2018, introduced a functional classification rather than objectives or indicators, although the organic budget law lists program objectives among the components of the general budget and official statements present the budget as aligned with the SDGs. Total estimated expenditure also rose, mainly with the 2025 law, and the rise was driven largely by subsidies and debt interest (Table 7).

Within the published laws, the link between allocations and the results they are meant to serve is therefore not visible, while a classification of spending already exists. Judging sustainability from the composition of expenditure or from budget growth rates is not possible, and the contribution of this paper is a clear boundary between the sustainability information that is missing and the fiscal information that is available.

Public accountability depends on citizens knowing what activities are funded, what needs they address, how their benefits are assessed and who benefits from them, and it is here that the boundary matters. The recommendation made in this paper draws on the program-based approach of Godinho and Vaz de Lima [55], who argue that budget coding should allow fiscal commitments to the SDGs to be tracked in a verifiable way. Links of that kind would improve future analysis without any assumption that a budget label demonstrates effective delivery.

Each budget law should be published with the program objectives that the organic budget law anticipates, together with SDG target tags and indicators for the lines of the schedules. Environmental and social categories should be kept separate; a program with both environmental and social aspects should carry both classifications and be counted only once in aggregate totals. Further studies should examine the budget documents that accompany the laws, compare approved estimates with the final accounts, extend the analysis to other Gulf states and to the operative articles of earlier laws, and apply independent coding. The evidence presented here supports the case for traceability, and it gives no support to the claim that Bahrain has not funded sustainability.

In the budget laws examined, sustainability goals are hard to see. A reader can find the amounts and the functions they are assigned to, for instance the 0.13% to 0.16% of approved state expenditure appropriated under the environmental protection heading, but cannot connect those amounts to SDG targets, environmental objectives or measurable social results. For accountability, funds have to be linked directly to the benefits they are meant to deliver. Judging how sustainable government expenditure is requires information on how the government intends to use, measure and distribute the money it authorizes, and the size of the budget cannot provide it.

Supplementary Information

ESM 1: Spreadsheet with the codes for the 33 operative articles and 15 annexed schedules of Law No. 9 of 2021, Law No. 5 of 2023 and Law No. 11 of 2025, together with the schedule amounts and the fiscal series analyzed in the paper.

Declarations

Data availability: All three budget laws and their schedules are publicly available on the official legislation portal of the Kingdom of Bahrain, and the appropriation tables for earlier budgets can be downloaded from the website of the Ministry of Finance and National Economy (links are listed in the references). The coding sheet for the articles and schedules, the schedule data and the fiscal dataset are provided in Electronic Supplementary Material (ESM) 1.

Ethics approval and consent to participate: Not applicable. The research draws only on published legal and official documents and involved no human participants, so no ethics approval was needed.

Consent for publication: Not applicable.

Funding: This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests: The authors declare no competing interests.

Use of generative AI: A large language model (Claude, Anthropic) was used to support language editing, structural revision and revision after an internal review, and to extract figures from the Official Gazette files; its use for data extraction and the

checks applied are described in Section 3.2. The authors reviewed and edited the content and take full responsibility for the publication.

References

1. United Nations. Transforming our world: the 2030 Agenda for Sustainable Development (A/RES/70/1). New York: United Nations; 2015. https://sdgs.un.org/2030agenda

2. Glass L-M, Newig J. Governance for achieving the Sustainable Development Goals: how important are participation, policy coherence, reflexivity, adaptation and democratic institutions? Earth System Governance. 2019;2:100031. https://doi.org/10.1016/j.esg.2019.100031

3. Guerrero OA, Castañeda G. How does government expenditure impact sustainable development? Studying the multidimensional link between budgets and development gaps. Sustainability Science. 2022;17(3):987–1007. https://doi.org/10.1007/s11625-022-01095-1

4. Guariso D, Guerrero OA, Castañeda G. Automatic SDG budget tagging: building public financial management capacity through natural language processing. Data & Policy. 2023;5:e31. https://doi.org/10.1017/dap.2023.28

5. Okitasari M, Kandpal R. Budgeting for the SDGs: lessons from the 2021 voluntary national reviews. UNU-IAS Policy Brief No. 32. Tokyo: United Nations University Institute for the Advanced Study of Sustainability; 2022. https://collections.unu.edu/view/UNU:8850

6. Krysovatyy A, Zvarych I, Brodovska O, Zvarych R. Global social sustainability and inclusion: the “voice” of social and environmental imbalances. Journal of Risk and Financial Management. 2022;15(12):599. https://doi.org/10.3390/jrfm15120599

7. Purvis B, Mao Y, Robinson D. Three pillars of sustainability: in search of conceptual origins. Sustainability Science. 2019;14(3):681–695. https://doi.org/10.1007/s11625-018-0627-5

8. Hariram NP, Mekha KB, Suganthan V, Sudhakar K. Sustainalism: an integrated socio-economic-environmental model to address sustainable development

and sustainability. Sustainability. 2023;15(13):10682. https://doi.org/10.3390/su151310682

9. Kingdom of Bahrain. From regional pioneer to global contender: the Economic Vision 2030 for Bahrain. Manama: Kingdom of Bahrain; 2008. https://www.bahrain.bh/wps/portal/en/BNP/AboutTheKingdom/Bahrain2030

10. Kingdom of Bahrain. Government Program (2023–2026): from recovery to sustainable growth. Manama: Prime Minister's Office; 2023. https://pmo.gov.bh/en/category/government-plan

11. Ministry of Sustainable Development. The Kingdom of Bahrain's second voluntary national review on the implementation of the Sustainable Development Goals. Manama: Kingdom of Bahrain; 2023. https://hlpf.un.org/countries/bahrain/voluntary-national-reviews-2023

12. Kingdom of Bahrain. The state budget. Bahrain National Portal; 2025. https://business.bahrain.bh/wps/portal/en/BNP/BahrainAtAGlance/TheStateBudget. Accessed 20 Oct 2026.

13. Lienert I, Jung M-K. The legal framework for budget systems: an international comparison. OECD Journal on Budgeting. 2004;4(3). https://doi.org/10.1787/budget-v4-3-en

14. OECD. OECD good practices for performance budgeting. Paris: OECD Publishing; 2019. https://doi.org/10.1787/c90b0305-en

15. Ministry of Finance and National Economy. The general state budget (in Arabic). Manama: Ministry of Finance and National Economy. https://www.mofne.gov.bh/%D8%B9%D9%86-%D8%A7%D9%84%D9%88%D8%B2%D8%A7%D8%B1%D8%A9/%D9%86%D8%A8%D8%B0%D8%A9/%D8%A7%D9%84%D9%85%D9%8A%D8%B2%D8%A7%D9%86%D9%8A%D8%A9-%D8%A7%D9%84%D8%B9%D8%A7%D9%85%D8%A9-%D9%84%D9%84%D8%AF%D9%88%D9%84%D8%A9/. Accessed 28 Oct 2026.

16. Biermann F, Hickmann T, Sénit C-A, Beisheim M, Bernstein S, Chasek P, et al. Scientific evidence on the political impact of the Sustainable Development

Goals. Nature Sustainability. 2022;5(9):795–800. https://doi.org/10.1038/s41893-022-00909-5

17. Hickmann T, Biermann F, Sénit C-A, Sun Y, Bexell M, Bolton M, et al. Scoping article: research frontiers on the governance of the Sustainable Development Goals. Global Sustainability. 2024;7:e7. https://doi.org/10.1017/sus.2024.4

18. Hege E, Brimont L, Pagnon F. Sustainable development goals and indicators: can they be tools to make national budgets more sustainable? Public Sector Economics. 2019;43(4):423–444. https://doi.org/10.3326/pse.43.4.5

19. Elder M, Newman E. Monitoring G20 countries' SDG implementation policies and budgets reported in their voluntary national reviews (VNRs). Sustainability. 2023;15(22):15733. https://doi.org/10.3390/su152215733

20. Meyer JW, Rowan B. Institutionalized organizations: formal structure as myth and ceremony. American Journal of Sociology. 1977;83(2):340–363. https://doi.org/10.1086/226550

21. Bromley P, Powell WW. From smoke and mirrors to walking the talk: decoupling in the contemporary world. Academy of Management Annals. 2012;6(1):483–530. https://doi.org/10.1080/19416520.2012.684462

22. Seawright J, Gerring J. Case selection techniques in case study research: a menu of qualitative and quantitative options. Political Research Quarterly. 2008;61(2):294–308. https://doi.org/10.1177/1065912907313077

23. Kingdom of Bahrain. Decree-Law No. 39 of 2002 on the General Budget (in Arabic). Manama: Legislation and Legal Opinion Commission. https://www.lloc.gov.bh/Legislation/HTM/L3902

24. Mishra M, Desul S, Santos CAG, Mishra SK, Kamal AHM, Goswami S, et al. A bibliometric analysis of sustainable development goals (SDGs): a review of progress, challenges, and opportunities. Environment, Development and Sustainability. 2024;26(5):11101–11143. https://doi.org/10.1007/s10668-023-03225-w

25. Zaidan E, Al-Saidi M, Hammad SH. Sustainable development in the Arab world – is the Gulf Cooperation Council (GCC) region fit for the challenge?

Development in Practice. 2019;29(5):670–681. https://doi.org/10.1080/09614524.2019.1628922

26. Al-Saidi M. Disentangling the SDGs agenda in the GCC region: priority targets and core areas for environmental action. Frontiers in Environmental Science. 2022;10:1025337. https://doi.org/10.3389/fenvs.2022.1025337

27. Dempsey N, Bramley G, Power S, Brown C. The social dimension of sustainable development: defining urban social sustainability. Sustainable Development. 2011;19(5):289–300. https://doi.org/10.1002/sd.417

28. Summers JK, Smith LM. The role of social and intergenerational equity in making changes in human well-being sustainable. Ambio. 2014;43(6):718–728. https://doi.org/10.1007/s13280-013-0483-6

29. Leal Filho W, Azeiteiro U, Alves F, Pace P, Mifsud M, Brandli L, et al. Reinvigorating the sustainable development research agenda: the role of the sustainable development goals (SDG). International Journal of Sustainable Development & World Ecology. 2018;25(2):131–142. https://doi.org/10.1080/13504509.2017.1342103

30. Alonso-Morales N, Gil-García P, Sáez-Martín A, Caba-Pérez C. The green mandate: how local government characteristics shape climate action performance in Spanish municipalities. Discover Sustainability. 2025;6:1264. https://doi.org/10.1007/s43621-025-02150-4

31. Hendriks CJ. Municipal financing for sustainable development: a case of South Africa. Local Economy. 2018;33(7):757–774. https://doi.org/10.1177/0269094218811799

32. Satterthwaite D. Missing the Millennium Development Goal targets for water and sanitation in urban areas. Environment and Urbanization. 2016;28(1):99–118. https://doi.org/10.1177/0956247816628435

33. Fiszbein A, Schady N. Conditional cash transfers: reducing present and future poverty. Washington, DC: World Bank; 2009. https://doi.org/10.1596/978-0-8213-7352-1

34. Cecchini S, Madariaga A. Conditional cash transfer programmes: the recent experience in Latin America and the Caribbean. Cuadernos de la CEPAL No.

95. Santiago: Economic Commission for Latin America and the Caribbean; 2011. https://repositorio.cepal.org/entities/publication/e7916af6-7627-4005-85e5-3e96f3c4c5d5

35. Grum B, Kobal Grum D. Concepts of social sustainability based on social infrastructure and quality of life. Facilities. 2020;38(11/12):783–800. https://doi.org/10.1108/F-04-2020-0042

36. Ajili W, Ayoub H. The social sustainability of public debt in the framework of Middle East and North African countries: Egypt, Lebanon, Morocco, Tunisia, and Turkey. Journal of Sustainable Development. 2020;13(4):251–267. https://doi.org/10.5539/jsd.v13n4p251

37. Göçoğlu V, Düzsöz E, Pradhan P. Five lessons from a decade of Sustainable Development Goals policy traction. Sustainable Development. 2026. https://doi.org/10.1002/sd.71408

38. OECD. Green budgeting in OECD countries 2024. Paris: OECD Publishing; 2024. https://doi.org/10.1787/9aea61f0-en

39. United Nations Development Programme. Budgeting for the SDGs: a modular handbook. New York: UNDP; 2022. https://sdgfinance.undp.org/resource-library/budgeting-sdgs-modular-handbook-0

40. Robinson M. Program classification for performance-based budgeting: how to structure budgets to enable the use of evidence. Washington, DC: World Bank; 2013. https://openknowledge.worldbank.org/entities/publication/954b687a-9f63-504b-b7c2-a9e99ae9e208

41. World Bank. Climate change budget tagging: a review of international experience. Equitable Growth, Finance and Institutions Insight. Washington, DC: World Bank; 2021. https://hdl.handle.net/10986/35174

42. Gonguet F, Wendling C, Aydin O, Battersby B. Climate-sensitive management of public finances: “green PFM”. IMF Staff Climate Note 2021/002. Washington, DC: International Monetary Fund; 2021. https://doi.org/10.5089/9781513583044.066

43. OECD. Taxing energy use 2019: using taxes for climate action. Paris: OECD Publishing; 2019. https://doi.org/10.1787/058ca239-en

44. de Renzio P, Wehner J. The impacts of fiscal openness. The World Bank Research Observer. 2017;32(2):185–210. https://doi.org/10.1093/wbro/lkx004

45. Bozatlı O, Erdem A, Aydın M, Bektur C. Towards SDG-aligned carbon neutrality in EU countries: how energy policy, energy R&D budget, and sustainable growth shape the transition? Sustainable Development. 2026. https://doi.org/10.1002/sd.70848

46. Stanimirović T, Lah LM, Kotnik Ž, Klun M. Green budgeting implementation in financing of sustainable society: experience of Slovenia. Management: Journal of Contemporary Management Issues. 2023;28(Special Issue):79–91. https://doi.org/10.30924/mjcmi.28.si.6

47. Tang Z, Zhang Z, Deng W. Government environmental expenditure, budget management, and regional carbon emissions: provincial panel data from China. Sustainability. 2024;16(15):6707. https://doi.org/10.3390/su16156707

48. Constantinescu A, Platon V, Surugiu M, Frone S, Antonescu D, Mazilescu R. The influence of eco-investment on e-waste recycling: evidence from EU countries. Frontiers in Environmental Science. 2022;10:928955. https://doi.org/10.3389/fenvs.2022.928955

49. Çağlar AE, Yavuz E. The role of environmental protection expenditures and renewable energy consumption in the context of ecological challenges: insights from the European Union with the novel panel econometric approach. Journal of Environmental Management. 2023;331:117317. https://doi.org/10.1016/j.jenvman.2023.117317

50. Degirmenci T, Ünsal Y. Achieving sustainable development through the green budget in the European Union: the role of renewable energy, energy productivity, and environmental policy. Sustainable Development. 2026;34(4):5364–5381. https://doi.org/10.1002/sd.70624

51. Cristóbal J, Ehrenstein M, Domínguez-Ramos A, Galán-Martín Á, Pozo C, Margallo M, et al. Unraveling the links between public spending and Sustainable Development Goals: insights from data envelopment analysis.

Science of the Total Environment. 2021;786:147459. https://doi.org/10.1016/j.scitotenv.2021.147459

52. Uddin GS, Le AH, Hasan MB, Beirne J, Park D. Public spending and inclusive growth: a cross-country empirical analysis. Journal of International Money and Finance. 2026;162:103528. https://doi.org/10.1016/j.jimonfin.2026.103528

53. Miranda-Lescano R, Muinelo-Gallo L, Roca-Sagalés O. Human development and inequalities: the importance of social public spending. Structural Change and Economic Dynamics. 2024;69:363–377. https://doi.org/10.1016/j.strueco.2023.12.008

54. Nguyen THP, Le HP. Promoting global Sustainable Development Goals (SDGs) through aggregate and sectoral public spending: is more always better? Sustainable Development. 2026. https://doi.org/10.1002/sd.71364

55. Godinho PM, Vaz de Lima D. Integrating the SDGs into Brazil's public budget: pathways for sustainable governance toward COP30. RP3 – Revista de Pesquisa em Políticas Públicas. 2025;1(3):56–71. https://doi.org/10.18829/2317-921X.2025.e60121

56. Guarini E, Mori E, Zuffada E. Localizing the Sustainable Development Goals: a managerial perspective. Journal of Public Budgeting, Accounting & Financial Management. 2022;34(5):583–601. https://doi.org/10.1108/JPBAFM-02-2021-0031

57. Funk C, Tönjes E, Teuber R, Breuer L. Finding common development paths in voluntary national reviews reporting on sustainable development goals using aspect-based sentiment analysis. PLOS ONE. 2024;19(8):e0307886. https://doi.org/10.1371/journal.pone.0307886

58. Breuer A, Leininger J, Malerba D, Tosun J. Integrated policymaking: institutional designs for implementing the sustainable development goals (SDGs). World Development. 2023;170:106317. https://doi.org/10.1016/j.worlddev.2023.106317

59. Ministry of Sustainable Development. The Kingdom of Bahrain's third voluntary national review. Manama: Kingdom of Bahrain; 2026. https://sdgs.gov.bh/PDFfiles/EN/Bahrain_VNR_report_2026.pdf

60. Kingdom of Bahrain. Decree-Law No. 40 of 2012 amending certain provisions of Decree-Law No. 39 of 2002 on the General Budget (in Arabic). Manama: Legislation and Legal Opinion Commission. https://www.lloc.gov.bh/Legislation/HTM/L4012

61. Kingdom of Bahrain. Constitution of the Kingdom of Bahrain (2002, as amended). English translation. Constitute Project. https://www.constituteproject.org/constitution/Bahrain_2017

62. Aldada A, Alrasheed R, Khalifa M. Sustainable development in Bahrain: analysis of industry sectors, the economy, sustainable communities, the environment and the quality of government institutions. In: 2024 ASU International Conference in Emerging Technologies for Sustainability and Intelligent Systems (ICETSIS). Manama: IEEE; 2024. p. 2007–2013. https://doi.org/10.1109/ICETSIS61505.2024.10459692

63. Bromley P, Hwang H, Powell WW. Decoupling revisited: common pressures, divergent strategies in the U.S. nonprofit sector. M@n@gement. 2012;15(5):468–501. https://doi.org/10.3917/mana.155.0469

64. Stål HI, Corvellec H. Organizing means–ends decoupling: core–compartment separations in fast fashion. Business & Society. 2022;61(4):857–885. https://doi.org/10.1177/00076503211001856

65. Brunsson N. The organization of hypocrisy: talk, decisions and actions in organizations. Chichester: Wiley; 1989.

66. Pritchett L, Woolcock M, Andrews M. Looking like a state: techniques of persistent failure in state capability for implementation. Journal of Development Studies. 2013;49(1):1–18. https://doi.org/10.1080/00220388.2012.709614

67. Mauro SG, Cinquini L, Pianezzi D. New Public Management between reality and illusion: analysing the validity of performance-based budgeting. The British Accounting Review. 2021;53(6):100825. https://doi.org/10.1016/j.bar.2019.02.007

68. Republic of the Philippines. General Appropriations Act, fiscal year 2023, Volume II. Manila: Department of Budget and Management; 2023.

https://www.dbm.gov.ph/wp-content/uploads/GAA/GAA2023/VolumeII/DBM/A.pdf

69. Kingdom of Bahrain. Law No. 9 of 2021 approving the General State Budget for the fiscal years 2021 and 2022, with its schedules (in Arabic). Official Gazette; 2021. https://www.lloc.gov.bh/PDF/K0921.pdf

70. Kingdom of Bahrain. Law No. 5 of 2023 approving the General State Budget for the fiscal years 2023 and 2024, with its schedules (in Arabic). Official Gazette; 2023. https://www.lloc.gov.bh/PDF/K0523.pdf

71. Kingdom of Bahrain. Law No. 11 of 2025 approving the General State Budget for the fiscal years 2025 and 2026, with its schedules (in Arabic). Official Gazette; 2025. https://www.lloc.gov.bh/PDF/K1125.pdf

72. Ministry of Finance and National Economy. Appropriation law tables and state budget files, 2003–2004 to 2025–2026 (in Arabic and English). Manama: Ministry of Finance and National Economy. https://www.mofne.gov.bh/yearly-budget. Accessed 28 Oct 2026.

73. Akhbar Al Khaleej. Details of the new budget (in Arabic). 25 Mar 2025. https://akhbar-alkhaleej.com/news/article/1396492

74. Krippendorff K. Content analysis: an introduction to its methodology. 4th ed. Thousand Oaks: SAGE; 2018.

75. United Nations. Classifications of expenditure according to purpose. Statistical Papers Series M No. 84. New York: United Nations; 2000.

76. Eurostat. Government expenditure on environmental protection. Statistics Explained. Luxembourg: Eurostat; 2025. https://ec.europa.eu/eurostat/statistics-explained/index.php/Government_expenditure_on_environmental_protection. Accessed 28 Oct 2026.

77. Council of Representatives. The executive and legislative authorities review the advantages of the Citizen Account (in Arabic). Manama: Council of Representatives; 19 Mar 2025. https://www.nuwab.bh/%D8%A7%D9%84%D8%B3%D9%84%D8%B7%D8%AA%D8%A7%D9%86-

%D8%A7%D9%84%D8%AA%D9%86%D9%81%D9%8A%D8%B0%D9%8A%D8%A9-%D9%88%D8%A7%D9%84%D8%AA%D8%B4%D8%B1%D9%8A%D8%B9%D9%8A%D8%A9-%D8%AA%D8%B3%D8%AA%D8%B9%D8%B1-2/

78. Daily Tribune. Petrol price in Bahrain set to be adjusted based on global market rates. 14 Mar 2025. https://www.newsofbahrain.com/bahrain/109967.html

79. Central Bank of Bahrain. Economic report 2021 (in Arabic). Manama: Central Bank of Bahrain; 2022. https://www.cbb.gov.bh/wp-content/uploads/2022/07/ER2021.pdf

80. Secretaría de Hacienda y Crédito Público. Proyecto de Presupuesto de Egresos de la Federación 2021: Exposición de Motivos, Anexo 5.1, Vinculación del presupuesto con el desarrollo sostenible (in Spanish). Mexico City: SHCP; 2020. https://www.ppef.hacienda.gob.mx/work/models/PPEF2021/docs/exposicion/EM_Anexo.pdf

81. Downes R, von Trapp L, Nicol S. Gender budgeting in OECD countries. OECD Journal on Budgeting. 2017;16(3):71–107. https://doi.org/10.1787/budget-16-5jfq80dq1zbn

Appendix A. Coding of the budget laws and their schedules

The three laws follow the same structure of 11 operative articles and five annexed schedules. Table A1 lists the provision contained in each article and Table A2 the content of each schedule, with the coding result for each feature, and Table A3 gives the decision rule for each feature. Each result applies to all three laws (Law No. 9 of 2021, Law No. 5 of 2023 and Law No. 11 of 2025), except where Table A2 states otherwise; for Law No. 11 of 2025, Schedules 4 and 5 were coded from the Ministry's text version of the tables. The schedules of earlier laws are summarized in Table 5.

Table A1 *Coding of the operative articles of the budget laws, 2021–2026*

Article	Provision	ENV	SOC	OBJ	SDG	PM
1	Estimated state revenue	0	0	0	0	0
2	Total estimated state expenditure	0	0	0	0	0
3	Recurrent expenditure	0	0	0	0	0
4	Project expenditure	0	0	0	0	0
5	Transfer from oil revenue to the Future Generations Reserve	0	0	0	0	0
6	Estimated deficit and its financing	0	0	0	0	0
7	Collection of revenue and execution of expenditure under the financial rules	0	0	0	0	0
8	Revenue and expenditure of the municipalities and the Capital Secretariat	0	0	0	0	0
9	Other ministry estimates distributed by the Minister of Finance, with provision for reporting the distributions	0	0	0	0	0
10	Implementation instructions issued by the Minister of Finance	0	0	0	0	0
11	Implementation by the Prime Minister and ministers; publication in the Official Gazette	0	0	0	0	0
Total	All articles in the three laws	0/33	0/33	0/33	0/33	0/33

Note. 1 = feature stated explicitly; 0 = feature not found in a fully reviewed article. ENV = environmental purpose; SOC = social program purpose; OBJ = program objective or expected result; SDG = explicit reference to the Sustainable Development Goals; PM = environmental or social performance measure. Each article type received the same code in all three laws; the code for each article of each law is given in ESM 1.

Table A2 *Coding of the annexed schedules of the budget laws, 2021–2026*

Schedule	Content	ENV	SOC	OBJ	SDG	PM
1	Total revenue and expenditure by economic category	0	0	0	0	0
2	Revenue by ministry and government entity, grouped by sector	n/a[a]	n/a[a]	0	0	0
3	Recurrent expenditure by ministry and government entity, grouped by sector	1	1	0	0	0
4[b]	Project expenditure by ministry and government entity, grouped by sector	1	1	0	0	0
5[b]	Revenue and expenditure of the municipalities and the Capital Secretariat[c]	0	0	0	0	0

Note. Codes as in Table A1; n/a = not applicable. For the schedules, ENV and SOC record that a heading names an environmental or social function, or that a line names a social benefit or fund; they do not record a statement of what the spending is meant to achieve (Table A3). [a] The sector headings in this schedule group revenue rather than allocations, so ENV and SOC were not coded. [b] For Law No. 11 of 2025, coded from the Ministry of Finance and National Economy's text version of the tables, because the Gazette file reproduces these schedules as images. [c] The schedule gives only the aggregate revenue and expenditure of the municipalities and the Capital Secretariat.

Table A3 *Decision rules for the coded features*

Feature	Coded 1 when	Not sufficient on its own
ENV: environmental purpose	An article states an environmental purpose; in a schedule, a heading names an environmental function (environmental protection)	The subject matter of a provision; the name of an entity listed under another heading; oil revenue or transfers to the Future Generations Reserve
SOC: social program purpose	An article states a social program purpose; in a schedule, a heading names a social function (social protection, health or education) or a line names a social benefit or fund	The name of an entity alone; municipal appropriations without a stated social program; transfers to the Future Generations Reserve
OBJ: program objective or expected result	The text states what an allocation is intended to achieve, as an objective, an expected result or a target	A heading, a line name or an amount; a reference to the mandate of an entity
SDG: reference to the SDGs	The text refers to the Sustainable Development Goals, to a numbered goal or target, or to the 2030 Agenda	The words "sustainable development" in the name of an entity
PM: performance measure	The text specifies an indicator, a quantity or a target value against which an environmental or social result can be measured	A financial amount, or a change in an allocation from one year to the next

Note. A value of 0 means that the feature was not found in a fully reviewed text; documents that could not be read were recorded as missing. A text could carry both ENV and SOC codes, but its amount would be counted only once in any total.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- ESM1.xlsx