PUBLIC POLICY NOTE

Eating quality, nutritional value and competitiveness of local rice: moving beyond the seed myth

Contribution to the file on the unsold local rice glut, the estimation of institutional demand and the exit from import dependence

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EXECUTIVE SUMMARY · *Résumé analytique*

The competitiveness gap of Senegalese local rice is too often blamed on the seed. This note shows that it is decided mainly **downstream**: the sensation of rice that "dries out" reflects a starch profile (high amylose), not a varietal defect, and local rice has a real advantage in holding its shape and absorbing sauce for ceebu jën.

On the nutritional side, the idea of "less sugar" is a shortcut: all white rices are close in carbohydrate content, but the Valley varieties, richer in amylose, have a **more moderate glycaemic index** — comparable to that of basmati (~50–58). The real advantage comes from processing (parboiling, moderate milling), not from genetics.

The decisive lever is a triptych of **processing / standardisation / guaranteed outlet**. Institutional public procurement could secure a floor outlet of about **22,000 t/year**. Finally, exiting import dependence requires broadening the productive base beyond the irrigated North (Anambé, rainfed rice farming in the South) and tackling the downstream bottleneck: under-used milling capacity, post-harvest losses, alignment of the full cost. **The glut is not a varietal fate, but a failure of the value chain and of outlet policy.**

1. The finding: a problem badly framed if it is reduced to the seed

The dominant narrative — "our seeds are no match for Thai rice" — shifts responsibility onto varietal breeding, whereas the competitiveness gap is decided mainly downstream. The perception of a local rice that is "*inedible*", that "dries out quickly" and "lacks starch", does not reflect an absence of starch, but a **different starch profile**. The Valley varieties (Sahel type, disseminated by SAED, supported by ITA/ISRA) have intermediate to high amylose content: firm, separate grains, but ones that retrograde quickly as they cool. Thai jasmine rice, low in amylose and rich in amylopectin, retains water and stays soft. This is a varietal characteristic, not a manufacturing defect.

2. Comparative sensory reading

2.1 Local rice (Valley) vs imported broken rice vs aromatic rice

- **Local rice:** neutral aroma, granular texture, **good structure and strong sauce absorption** — a real asset for ceebu jën, where a sticky texture is not sought.

- **Imported broken rice:** quick cooking, strong sauce uptake, in line with taste habits, but broken grain and often over-milled (nutritional impoverishment).
- **Aromatic rice (jasmine, basmati):** characteristic aroma (2-acetyl-1-pyrroline), light grain that elongates without sticking; excellent plain, but **less suited to sauce-based dishes**.

Most of the perceived deficit comes from the **post-harvest stage, not from genetics**: degree of milling, share of chalky grains and impurities, uneven grading, poorly controlled drying, absence of curing. A poorly milled local rice will look greyish, break unevenly and cook unevenly next to a well-sorted imported broken rice.

2.2 Methodological box — the physico-chemical basis

Why local rice "dries out": starch retrogradation

Cooking behaviour depends on the amylose/amylopectin ratio. High amylose = firm, separate grains, but rapid recrystallisation on cooling (the sensation of "dry" rice). High amylopectin = water retention, softness, slight stickiness.

Corrective levers: (a) selection of lines with adjustable amylose and of aromatic lines already developed by research; (b) **parboiling**, which reduces breakage and stabilises texture; (c) a quality standard (grading, moisture, broken-grain rate). The decisive lever is the quality chain, not the gene.

3. Nutritional value and glycaemic load: beyond the idea of "less sugar"

A widespread belief holds that Valley rice is "healthier" and contains "less sugar". The intuition is partly right, but the phrasing is a shortcut. No rice — local or imported — contains sugar strictly speaking: it contains **starch**, a complex carbohydrate. Weight for weight, all white rices are roughly equivalent in carbohydrate content. What really changes is the **speed at which that starch is converted into blood glucose**, measured by the **glycaemic index (GI)** *(Bolt Pharmacy, 2026; Prediabetes Centers, 2026)*.

Now, the Valley varieties (Sahel type), richer in amylose, release glucose more slowly and therefore show a more moderate GI than many ordinary white rices — which is what grounds the intuition of a rice that "raises blood sugar less" *(ua.Biologic, 2024)*. But the real nutritional advantage owes less to the variety than to the **processing**: a parboiled or lightly milled local rice retains more fibre, B-group vitamins and minerals, whereas imported broken rice, often over-polished and broken, loses much of it *(Prediabetes Centers, 2026)*. In short, a good whole or parboiled local rice is nutritionally more valuable and has a gentler GI; a heavily milled local rice, by contrast, has no advantage over an equivalent imported white rice. As much is decided on the plate as in the rice mill.

Comparison with basmati — a quantified benchmark

Basmati is one of the white rices with the lowest GI: about **50–58** on the glucose = 100 scale, against **70 and above** for many ordinary white rices, thanks to its high amylose content (~22–25%). It therefore sits broadly at the same level as, or slightly below, a good moderate-GI Valley rice *(Bolt Pharmacy, 2026; Fuzzy Logic, 2026; Glycemic Snap, 2026)*.

Three practical levers lower the GI further, regardless of the variety: (a) aged rice is richer in amylose; (b)

cooling and then reheating cooked rice forms resistant starch and reduces the glycaemic response by 10 to 20%; (c) combining rice with proteins, fats and fibre markedly flattens the blood-glucose curve *(Prediabetes Centers, 2026)*.

4. The real pool of value: processing, standardisation, outlets

National research already has high-performing lines, including aromatic ones. Local rice loses its battle not in the field but at the mill. Three levers, in order of cost/impact ratio:

- **Processing:** generalise parboiling and invest in grading and optical sorting at the level of rice mills and Valley processing units. Industrial interventions, not genetic ones.
- **Standardisation:** establish and enforce a national quality standard for local rice (maximum broken-grain rate, moisture, purity, grading), with labelling and an origin label.
- **Guaranteed outlet:** back the standard with institutional public procurement in order to create a contracted floor demand, stripping "quality" of its status as a pretext for refusal.

5. Quantified estimate of institutional demand

Order of magnitude of the captive market that public procurement could secure for local rice. **Illustrative figures to be consolidated with official sources** (see assumptions below).

Institutional segment	Headcount (persons)	Consumption/ person/year (kg)	Demand (t/year)	Locally capturable (t/year)
Defence and security forces	~45,000	90	4,050	3,240
Health facilities (patients + meals)	~30,000	55	1,650	1,320
School canteens (DCaS/WFP)	~1,200,000	12	14,400	11,520
Boarding schools & universities (CROUS)	~90,000	70	6,300	5,040
Administrations & various bodies	~20,000	60	1,200	960
TOTAL (rounded)	**—**	**—**	**≈ 27,600**	**≈ 22,080**

Reading: *on a gross institutional demand of about 27,600 t/year, a realistic capture rate of 80% would represent ≈ 22,000 t/year of floor outlet for local rice — a stable demand signal capable of justifying investment by rice mills in parboiling and sorting.*

Calculation assumptions (to be validated)

- Headcounts: indicative orders of magnitude (defence and security forces, health facilities, DCaS/WFP canteens, CROUS, administrations). To be replaced by the actual headcounts held by the supervising bodies.
- Consumption: adjusted by context (full vs partial meals), not aligned with the national average consumption (~70–90 kg/capita/year).

- Local capture rate used: 80%, leaving a margin for specifications not covered by local supply.

Method: Demand (t) = Headcount × consumption/person/year ÷ 1000; Capturable = Demand × 0.80.

6. Exiting import dependence: the potential of the North and of the other regions

6.1 The productive base of the North

The country's productive heartland is in the North. The **Senegal River Valley** (Delta, Dagana, Podor, Matam), developed and irrigated under SAED management, delivered a 2025 hot off-season campaign estimated at 420,000 tonnes of paddy, against about 343,000 tonnes in 2024, and the 2024-2025 campaign posted yields of 7 to 10 t/ha for a total production estimated at 492,626 tonnes *(Le Soleil, 2025a; Le Soleil, 2025b)* — levels judged comparable to those of the world's main producing regions *(World Bank, 2025)*. The most immediate lever is the extension of water control: the National Food Sovereignty Strategy provides for new schemes covering nearly 160,000 ha *(Republic of Senegal, 2024)*. The double campaign must nonetheless be handled with caution: rotation (rice then tomato or onion) better preserves soil fertility, which argues for reasoned rather than systematic intensification *(IPAR, 2024)*.

6.2 Mobilising the other basins

The North will not suffice on its own. The **Anambé basin** (Kolda), the second historic irrigated hub, remains under-exploited and deserves a hydraulic upgrade. Above all, **Casamance** and the rainfed rice-growing areas of the South hold considerable potential in upland and lowland rice, currently held back by the lack of valley development, weak mechanisation and residual insecurity. Structuring these areas (lowland development, adapted seed, opening up of remote areas) would complement the supply of the irrigated North with decentralised rainfed production, diversifying climate risk and anchoring rural populations *(World Bank, 2025)*.

6.3 The decisive bottleneck: the downstream segment of the value chain

The bottleneck is no longer production, but the **downstream segment and the economics of the product**. Rice remains the leading imported food product, with an annual bill of between 250 and 315 billion FCFA, while the industrial tool runs empty: the effective utilisation rate of rice mills hovers between 55 and 65%, and post-harvest and post-milling losses are estimated at between 15 and 20% *(NdarInfo, 2026)*. Ceasing to import means tackling three links simultaneously: **processing** (parboiling, optical sorting, drying, secure storage to smooth seasonality); **contract-based marketing** to eliminate distress sales and guarantee outlets — including through institutional public procurement; and finally the **alignment of the full cost** of Senegalese rice with that of Asian rice. Rice policy must be economic before it is agricultural, and systemic rather than sectoral *(NdarInfo, 2026)*: Senegal has won the battle of yields in the North; it has yet to win the battle of competitiveness and outlets.

7. Synthesis for public action

Redirect support away from the seed upstream — already relatively well served — towards a triptych of **processing / standardisation / guaranteed outlet**. Concretely: subsidise parboiling and sorting equipment rather than multiplying seed programmes; back the quality standard with public procurement to create a floor demand; highlight in communication the uses in which local rice is objectively superior (holding up in sauce, ceebu jën) and its real nutritional advantage (moderate GI, richness of the parboiled grain); and extend the productive base beyond the irrigated North towards the Anambé and the rainfed rice farming of the South. **The glut is not a varietal fate: it is a failure of the value chain and of outlet policy.**

References

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Note: synthesis as of July 2026. Production, stock and cost data evolve rapidly and should be updated at the time of use; the nutritional benchmarks (GI) are orders of magnitude that vary with preparation and individual response.