

RICE

Disease and Risk Cards

The risks to a Ghanaian rice business, and the opening inside each · Ashesi University · 2026

⚠ HOW TO READ THESE CARDS

Each card names a risk, rates its severity, explains what it is and whom it hits, and, in the spirit of this playbook, points to the business opening inside it, because every threat to the crop is a market for whoever can reduce it. The cards are the risk content of the Ghana Rice Agribusiness Playbook, gathered in one place. Figures in red are illustrative and need field validation.

A. PRODUCTION, SEED AND AGRONOMY

⚠ Saved, mixed and degenerated seed **Severity: HIGH**

What it is: Grain saved from the last harvest and replanted is a mix of types and carries disease from the previous crop. It gives an uneven stand and a mixed grain sample, which mills into broken, off-colour rice that fails the quality test and the shelf.

Evidence: The formal seed system supplies only a few hundred tonnes of certified rice seed a year, so most farmers replant saved grain (CSIR-Crops Research Institute, 2025).

Who it hits: Smallholders who save seed, and any miller or brand relying on their paddy for a clean, even sample.

How to manage it, and the opening: Buy certified seed of a single named variety matched to the ecology, and refresh it every few seasons. Opening: certified-seed multiplication and dealing of aromatic and drought-tolerant varieties.

⚠ Planting the wrong variety for the ecology or the buyer **Severity: MEDIUM**

What it is: An aromatic lowland variety on a dry upland slope will underyield or fail; a hardy upland type grown for the premium shelf will not carry the aroma the buyer pays for. The variety must match both field and market.

Evidence: Yields differ more than twofold between ecologies and regions, and aroma and grain quality differ sharply between varieties (Ministry of Food and Agriculture, 2024).

Who it hits: Farmers switching ecologies or entering a contract, and new entrants choosing seed by availability.

How to manage it, and the opening: Confirm the ecology and buyer before choosing seed. Opening: variety-and-seed advisory matched to ecology and market.

⚠ Poor water control and uneven fields **Severity: HIGH**

What it is: A field that is not levelled or banded holds water unevenly, which starves some plants, drowns others, invites weeds and parasites, and ripens the crop unevenly so the harvest is mixed.

Evidence: Irrigated schemes with even water yield more than twice the rain-fed average, and good practice including levelling lifts yield by about 28 percent (good agricultural practices study, forest zone, 2023).

Who it hits: Rain-fed lowland farmers above all, and any scheme where levelling and maintenance have lapsed.

How to manage it, and the opening: Level and bund fields, maintain channels, use controlled or alternate wetting and drying. Opening: land-levelling and water-management services, and scheme rehabilitation.

⚠ Late or out-of-step planting Severity: MEDIUM-HIGH

What it is: Planting after the best window, or out of step with neighbours, exposes the crop to end-of-season drought, heavier pest and bird pressure, and a rushed, wet harvest that damages grain quality.

Evidence: The calendar is tied to the rains in the rain-fed ecologies, and synchronised planting is a recognised defence against birds and pests (Ministry of Food and Agriculture Rice Production Guide, 2020).

Who it hits: Rain-fed farmers, and schemes without a coordinated cropping calendar.

How to manage it, and the opening: Follow the ecology calendar, prepare land early, coordinate planting. Opening: calendar advice and mechanised land preparation.

B. DISEASE, PEST AND WEED

⚠ Rice blast Severity: HIGH

What it is: A fungus that attacks leaves, necks and panicles, cutting yield by 10 to 30 percent in a normal year and up to half in a severe one. It breaks down variety resistance over time.

Evidence: About 78 percent of farmers surveyed in the Western North had seen blast in their fields (seed-borne fungi study, 2023; blast management review, 2020).

Who it hits: All rice ecologies, worst where nitrogen is high and humidity lingers.

How to manage it, and the opening: Plant resistant varieties, treat seed, balance nitrogen, scout early. Opening: clean resistant seed, approved fungicides with advice, and scouting and forecasting services.

⚠ Rice yellow mottle virus Severity: HIGH

What it is: An Africa-only virus spread by beetles and by handling, taking a tenth to the whole of a crop depending on how early it strikes. There is no chemical cure; only a resistant variety protects the plant.

Evidence: Found in nine of Ghana's regions; resistant material exists in the research institutes but is not yet sold as seed (rice yellow mottle virus study, Ghana, 2023).

Who it hits: Lowland and irrigated schemes where cropping is continuous.

How to manage it, and the opening: Use resistant varieties, remove infected plants early, control beetle vectors. Opening: multiplying and selling the resistant seed research has already produced.

⚠ African rice gall midge and stem borers Severity: MEDIUM-HIGH

What it is: The gall midge turns tillers into onion-leaf galls that bear no grain and can take up to 60 percent of a crop; stem borers hollow the stem and kill the panicle.

Evidence: Gall midge up to 60 percent loss, on about 30 percent of farms; stem borers on about 19 percent (insect pest management review, 2025).

Who it hits: Rain-fed lowlands and continuously cropped schemes.

How to manage it, and the opening: Plant resistant varieties, keep a synchronised calendar, use integrated pest management. Opening: resistant seed, safe-input supply with training, pest-scouting advice.

⚠️ **Birds** **Severity: MEDIUM-HIGH**

What it is: Flocks of weavers and queleas strip grain at the milk and ripening stages, one of the most visible and demoralising losses, near water bodies especially.

Evidence: At Kpong, bird raids cost each affected farmer about GH¢1,000 to GH¢1,500 plus roughly GH¢20 a day in scaring labour (bird-damage study, Kpong, 2023).

Who it hits: Fields near dams, rivers and irrigation schemes.

How to manage it, and the opening: Use netting, reflective and sound deterrents, plant in step with neighbours. Opening: affordable bird-control products and shared scaring services.

⚠️ **Parasitic and weedy weeds** **Severity: MEDIUM-HIGH**

What it is: Rice vampireweed drains the plant from the roots and can take a quarter to three quarters of a rain-fed crop; Striga does the same in the uplands; weedy red rice sheds discoloured grain that lowers the grade.

Evidence: Rice vampireweed 24 to 73 percent loss, affecting over 140,000 rice-farming households across at least 35 countries; Striga 35 to 80 percent (parasitic weed study, 2016).

Who it hits: Rain-fed lowlands (vampireweed) and uplands (Striga), on poor, uneven fields.

How to manage it, and the opening: Weed early, level fields, plant tolerant varieties and clean seed, use approved herbicides with advice. Opening: land-levelling and weeding services, and clean tolerant seed.

C. CLIMATE AND POST-HARVEST

⚠️ **Drought** **Severity: VERY HIGH**

What it is: A failed or late rainy season can cut the rain-fed crop by a quarter or more and destroy the incomes of farmers who depend entirely on rain, which is most of them.

Evidence: The 2024 drought cut northern rice area by more than a sixth and yields by about a quarter, within cereal-sector losses near US\$1.3 billion (United States Department of Agriculture, 2024).

Who it hits: Rain-fed lowland and upland farmers, concentrated in the north.

How to manage it, and the opening: Plant drought-tolerant varieties, develop irrigation and water control, use crop insurance. Opening: drought-tolerant seed, irrigation services, index insurance.

⚠️ **Flood, including Bagre dam spillage** **Severity: HIGH**

What it is: Flash floods and the annual opening of the Bagre dam in Burkina Faso send water down the White Volta and drown standing rice, sometimes destroying a whole field just before harvest.

Evidence: Bagre spillage regularly inundates rice fields across the Upper East; flooded fields can lose the entire crop (climate and flood study, Northern Ghana, 2021).

Who it hits: Rice farms along the White Volta and in flood-prone valley bottoms.

How to manage it, and the opening: Plant flood-tolerant varieties that survive one to two weeks submerged, improve drainage and bunding, heed early warnings. Opening: flood-tolerant seed, drainage services, early-warning and insurance.

Post-harvest and milling loss **Severity: HIGH**

What it is: Poor threshing, slow drying and bad storage lose roughly 5 to 19 percent of the grain, and also crack and discolour it, so a poor mill then yields mostly broken rice. It is a loss of quantity and quality at once.

Evidence: Harvest and post-harvest work is about 21 percent of production cost; a poor mill gives about 47 percent whole grains against 67 percent from a good one (Appiah et al., 2011; Amponsah et al., 2018).

Who it hits: Every producer, but worst for smallholders without threshers, dryers or a good mill.

How to manage it, and the opening: Thresh promptly, dry on raised beds, store sealed, mill on modern equipment. Opening: threshers, dryers, sealed storage, and destoning, grading mills.

D. MARKET, PRICE AND VALUE CHAIN

Growing paddy with no buyer for it **Severity: VERY HIGH**

What it is: Producing more paddy without a mill and a market to absorb it does not raise incomes; it creates unsold stock. The 2026 glut left about 1 million tonnes of paddy unsold and some farmers unable to recover costs.

Evidence: The Chamber of Agribusiness declared a national agricultural emergency over roughly GH¢5 billion of unsold rice and grain in 2026 (Chamber of Agribusiness, 2026).

Who it hits: Farmers who expand on the self-sufficiency promise without a secured off-taker, and their lenders.

How to manage it, and the opening: Tie any expansion to a confirmed off-take before planting. Opening: milling, branding and aggregation that pull paddy through.

Competing on price against imports **Severity: HIGH**

What it is: Imported rice prices swing with the cedi and can fall sharply. A business that competes by being the cheapest sack is always one currency move from being undercut, and can never fund the quality that wins the buyer.

Evidence: When the cedi strengthened in 2025, imported-rice bag prices fell steeply, squeezing unbranded local rice (News Ghana, 2025).

Who it hits: Unbranded local millers and traders selling on price alone.

How to manage it, and the opening: Compete on quality and brand, not price. Opening: a clean, graded, aromatic, packaged local brand that collects the premium buyers will pay.

Relying on the farm-gate margin **Severity: HIGH**

What it is: Growing and selling raw paddy earns a thin margin that vanishes when the price falls. In the 2026 glut, distressed paddy sold below the cost of growing it.

Evidence: Rain-fed rice returns only about GH¢576 a hectare at average yields, and glut-year paddy sold as low as GH¢150 to GH¢300 a 100 kilogram bag (Agricultural Finance Review, 2021; Chamber of Agribusiness, 2026).

Who it hits: Farmers and investors whose plan ends at selling paddy.

How to manage it, and the opening: Build around a secured buyer or, better, own the milling and branding. Opening: treat paddy as the raw-material stage and capture value downstream.

Wholesaler power and farmer price-taking **Severity: HIGH**

What it is: Wholesalers in the big cities set the price and capture much of the margin, while farmers, unable to store or wait, take whatever is offered at harvest.

Evidence: The farm-gate-to-wholesale gap is not explained by costs alone, and a large offtaker has made producers price takers (DFID MADE, 2015; Development Bank Ghana, 2023).

Who it hits: Smallholders without storage or a fair buyer, and any brand relying on open-market paddy.

How to manage it, and the opening: Aggregate fairly, use warehouse receipts to store and borrow, integrate supply through outgrowers. Opening: a financed aggregation business that gives a fair price.

The milling and grading gap **Severity: HIGH**

What it is: Most mills break too much grain and cannot destone, grade or sort, so even good paddy becomes low-grade rice that fails at the shelf. It is the single biggest reason local rice loses to imports.

Evidence: Only about 12 percent of local mills meet the Ghana Standards Authority grade, and about 83 percent of local rice is sold loose and unbranded (value-chain surveys, 2024 to 2025).

Who it hits: Every producer and brand relying on local milling, and every farmer whose paddy is discounted for it.

How to manage it, and the opening: Invest in rubber-roller milling with destoning, grading and sorting, paired with parboiling and branding. Opening: the highest-return investment in the crop.

Seasonality and unreliable local supply **Severity: MEDIUM-HIGH**

What it is: Local rice floods the market at harvest and dries up later, so buyers cannot count on a steady local supply and fall back on imports, while farmers sell cheap into the glut.

Evidence: The 2026 glut left about 1 million tonnes of paddy unsold at harvest even as imports continued (Chamber of Agribusiness, 2026).

Who it hits: Brands and institutions needing year-round supply, and farmers selling into the glut.

How to manage it, and the opening: Use warehousing and the warehouse-receipt system to store and release steadily, and contract outgrowers. Opening: storage, aggregation and receipt-financed steady supply.

Using dated or illustrative cost figures as if current **Severity: MEDIUM-HIGH**

What it is: The cedi figures in the playbook are dated and illustrative. Costs and prices in 2026 are far higher, so any decision made on the old numbers without re-pricing will be wrong.

Evidence: Ghana's best farm-level cost studies are from 2021, before several years of high inflation and exchange-rate movement (Agricultural Finance Review, 2021).

Who it hits: Anyone building a budget or loan application from the playbook without field data.

How to manage it, and the opening: Re-price every cost and price with primary 2026 field data using the Cost and Returns Model. Opening: field-data services and validated cost benchmarking.

SEVERITY REGISTER

■ Table 1: Rice risks ranked by severity

Severity	Risks at this level
VERY HIGH	Drought; Growing paddy with no buyer for it
HIGH	Saved, mixed and degenerated seed; Poor water control and uneven fields; Rice blast; Rice yellow mottle virus; Flood, including Bagre dam spillage; Post-harvest and milling loss; Competing on price against imports; Relying on the farm-gate margin; Wholesaler power and farmer price-taking; The milling and grading gap
MEDIUM-HIGH	Late or out-of-step planting; African rice gall midge and stem borers; Birds; Parasitic and weedy weeds; Seasonality and unreliable local supply; Using dated or illustrative cost figures as if current
MEDIUM	Planting the wrong variety for the ecology or the buyer

Severity is a directional judgement from the evidence and should be revisited with field data.

Source: Ghana Rice Playbook synthesis, 2026.