

PEDAL BRIEF 3 | OCTOBER 2025

# SENEGAL ASSESSMENT

For nearly three decades, Senegal has been recognized as a regional leader in advancing nutrition, reducing under-five stunting from 34 percent in 1992 to 19 percent in 2014 (Kampman et al. 2017), and further to 15.1 percent by 2023 (ANSD and ICF 2024). This progress has been underpinned by a multi-sectoral and decentralized approach, with local governments playing an increasingly central role in policy implementation. Large-scale food fortification (LSFF) has been a cornerstone of this agenda, with Senegal—alongside Nigeria—pioneering fortification standards in the 2000s for edible oil, wheat flour, and salt, and subsequently institutionalizing the approach through the 2006 Strategic Plan for the Fortification of Foods and two successive national fortification strategies, the most recent of which was launched in May 2025. Yet despite these achievements, Senegal now faces mounting fiscal pressures, shifting donor priorities, and persistent micronutrient challenges, all of which threaten to slow or reverse momentum around LSFF.

To understand the opportunities for improving uptake and implementation of LSFF in Senegal, this brief applies the Political Economy Diagnostic for Assessing Large-Scale Food Fortification (PEDAL) framework. PEDAL focuses on the political will and implementation capacity of actors across the public sector, private sector, and civil society. The public sector refers to government ministries, agencies, executives, legislators, and bureaucrats. Their primary responsibilities with respect to LSFF include reinforcing multistakeholder collaboration and performing quality control functions, including regulating standards, certifying products, testing food quality, and imposing sanctions for noncompliance. The private sector comprises food producers,

## KEY FINDINGS

- Senegal has a well-established LSFF ecosystem with high buy-in from government, private sector, civil society, and academics. Yet, compliance varies across vehicles and micro-nutrients.
- To understand bottlenecks and opportunities for scaling up LSFF, the PEDAL framework was applied to Senegal.
- PEDAL shows that in Senegal, LSFF programs increasingly rely on donor support, which has become more precarious due to macroeconomic pressures and shifting government priorities. This highlights the need for more sustainable financing.
- As Senegal considers fortifying new vehicles like rice and bouillon, careful planning is needed to avoid overextending resources, while updated micronutrient and compliance data are essential to guide standards and ensure equitable impact.

processors, retailers, and social enterprises that work with non-governmental organizations (NGOs). Civil society actors include consumers, research institutes, universities, journalists, and both domestic and international NGOs. Political will refers to the interests, ideas, and leverage across these actors. Implementation capacity includes the institutional architecture for cross-stakeholder collaboration and technical requisites related to the addition and monitoring of micronutrients within selected food vehicles. For more details about PEDAL, please see the accompanying methodology brief (Resnick 2025).

In Senegal, PEDAL was applied through a combination of secondary sources and 26 key informant interviews (KII) with representatives from 18 institutions engaged in food fortification, conducted between April and September 2025. The analysis highlights several areas that require attention to preserve and deepen progress. A major priority is securing reliable and predictable financing for the Committee for the Fortification of Foods with Micro-nutrients (COSFAM), which has struggled with stalled resources. Equally important is upgrading laboratory infrastructure and ensuring a steady supply of testing materials to improve monitoring and enforcement. Rising premix and raw material costs also demand innovative solutions, as they threaten both industry participation and program sustainability. At the same time, deliberations on expanding fortification to new vehicles such as rice and bouillon must be carefully weighed against emerging health concerns, including high salt intake and the risk of excessive micronutrient exposure. Finally, while private sector, civil society, and academic engagements remain strong, sustained political leadership and inter-ministerial coordination will be essential to navigate tightening fiscal conditions and reduced donor funding.

The remainder of this brief provides an overview of the institutional landscape for LSFF in Senegal and discusses the findings from PEDAL. More details from the analysis can be found in Resnick and Diatta (2025).

## INSTITUTIONAL LANDSCAPE FOR LSFF IN SENEGAL

Table 1 below summarizes key institutional actors involved in LSFF in Senegal. The public sector is led by the National Nutrition Development Council (CNDN), which coordinates nutrition

## CHRONOLOGY of LSFF EFFORTS in SENEGAL

**1994**

Adoption of salt iodization strategy

**2001**

Establishment of the Nutrition Coordination Unit (CLM) and mandatory fortification of edible salt

**2006**

Creation of the Senegalese Committee for the Fortification of Foods with Micronutrients (COSFAM) and launch of first National Fortification Strategy (2006-2011)

**2008**

Mandatory standards for vitamin A in edible oils and iron/folic acid in wheat flour

**2017**

Launch of Second Fortification Strategic Plan (2017-2021)

**2025**

Third fortification strategy (PSF 2025-2029) launched

policy across ministries and local governments, and the Senegalese Committee for the Fortification of Foods with Micronutrients (COSFAM), the main fortification alliance. Key ministries and agencies include the Ministry of Industry and Trade (MIC), the Ministry of Health and Public Hygiene (MSHP), the Senegalese Standards Agency (ASN), and the National Laboratory of Analysis and Control (LANAC). Private sector actors include the six mills that comprise the Association of Senegalese Industrial Millers (AMIS), major salt producers and processors, and edible oil refiners. Civil society and academic partners include the Consumer Association of Senegal (ASCOSÉN), EcoCitoyen, National Union of Senegalese Consumers (UNCS), University Cheikh Anta Diop (UCAD), Food Technology Institute (ITA) and University Gaston Berger (UGB), providing research, monitoring, and community engagement. Donors and technical partners—Nutrition International (NI), United Nations Children’s Fund (UNICEF), Helen Keller International (HKI), Catholic Relief Services (CRS), World Food Program (WFP), Gates Foundation, and GAIN—support funding, training, technical assistance, and equipment for LSFF implementation.

**Table 1: Key institutional stakeholders in Senegal’s food fortification landscape**

	STAKEHOLDER	RELEVANCE FOR LSFF	ISSUES/ CHALLENGES
<b>PUBLIC SECTOR</b>	MIC	Supports the LSFF regulatory framework and ensures quality control of fortified foods: <ul style="list-style-type: none"> <li>• Directorate of Internal Trade (DCI) that monitors iodized salt compliance.</li> <li>• Division of Consumption and Consumer Safety (DCSC) that monitors fortified oil and wheat flour.</li> <li>• Coordinates with gendarmerie, police, and customs for compliance testing.</li> </ul>	Weak border monitoring; centralization of test kits/reagents in Dakar that limits regional testing capacity; slow procurement; need for agent training and motivation.
	ASN	Develops national LSFF standards and represents Senegal at regional and international levels.	Outdated survey data limits updates to micronutrient standards
	LANAC	The national reference laboratory for food control, accredited for vitamin A and iodine.	Lack of reagents for testing kits, unable to test for folic acid
	MSHP	Central to nutrition policy and provides input into LSFF through COSFAM discussions.	Needs updated nutrition data for policy adjustments.
	CNDN	Provides high-level oversight and strategic guidance for LSFF, particularly salt iodization.	Complex inter-ministerial coordination and policy implementation; balancing salt and new fortification initiatives; maintaining strategic coherence amid donor agendas; delayed government budget disbursements.
	COSFAM	Technical arm of CNDN; advances LSFF discussions, focusing on edible oil and wheat flour fortification; includes nutrition and bouillon technical committees for targeted analysis.	Insufficient staffing and lack of a permanent secretariat; budgetary constraints and growing interest in alternative food vehicles risk reducing strategic focus and coordination
<b>PRIVATE SECTOR</b>	Millers that belong to AMIS, salt producers and	Integrate vitamins and premix into food vehicles, and ideally comply with the LSFF standards set by ASN	Rising costs of premix and premix tariffs, insufficient testing materials for key

	STAKEHOLDER	RELEVANCE FOR LSFF	ISSUES/ CHALLENGES
	processors, edible oil refiners		micronutrients (e.g. folic acid), price controls on certain foods
CIVIL SOCIETY	ASCOSEN; EcoCitoyen; UNCS	Represents consumer interests; participates in COSFAM; raises awareness about fortified foods.	Limited funding; donor-dependent campaigns; low consumer awareness in low-income and remote areas.
	Universities & Research Institutes (UCAD, UGB, ITA, Pasteur Institute)	Conduct research on fortified foods, micronutrient deficiencies, M&E; provide lab testing, technical guidance, and support COSFAM.	Limited domestic capacity for folic acid and zinc testing thus creating dependence on international partnerships for some analyses; coordination across CSOs and academia needed to avoid duplication.
DONORS AND UN AGENCIES	Nutrition International, UNICEF, HKI, CRS, WFP, Gates Foundation, GAIN	Provide long-term technical and financial support for LSFF, including training, equipment, premix supply, monitoring systems, data platforms, and research; work closely with COSFAM, universities, and public sector agencies.	Heavy reliance on donor support risks LSFF sustainability if funding or technical assistance declines; coordination across multiple partners can be fragmented.

Source: Author's compilation.

## OPPORTUNITIES AND CHALLENGES WITH EXISTING FORTIFIED FOODS

All of the actors described above are also shaping Senegal's current landscape for large-scale food fortification. Reviewing existing and potential food vehicles, including the long-standing salt program, efforts around wheat flour and oil, and emerging initiatives for rice and bouillon fortification, highlights both progress made and challenges ahead.

### Salt Fortification

Senegal is the largest producer of salt in West Africa, generating approximately 550,000 tons annually and exporting 60–80% of it, with the remainder consumed locally through table salt, food processing, bouillon, or livestock feed (TechnoServe 2023). The industry includes large-scale refiners such as Société Nouvelles des Salins du Sine Saloum (SSS) and companies like PATISEN and SENICO, alongside artisanal production concentrated in regions like Kaffrine, Casamance, Fatick, and Saint-Louis. Despite occasional import reliance, domestic production has largely recovered, though climate events, such as the 2022 Lac Rose floods, have disrupted supply and driven price volatility. Salt fortification is broadly accepted by businesses and civil society, and the government has successfully leveraged sanctions and unannounced inspections to ensure compliance. Industry actors also have opportunities to engage in policy dialogue, such as through the 2023 Business Forum in the Salt Industry (FAIS).

Challenges for salt fortification include high costs for potassium iodate, variability in raw material quality, and financial sustainability for producers, particularly for small-scale operations. Industrial processors report losses due to low-quality artisanal salt that requires additional washing, refining, and re-iodization. Labeling and traceability remain difficult, especially for small-scale producers, and

lack of reagents limits the effectiveness of iCheck machines used to verify iodine content. Additionally, micronutrient storage and distribution are sensitive; iodine degrades quickly under sunlight, humidity, or extended transport, requiring frequent iodization throughout the supply.

## Wheat Flour

Senegal imports all its wheat but processes nearly all of it domestically, producing around 580,000 metric tons as of 2022 through six major milling companies (TechnoServe 2023). The medium number of large-scale mills allows relatively easy oversight of iron fortification, with studies showing over 80 percent of domestically produced wheat flour sold in Dakar and Thiès meets iron standards (Faye et al. 2025). This concentrated market structure, combined with routine testing by millers, ensures broad compliance with iron fortification, although folic acid fortification remains inconsistent. Current standards are below WHO recommendations, contributing to persistent folate deficiencies among women of reproductive age and children under five (Adams, Engel-Stone et al. 2024). Consideration is also being given to adding zinc to the wheat flour standard to address national zinc deficiencies.

The main challenges include the high cost of premixes, particularly folic acid, which millers often purchase from China, France, or India. Rising reagent costs and taxes on premix imports are also a major source of grievance. Government-imposed price ceilings on bread further compress margins, as millers must absorb costs for production, distribution, and premixes. While large-scale millers regularly test iron content, their capacity to verify folic acid is limited, and private sector dosing abilities remain constrained for this micronutrient. Despite these challenges, millers do not actively resist fortification, and frequent engagement with the government helps maintain compliance and policy alignment.

## Edible Oil

Vitamin A fortification of edible oil remains one of the biggest challenges in Senegal. While all edible oil is legally mandated to be fortified, domestic consumption is skewed toward imported palm and soybean oils, with much of the locally produced peanut oil exported. The market is highly fragmented and oversight is complicated by the existence of more than 40 brands (some lacking proper labeling) and significant inflows of smuggled oil from neighboring countries. Large-scale refiners generally have the capacity to test for vitamin A using in-house laboratories and high-performance equipment, but smaller refiners face difficulties with packaging, storage, and dosing, leading to nutrient degradation. Vitamin A itself is highly sensitive to sunlight and heat, requiring careful handling throughout distribution. A further complication is that crude peanut oil (*Ségal*), mainly produced in Touba and widely consumed by poorer households, cannot be fortified and artisanal producers have resisted regulation due to their political clout.

Although the cost of fortification itself is modest, adding roughly 6–7 CFA per liter, the lack of donor-supported centralized premix purchasing and rising input costs create financial pressure, especially for smaller refiners. Unlike wheat flour, the edible oil sector lacks a strong industry association to coordinate across actors, though larger refiners have shown interest in organizing. Border monitoring

also remains weak, allowing non-fortified oils to enter the market. Nevertheless, large refiners are generally compliant with fortification standards, reflecting the combination of mandatory regulations, oversight by MIC, and private sector quality-control practices.

### **Other Potential Vehicles for Mass Fortification**

Bouillon cubes, consumed by 90 percent of Senegal's population, have long been considered a potential fortification vehicle, with voluntary iron fortification initiated by Nestlé's Maggi brand in 2013. The market remains dominated by multinationals like GB Foods, Nestlé, and Unilever, though Senegalese companies like Senico and Patisen also have a broader domestic market. Multinational companies face relatively few barriers to bouillon fortification since they already have the equipment in place, but domestic producers remain concerned about high premix and start-up costs beyond other key production expenses like ingredients and transport.

Despite bouillon's wide reach, its fortification is highly contentious. For instance, nutrition academics and organizations, as well as the Ministry of Health, are concerned about its excess salt and MSG content. The controversy is further complicated by the government's 2021 decision to tax bouillon cubes to curb salt consumption, which appears inconsistent with targeting the vehicle for fortification. While several studies suggest that fortifying bouillon with multiple micronutrients could help reduce deficiencies in Senegal, disagreements over public health trade-offs, alongside donor fragmentation and questions of nutrient overconsumption, have stalled progress.

Rice, Senegal's most widely consumed cereal at 198 grams per person per day (WFP & NI 2019), is now being considered for fortification with iron, vitamin A, B vitamins, and zinc. Despite self-sufficiency goals since the 2007/08 food crisis—including the 2014 National Rice Program and the new Food Sovereignty Strategy—domestic production meets only 40 percent of demand, with most rice imported. The industry is highly fragmented, spanning industrial mills, semi-industrial processors like the Senegalese Food Industry (SFA), and over 700 small-scale producers (TechnoServe 2023). Pilot programs using fortified rice kernels, led by WFP in partnership with ITA since 2020 in school feeding programs in Matam, are testing feasibility but concerns persist. These include risks of nutrient overconsumption if multiple micronutrients are added and possible trade-offs between fortification mandates and domestic rice self-sufficiency goals, especially given the relative ease of importing fortified rice.

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## **SYNTHESIS OF ENABLING ENVIRONMENT FACTORS IN SENEGAL**

Building on the earlier discussion of Senegal's institutional landscape and the challenges and opportunities linked to salt, flour, oil, and emerging rice and bouillon fortification, the priorities for LSFF can be aligned with the PEDAL framework presented in Figure 1. PEDAL's traffic-light color scheme highlights both strengths and weaknesses in Senegal's fortification environment, with the analysis pointing to key enablers as well as persistent barriers—most notably limited coordination, fragmented industry structures, and uneven financial commitment by the government.

**Figure 1:** PEDAL assessment for Senegal

		Public Sector	Private Sector	Civil Society
Political Will	Interests	Maximize financial ownership	Maximize profit margins	Minimize food costs
		Minimize backlash from important constituencies	Minimize organoleptic changes	Maximize nutrition
		Maximize citizen well-being	Maximize reputational branding	Minimize health risks
	Ideas	State vs. market	State vs. market	State vs. market
	Leverage	Policymaker cohesion	Industry associations	Coalition alignment
		Sanctions	Strike potential	Public awareness campaigns
Incentives		Lobbying power	Buying power	
Implementation Capacity	Institutional architecture	Modalities for coordinating multisectoral policies	Modalities for industry agglomeration	Modalities for coordinating across CSOs
		Horizontal and vertical regulatory coordination	Modalities for coordinating across value chain segments	Geographical reach of CSOs
		Forums for issue articulation with private sector & civil society	Forums for issue articulation with public sector & civil society	Forums for issue articulation with public & private sector
	Technical requisites	Data for tracking consumption	Capacity for internal compliance testing	Capacity to assist with M&E
		Laboratories for monitoring compliance	Capacity for processing fortified foods	Capacity to train private sector
		Trained and incentivized bureaucrats to monitor compliance	Capacity on micronutrient storage	Capacity to train public administration

**Source:** Author. Notes: ● = challenge for LSFF, ● = some progress but remaining constraints, ● = conducive to LSFF, and ● = factor was not identified in the case study. Lighter colors indicate that there are variations in the assessment depending on the food vehicle under consideration.

PEDAL shows that Senegal’s LSFF program has retained momentum thanks to broad agreement among government, industry, and civil society, along with more than 20 years of experience and strong coordination through CNDN and COSFAM. The Ministry of Commerce plays a central role in testing, surveillance, and enforcement, and while some businesses feel penalties are heavy-handed, these measures are generally effective. By presiding over COSFAM, the Ministry is exposed to academic evidence, civil society perspectives, and industry concerns, while civil society itself helps drive LSFF forward through technical support, citizen monitoring, and public awareness campaigns.

PEDAL also highlights several important challenges for Senegal’s LSFF program. Fortification efforts remain heavily reliant on donors and partner support, and recent cuts combined with macroeconomic instability have intensified issues such as high premix costs, limited reagents, and uneven attention across food vehicles. Policymakers worry that shifting partner interest toward new vehicles like rice could undermine progress on established programs such as salt iodization. COSFAM, tasked with coordinating LSFF, has experienced reduced visibility and direction, raising concerns that the platform could be co-opted by partner priorities. Bouillon fortification standards have become highly contentious, with health professionals generally opposed and others ambivalent or supportive. However, there may be opportunities in future to involve the bouillon industry in reducing sodium content and supporting public awareness campaigns about moderating sodium intake. In any case, it’s important to note that a recent study showed that only 15% of sodium consumed by Senegalese comes from bouillon (Adams, Vosti et al. 2024).

Other challenges relate to gaps in critical data and limited incentives for private industry. Senegal lacks a recent nationally representative micronutrient survey, and there is insufficient data on folic acid compliance in wheat flour, where millers struggle to dose accurately and domestic laboratories cannot test. While sanctions are effective in ensuring compliance, companies receive little support to manage costs, including rising premix prices or taxes. Bread price ceilings further constrain wheat millers, and the poorest households often rely on cheaper, unfortified products such as tapa-lapa bread, unrefined oil, and non-iodized salt. These dynamics mean that the populations most vulnerable to micronutrient deficiencies may have limited access to fortified foods, highlighting the need for targeted interventions to improve affordability and reach.

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## RECOMMENDATIONS

- Establish a regional procurement hub in the West African subregion for premixes, reagents, and testing kits to lower costs, ensure steady supply, and reduce vulnerability to price and exchange rate fluctuations.
- Centralize artisanal oil production by linking crushers to large refiners or clustering them around refineries, ensuring more consistent fortification and reducing the unrefined oil market. This will require government involvement and incentives so that artisanal producers comply with centralized arrangements.
- Strengthen laboratory capacity through regional decentralization or cross-country specialization, enhancing timely and accurate compliance monitoring while reducing duplication of costly infrastructure.
- Expand the use of geocoded digital monitoring platforms, which currently exist for salt, to wheat flour and oil, thereby allowing real-time tracking of compliance by inspection agents.

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## CONCLUSIONS

Senegal has long been a leader in nutrition and LSFF, with strong buy-in from the private sector and civil society, capable ministries, coordinating mechanisms, and a robust academic community supporting data and research. However, compliance remains uneven: wheat flour meets iron standards but struggles with folate, edible oil fortification is inconsistent due to smuggling and unrefined production, and salt iodization faces cost and quality challenges. The central weakness is growing donor dependence, especially amid recent macroeconomic pressures, making it critical to consolidate existing gains, strategically expand to new food vehicles, and strengthen financial and operational resilience for LSFF programs. With its strong foundation and commitment, Senegal is well-positioned to continue making meaningful progress in addressing micronutrient deficiencies.

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