

# Global Agricultural Trade Toolkit

1986–2024: User Manual • Powered by FAOSTAT Detailed Trade Matrix • Published by TW Policy Group

## 1. What you can do with this dashboard

The dashboard gives a dynamic picture of global agricultural trade from 1986 to 2024, covering 178 reporter countries, 558 products, and bilateral flows worth over \$66.3 trillion in cumulative value. It helps you compare countries, track trade corridors, assess partner and product concentration, and turn indicators into trade-policy options.

- See the latest year's trade values and how they changed versus last year (YoY), the last 3 years (3-year CAGR), and the last 5 years (5-year CAGR).
- Understand structure: top reporter, top partner, Top-3 share, and concentration (CR5 for partners, PC5 for products).
- Track **trade balance**: exports minus imports at reporter level, with net positions tracked over time.
- Scan **emerging export products**: CAGR-ranked growth leaders across 3Y / 5Y / 10Y horizons.
- Identify **untapped opportunities**: products a reporter exports globally but does not yet ship to a selected partner.
- Filter by **Reporter**, **Partner**, **Product / Item**, **Year**, **Trade Flow**, and **Horizon** to tailor the view.
- Use *Country Summary* for key metrics and *trade signal cards* for decision-ready indicators.
- Review **Structural Notes** for full methodology and formula transparency.

**Tip:** The dashboard is **selection-aware**: labels, shares, rankings, and narrative switch automatically with your slicers (reporter, partner, product, year, flow, horizon).

## 2. Quick start

- Start on the **Global view** to see the world trade baseline across all reporters and partners.
- (Optional) Select filters: a *Reporter*, a *Partner*, a *Product*, a *Year*, a *Trade Flow* (export/import), or a *Horizon* (3Y/5Y/10Y).
- Read the **Country Summary** card. It reports total trade, export/import values, trade balance (surplus or deficit), top partners, top products, and concentration metrics.
- Review **Top Trade Partners** bar chart: current-year values with YoY change arrows.
- Scan **Emerging Export Products**: CAGR-ranked growth leaders with world CAGR comparison.
- Check **Competitive (Surplus) Products** and **Untapped Opportunities** when a partner is selected.
- Open **Structural Notes** for full formula and methodology transparency.

**Tip:** Start broad (Global), then add one filter at a time to keep the story clear. The chips row under the header confirms all active selections.

## 3. Layout tour — how the dashboard is organised

- **Header bar** — title, data source (FAOSTAT Detailed Trade Matrix), and branding.
- **Slicers (left panel)** — Year, Reporter Countries, Item Name, Partner Countries, Horizon. Use these to filter every view simultaneously.
- **Country Summary** — key metrics: ExportValue, ImportValue, TotalTrade, TradeBalance, Status (Surplus/Deficit), ShareOfWorldExport, ShareOfWorldImport, Export Change (Min–Max Years).

- **Top Trade Partners (bar chart)** — top-5 partners by current trade value with YoY percentage change indicators.
- **Top Traded Products** — top-5 products by trade value with share of total trade.
- **Emerging Export Products** — CAGR-ranked growth leaders across selectable horizons (3Y/5Y/10Y) with world CAGR comparison.
- **Competitive (Surplus) Products** — products where ExportValue exceeds ImportValue or is close to parity.
- **Untapped Opportunities** — products the reporter exports globally but does not yet ship to the selected partner (requires partner selection).
- **Structural Notes (accordion)** — full definitions, formulas, interpretation rules, and formatting conventions.

## 4. The slicers and what they do

### Reporter

Select a single country for a national trade profile. The summary reports the country's total export and import values, trade balance, share of world exports and imports, top partners, and top products. Select multiple reporters to compare.

### Partner

Select one or more partner countries. When a partner is selected, the dashboard adds **Untapped Opportunities** — products the reporter exports to *any* partner globally but does not yet ship to the selected partner. Top Trade Partners and concentration metrics also update to reflect the reporter–partner corridor.

### Product / Item

Filter by one or more FAOSTAT agricultural items (558 products). When a single product is selected, its share of total trade is shown. Use this to assess commodity-level dependency and specialization.

### Year

The dataset covers 1986–2024 (38 years). Select a year range or individual years. The latest 1–2 years should be treated as provisional until FAO reconciles all country submissions.

### Trade Flow

Filter by **Export Value** or **Import Value**. This enables directional analysis — separate export competitiveness from import dependency for cleaner trade-strategy diagnostics.

### Horizon

Select **3Y**, **5Y**, or **10Y** for the Emerging Export Products CAGR calculation. Shorter horizons surface recent acceleration; longer horizons reveal structural shifts.

*Tip: All slicers support multi-select. Use Ctrl/Cmd-click or the checkboxes to select more than one. The summary, charts, and indicators reflect the combined selection.*

## 5. Country Summary — how to read it

- **ExportValue / ImportValue:** total export and import values in USD for the selected scope.
- **TotalTrade:** ExportValue + ImportValue.
- **TradeBalance:** ExportValue – ImportValue. Positive = surplus; negative = deficit.
- **Status:** 'Surplus' if TradeBalance >= 0, else 'Deficit'.

- **ShareOfWorldExport / ShareOfWorldImport:** reporter's exports (or imports) divided by world total, computed via REMOVEFILTERS([Reporter Countries]).
- **Export Change (Min–Max Years):** (ExportEnd – ExportStart) / ExportStart for the selected year range.
- **Top partners and products:** ranked by trade value within the selected scope.

*Tip: If the latest year has zero or missing values for your selection, the summary hides details that could mislead.*

## 6. Trade signal indicators

### Top Trade Partners (bar chart)

- **Current value:**  $\text{Sigma}(\text{Value}) \times 1000$  at Year = MaxYear (Export+Import).
- **Prior value:**  $\text{Sigma}(\text{Value}) \times 1000$  at Year = MaxYear – 1.
- **YoY% (partner):** (Current – Prior) / Prior, shown as up/down arrows.
- Top 5 partners by Current; bar width proportional to Current / max(Current[top5]).

### Top Traded Products

- Filter: Unit='1000 USD', Element in {Export Value, Import Value}, Years in slicer range, Reporter and Partner from slicers.
- TotalTrade =  $\text{Sigma}(\text{Value})$  in above context (item filter removed).
- TOPN(5) over Item Name by TradeVal =  $\text{Sigma}(\text{Value})$ .
- Share(item) = TradeVal / TotalTrade.
- If a single product is selected, its share =  $\text{Sigma}(\text{Value for Item}) / \text{TotalTrade}$ .

### Emerging Export Products (CAGR)

- **StartYear:** MaxYear – N (where N = 3, 5, or 10 from the Horizon slicer).
- **StartVal:**  $\text{Sigma}(\text{Value}) \times 1000$  at StartYear (Element='Export Value').
- **EndVal:**  $\text{Sigma}(\text{Value}) \times 1000$  at MaxYear.
- **CAGR:**  $(\text{EndVal} / \text{StartVal})^{(1/N)} - 1$ .
- **WorldCAGR:** computed identically with REMOVEFILTERS(Reporter).
- Display Top 15 by CAGR; overflow listed via '+N more'.

### Competitive (Surplus) Products

- ExportValue(item) > 0 at MaxYear.
- Keep if ExportValue >= ImportValue OR (ImportValue – ExportValue)/ImportValue <= 0.20.
- Rank by ExportValue (USD); show Top 15 + overflow tooltip.

### Untapped Opportunities

- **ReporterGlobalExports** = {items exported by Reporter to any partner at MaxYear}.
- **PartnerImportsAll** = {items imported by Partner at MaxYear}.
- **Reporter→Partner** = {items Reporter already exports to Partner}.
- **Untapped** = EXCEPT( INTERSECT(ReporterGlobalExports, PartnerImportsAll), Reporter→Partner ).
- Display Top 30 alphabetically + '+N more'. Requires a partner to be selected.

*Note: Indicators are hidden where eligibility rules are not met (e.g., fewer than 3 reporting years or fewer than 5 active partners). All values in 1000 USD source units, displayed x 1000.*

## 7. Common analysis recipes

- **Country trade profile (one-page):** select a reporter → read Country Summary → review Top Partners and Top Products → check trade balance status.
- **Bilateral corridor analysis:** select a reporter + a partner → read bilateral trade values → review Untapped Opportunities → assess Competitive Products.
- **Export diversification scan:** select a reporter → review Top Products (PC5) → check Emerging Export Products across 3Y/5Y/10Y → flag mono-commodity risk.
- **Partner concentration check:** select a reporter → review Top Trade Partners (CR5) → flag single-market dependency exceeding 40% share.
- **Growth-opportunity mapping:** select a reporter + a partner + Horizon 5Y → Emerging Exports for growth leaders → Untapped for new market entry.
- **Regional benchmarking:** select multiple reporters in the same region → compare trade balances, concentration, and product composition side-by-side.
- **Negotiation brief preparation:** select reporter + partner → capture bilateral summary + Competitive Products + Untapped list → export for delegation briefing.
- **Donor-alignment check:** match trade signals to WTO, AfCFTA, and RTA negotiation agendas before drafting proposals.

## 8. FAQs

### Q: Nothing shows in the chips.

A: That's expected on the default global view. Select at least one filter (reporter, partner, product, year, flow, or horizon).

### Q: Trade values seem low.

A: FAOSTAT source unit is 1000 USD. The dashboard multiplies by 1000 for display. Verify the unit label and compare with FAOSTAT directly.

### Q: Why do some countries have missing years?

A: FAOSTAT reflects country submissions and validation cycles. Gaps are preserved rather than imputed to avoid false precision.

### Q: How do I reset to the default global view?

A: Clear all slicers (use the eraser icon or Ctrl/Cmd-click on selected items).

### Q: Untapped Opportunities shows nothing.

A: Untapped requires a partner to be selected. It computes items the reporter exports globally but not yet to that partner.

### Q: Can I compare multiple reporters at once?

A: Yes. Select several in the Reporter slicer; the charts will reflect the combined selection.

### Q: Numbers differ from UN Comtrade.

A: FAOSTAT and Comtrade use different reconciliation methods and product classifications. Ensure matching scope (year, unit, flow direction).

### Q: CAGR shows 'n/a' or very large values.

A: CAGR requires non-zero StartVal. Very small bases can produce extreme rates. Check the absolute values before acting on the growth rate.

### Q: I need exact numbers.

A: Hover charts for exact values. The Country Summary also shows precise figures.

## 9. Good practice for responsible use

- Use trade signals to prioritise questions and frame negotiations; do not replace national trade statistics or formal impact analysis.
- When concentration (CR5/PC5) is high and trade balance is deteriorating, prioritise diversification strategy before major policy commitments.
- Read **Structural Notes** in the dashboard to understand formulas, eligibility thresholds, and formatting conventions.
- For presentations, pair the Country Summary with the Top Partners bar chart and Emerging Exports for a clear story.
- Redistribution is permitted with clear attribution to **FAOSTAT Detailed Trade Matrix** (© FAO) and © **TW Policy Group** for the analysis and visualization. Please consult FAO's Data Terms of Use and attribution guidance on the official FAO website.
- **Caveat:** Trade data reflect country submissions and may differ from UN Comtrade or national trade accounts. Always pair with domestic trade statistics for decisions that carry fiscal weight.
- **No endorsement.** FAO does not endorse any findings or interpretations. Any errors or interpretations are the sole responsibility of TW Policy Group.

## 10. Structural Notes — Methods & Considerations

### Acronyms & Symbols

- **YoY:** Year-over-Year growth.
- **CAGR:** Compound Annual Growth Rate.
- **CR5:** Top-5 partners' share of total (partner concentration).
- **PC5:** Top-5 products' share of total (product concentration).
- **TM:** FAOSTAT Detailed Trade Matrix.
- **TOPN(k):** Top-k ranking function used for partners and products.
- **REMOVEFILTERS:** DAX function that computes world totals by lifting the reporter filter.
- **K / M / B / T:** Magnitude abbreviations (thousands / millions / billions / trillions).
- **ppt:** percentage points (used for share changes over time).

### Core computation rules

- **Selection scope:** All shares and signals are computed over the current on-screen selection (Reporter, Partner, Item, Year, Trade Flow, Horizon).
- **Source unit:** 1000 USD. Display values multiply by 1000.
- **Filter context:** All totals evaluated in the current filter context (Year, Reporter, Partner, Item).
- **World computations:** Use REMOVEFILTERS([Reporter Countries]) where noted.
- **ExportValue:**  $\text{Sigma}(\text{Value}) \times 1000$  where Element = 'Export Value'.
- **ImportValue:**  $\text{Sigma}(\text{Value}) \times 1000$  where Element = 'Import Value'.
- **TotalTrade:** ExportValue + ImportValue.
- **TradeBalance:** ExportValue – ImportValue.
- **Status:** 'Surplus' if Balance  $\geq 0$ , else 'Deficit'.
- **ShareOfWorldExport:** ExportValue / WorldExportTotal.
- **Export Change:** (ExportEnd – ExportStart) / ExportStart.
- **CAGR:**  $(V_{\text{end}}/V_{\text{start}})^{(1/n)} - 1$  with guards against zero bases.
- **Eligibility:** Indicators hidden where reporter has fewer than 3 reporting years or fewer than 5 active partners.
- **Formatting:** Magnitudes less than 1K shown as-is, then K/M/B/T abbreviations; otherwise #,##0 in USD.

- **Zero/blank guards:** Metrics show 'n/a' when inputs are blank; growth rates avoid divide-by-zero.

### Scope & limitations

The FAOSTAT Detailed Trade Matrix harmonises country submissions for bilateral agricultural trade. Coverage spans 178 reporters, 558 products, and 38 years (1986–2024). Where reporter and partner values diverge, the dashboard preserves both perspectives so users can see reporting asymmetries. This toolkit supports **decision context**, not definitive trade statistics — pair it with national customs data, UN Comtrade, and qualitative market intelligence for final policy design.

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