



Famine Early Warning Systems Network

Markets and Trade

Concepts and definitions

September, 2025

Session overview

- Key concepts
 - Market components
 - Food balance sheets
 - Prices
- Structure-Conduct-Performance (S-C-P)

Session Goal

- Introduce FEWS NET technical staff to key concepts for markets and trade analysis to ensure a common vocabulary and understanding of basic definitions.
 - Some of this may be review to you – but it is helpful to ensure that we all are starting from the same foundational understanding.

Key concepts

Role of Food System in Early Warning



- Systems framework allows us to think through and identify:
 - **Shocks** that do or will likely occur at a **node in the system** or to the **system as a whole**
 - How those shocks are likely to circulate through the entire supply-distribution **system**
- Focus on analyzing direct and indirect effects of a shock to the system and the implications for food prices.
- The general framework can also be used to develop policy prescriptions (not FEWS NET's direct mandate).

Markets and food security



Markets are affected by shocks

- Poor/erratic rainfall ▼ production and supply food ▲ prices
- Elevated fuel prices ▲ transport and processing costs ▼ trader margins and incentives



Markets are part of the response

- Supply moves from surplus to deficit areas based on price signals
- Governments buy and sell stocks to stabilize prices



Markets are affected by the response

- Influx of food assistance ▼ prices, farmer and trader incomes
- Producer price floors ▲ cost for traders and ultimately food prices for consumers

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A **market** is where buyers and sellers come together to trade. Typically, they refer to physical locations.

Commodities (e.g., crops and food), livestock, and labor can be exchanged through markets.

FEWS NET, 2009

Key concepts



Market actors

All the buyers and sellers of a good or service who influence its price



Supply

Willingness and ability of sellers or suppliers to make available different possible quantities of a good at all relevant prices



Demand

Choice of specific goods and services that “best” satisfy wants/needs within the limits imposed by income (purchasing power).

- Individual (or household) demand is the demand of a single consumer (or household)
- Market demand is the sum of all the individual demands

Key concepts



Trade

Transfer of ownership of a good or service from one person or entity to another in exchange for something (monetary or otherwise) from the buyer



International trade

Exchange of capital, goods, and services across international borders or territories.



Formal and informal trade

Formal: inspected, taxed, and reported in official government statistics.

Informal: typically occurs outside of the formal trade system. Often undocumented, unlicensed, and unregistered

Market components- Supply

- Production estimates \neq Market supply
- National food supply equals food availability and is generally captured in National Food Balance Sheets (NFBS). Production estimates are a central part of this effort, but trade, stock levels, and losses are also relevant to understanding total supply levels.
- Local food availability is often determined by market supply rather than local production. Markets may be provisioned by nearby, distant, or even cross-border sources.
- Market supply refers to the amount of a commodity being **offered in the market**. It is different than total supply as it only includes what is being offered through markets, excluding the portion of food retained by households for their own consumption.

Factors affecting Supply

Element	Examples	Impact on Supply
Prices and expectations	▲ Prices	▲
	▲ Price expectations	
Input prices	▲ Labor cost	▼
Macroeconomic factors	Taxes and subsidies	
	Subsidy for fertilizer	▲
	Export Tariffs	▼
Technology	Technology improves	▲
	Technology is ruined (conflict)	▼

Market components- Demand

- **Market demand** refers to the amount of a particular good that consumers and other buyers want to purchase at a given price.
 - Households that rely on own production, food aid, or gifts are not counted in market demand, as they do not participate in food purchases. The poorest households often fall into this category due to limited purchasing power.
- **Effective demand:** the desire to buy, together with the ability to pay for a good or service.
- **Derived demand:** the demand for a commodity used as an input in other production activities (e.g., maize for poultry feed or breweries). It is separate from household demand but can significantly impact total market demand.

Factors affecting Demand

Element	Examples	Impact on Demand
Own price	▲ Prices	▼
Consumer preference	▲ Preference	▲
Income	▲ Income	▲
	<i>Demand of inferior goods</i>	▼
Price of other goods	▲ Prices of complements	▼
	▲ Prices of substitutes	▲
Macro factors	▲ Population	▲
	▲ Marketing infrastructure	▲
	Public policies Ex. Government sells below market price	▲

Commodity balances

- Commodity balance sheets typically include detailed information on production, supply (adjusted for losses and seed use), opening and closing stocks, estimated human consumption requirements, and self-sufficiency levels—either net or gross, based on the difference between supply and requirements.
- Commodity balances are prepared annually or semi-annually according to the marketing year and production patterns in each country.
 - Produced at the regional, national, and/or sub-national levels
 - Focus on official information and production estimates for specific commodities
 - Information expressed in volumes (MT)
 - Market and Trade analysis on staple commodities

Commodity balances

Annex 1. Central America Maize Supply Projections for MY 2025/26

Country	Item	2024/25	5-Year Average (2020/21-2024/25)	2025/26 Outlook	% change over one year	% change over 5-year average	Change one year	Change 5-year average
El Salvador	Harvest	798,040	806,784	798,040	0%	-1%	►	►
El Salvador	Demand	509,268	513,621	524,546	3%	2%	►	►
El Salvador	Net Supply	288,772	293,163	273,494	-5%	-7%	▼	▼
El Salvador	Self sufficiency	157%	157%	152%	-3%	-3%	►	►
Guatemala	Harvest	1,439,393	1,470,479	1,440,278	0%	-2%	►	►
Guatemala	Demand	1,921,595	1,868,598	1,946,313	1%	4%	►	►
Guatemala	Net Supply	-482,202	-398,120	-506,034	-5%	-27%	►	►
Guatemala	Self sufficiency	75%	79%	74%	-1%	-6%	►	►
Honduras	Harvest	601,940	658,273	601,940	0%	-9%	►	►
Honduras	Demand	829,293	803,254	841,425	1%	5%	►	►
Honduras	Net Supply	-227,353	-144,981	-239,485	-5%	-65%	►	►
Honduras	Self sufficiency	73%	82%	72%	-1%	-13%	►	►
Mexico	Harvest	20,010,000	22,402,798	21,315,000	7%	-5%	►	►
Mexico	Demand	15,250,500	14,955,579	15,403,005	1%	3%	►	►
Mexico	Net Supply	4,759,500	7,447,219	5,911,995	24%	-21%	►	►
Mexico	Self sufficiency	131%	150%	138%	5%	-8%	►	►
Nicaragua	Harvest	353,057	364,720	353,057	0%	-3%	►	►
Nicaragua	Demand	440,752	426,701	432,369	-2%	1%	►	►
Nicaragua	Net Supply	-87,696	-61,981	-79,312	10%	-28%	►	►
Nicaragua	Self sufficiency	80%	86%	82%	2%	-5%	►	►
Regional Total	Harvest	3,192,429	3,300,255	3,193,314	0%	-3%	►	►
Regional Total	Demand	3,700,908	3,612,174	3,744,652	1%	4%	►	►
Regional Total	Net Supply	-508,479	-311,919	-551,338	-8%	-77%	►	►
Regional Total	Self sufficiency	86%	91%	85%	-1.1%	-7%	►	►

- Notes:
1. Data for the 2025/26 marketing year are FEWS NET estimates as of July 2025 and could be revised.
 2. *Production data for Guatemala was revised and adjusted to reflect white maize only considering the 90 percent share of this variety estimated by [MAGA](#). Harvest data was adjusted using [USDA GAIN](#) reports.
 3. "Harvest," "Demand" and "Net Supply" estimates are expressed in Metric Tons (MT).
 4. ► denotes less than or equal to five percent change; ▲ denotes greater than five percent increase; ▼ denotes greater than five percent decrease.
 5. "Maize" includes only white maize in this report. "Average" includes data from 2020/21 to 2024/25.
 6. FEWS NET consumption, production, and trade estimates are based on convergence of evidence using data from the Statistics Division of the Food and Agriculture Organization FAOSTAT, the Economic Commission for Latin America and the Caribbean (ECLAC), Ministry of Agriculture of Guatemala

Annex 2. Bilan alimentaire du Riz au niveau sous-national (2025/2026)

Département	Élément	2024/25	Moyenne quinquennale (2020/21 - 2024/25)	2025/26	2025/26 changement par rapport à l'année précédente	2025/26 changement par rapport à la moyenne quinquennale	Changement par rapport à l'année précédente	Changement par rapport à la moyenne quinquennale
Artibonite	Production	93,536	106,178	79,698	-15%	-12%	▼	▼
Artibonite	Besoins alimentaire	40,598	40,177	41,118	1%	1%	►	►
Artibonite	Autosuffisance (%)	230%	265%	194%	-16%	-13%	►	▼
Centre	Production	461	598	560	22%	-23%	▲	►
Centre	Besoins alimentaire	39,601	39,190	40,108	1%	1%	►	►
Centre	Autosuffisance (%)	1%	2%	1%	20%	-24%	▲	▼
Grand'Anse	Production	103	129	100	-3%	-20%	►	▼
Grand'Anse	Besoins alimentaire	25,478	25,213	25,804	1%	1%	►	►
Grand'Anse	Autosuffisance (%)	0%	1%	0%	-4%	-21%	►	▼
Nippes	Production	2,935	3,196	2,853	-3%	-8%	►	▼
Nippes	Besoins alimentaire	18,610	18,417	18,848	1%	1%	►	►
Nippes	Autosuffisance (%)	16%	17%	15%	-4%	-9%	►	▼
Nord	Production	2,299	2,697	2,235	-3%	-15%	►	▼
Nord	Besoins alimentaire	58,045	57,443	58,788	1%	1%	►	►
Nord	Autosuffisance (%)	4%	5%	4%	-4%	-16%	►	▼
Nord Est	Production	2,579	2,939	2,758	7%	-12%	▲	▼
Nord Est	Besoins alimentaire	42,149	41,712	42,688	1%	1%	►	►
Nord Est	Autosuffisance (%)	6%	7%	6%	6%	-13%	▲	▼
Nord Ouest	Production	0	0	0	NA	NA	►	►
Nord Ouest	Besoins alimentaire	21,434	21,212	21,709	1%	1%	►	►
Nord Ouest	Autosuffisance (%)	0%	0%	0%	NA	NA	►	►
Ouest	Production	1,063	1,167	1,033	-3%	-9%	►	▼
Ouest	Besoins alimentaire	219,108	216,835	221,912	1%	1%	►	►
Ouest	Autosuffisance (%)	0%	1%	0%	-4%	-10%	►	▼
Sud Est	Production	27	32	27	-3%	-14%	►	▼
Sud Est	Besoins alimentaire	93,935	92,961	95,137	1%	1%	►	►
Sud Est	Besoins alimentaire	0%	0%	0%	-4%	-16%	►	▼
Sud	Production	0%	0%	0%	-4%	-16%	►	▼
Sud	Besoins alimentaire	1,213	1,455	1,179	-3%	-17%	►	▼
Sud	Autosuffisance (%)	34,395	34,038	34,835	1%	1%	►	►

- Notes:
1. Les données de l'analyse de marché pour l'année de commercialisation 2025/26 sont des estimations de FEWS NET à partir de juillet 2025 et pourraient être révisées.

Food balance sheet

- The equilibrium of supply and demand can be accounted for using a Food Balance Sheet (FBS), which is an estimate of local production, exports, consumption, and imports, and can indicate surpluses within a country or regionally.
- **Commodity Balance Sheet ≠ Food Balance Sheet**
 - The FBS may also include population and nutritional conversion factors, allowing for calculation of average per capita availability of calories, protein, and fats.
 - The FBS is often compiled at a national level, but it can be compiled at the sub-national or regional levels.
 - FBS do not show how access to food may differ by sub-population.

Common elements of a Balance Sheet

Component	Calculation
1. Carry over stocks from previous season/year	a +
2. Production	b +
3. Estimated imports (formal and informal)	c -
4. Estimated exports (formal and informal)	d -
5. Other uses (seed, animal feed, industrial uses, pre and post harvest losses)	e =
6. Estimated national availability	f -
7. National consumption	g =
8. Surplus/Deficit	h

Self-sufficiency and market dependence

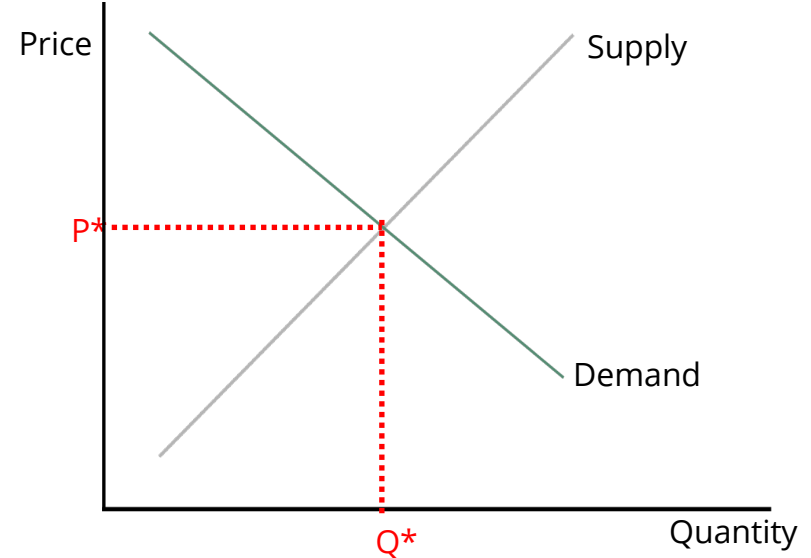
- The role of international markets varies widely in FEWS NET. Some countries rely more on international imports while others rely on regional markets.
 - **Self-sufficiency:** The extent to which a population can satisfy its food needs from its own production.
 - **Market dependence:** The degree to which individuals depend on markets to access food as opposed to consuming food they produce.
 - **Import dependence:** The degree to which a given geographic area depends on imports rather than local production to meet local requirements.



Many FEWS NET countries heavily rely on imports to fulfill domestic consumption requirements. These countries are more vulnerable to food price variations driven by currency fluctuations and international shocks.

Prices

- **Definition 1:** the cost or value of a good or service expressed in monetary terms.
- **Definition 2:** summary of information about the forces of supply, demand, and economic relationships within the food system.
- **Price determination:** interaction of the forces of supply and demand that yield an equilibrium price
- **Price discovery:** interaction between the buyers and the sellers, and the negotiations of prices based on each actor's estimation of supply and demand.



Prices analysis-Key concepts



Nominal price

Value in monetary terms. It is the number of local currency paid for a good or service at the market or in a shop



Real price

Nominal price that has been adjusted for inflation



Inflation

A general increase in prices and a decrease in the purchasing value of money.



Exchange rate

The rate at which one currency can be exchange for another.



Relative price

Price of one good expressed in terms of another. Ex: Terms of Trade



Average

Central value of a set of numbers.

Price variations

- **Price variability** refers to changes in price, often expected, especially when food prices are determined by distinct seasonal trends.
- **Price volatility** is excessive and less predictable changes in price, driven by external forces or shocks and typically considered outside of the normal context.

Imported rice retail prices, Port au Prince, Haiti
2020-2024

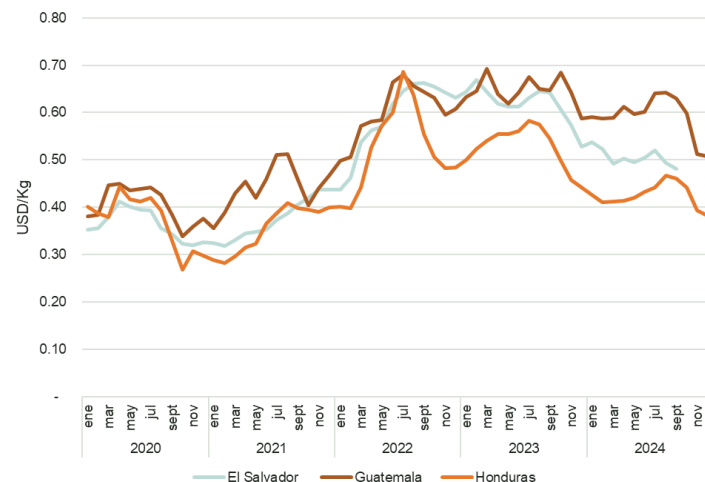


Source: FEWS NET.

Market integration




- The degree to which trade can and does take place between two markets.
 - In the absence of trade data, market integration is often measured by the extent to which prices are transmitted from one market to another.
 - Usually measured by the degree of correlation between prices in different markets. Generally, a high correlation implies more integration.
 - Price correlation implies a relationship, but not necessarily causality.

Wholesale white maize prices in Central America, 2020-2024



Source: FEWS NET with data from the Ministry of Agriculture and Livestock (El Salvador), Ministry of Agriculture and Food (Guatemala) and the Honduran Market Information System.

Price transmission

		
Higher	Little to no transmission	Limited
<ul style="list-style-type: none">Domestic price near import parity: imports are occurring or likely to occur, as imported goods can compete with local prices.Domestic price near export parity: exports are occurring or feasible, since local goods can be sold competitively in external markets.	Domestic price is well within the bounds set by the import parity and export parity prices	Policy barriers to international trade, lack of market information, or uncompetitive markets



Parity means equal or equivalent.

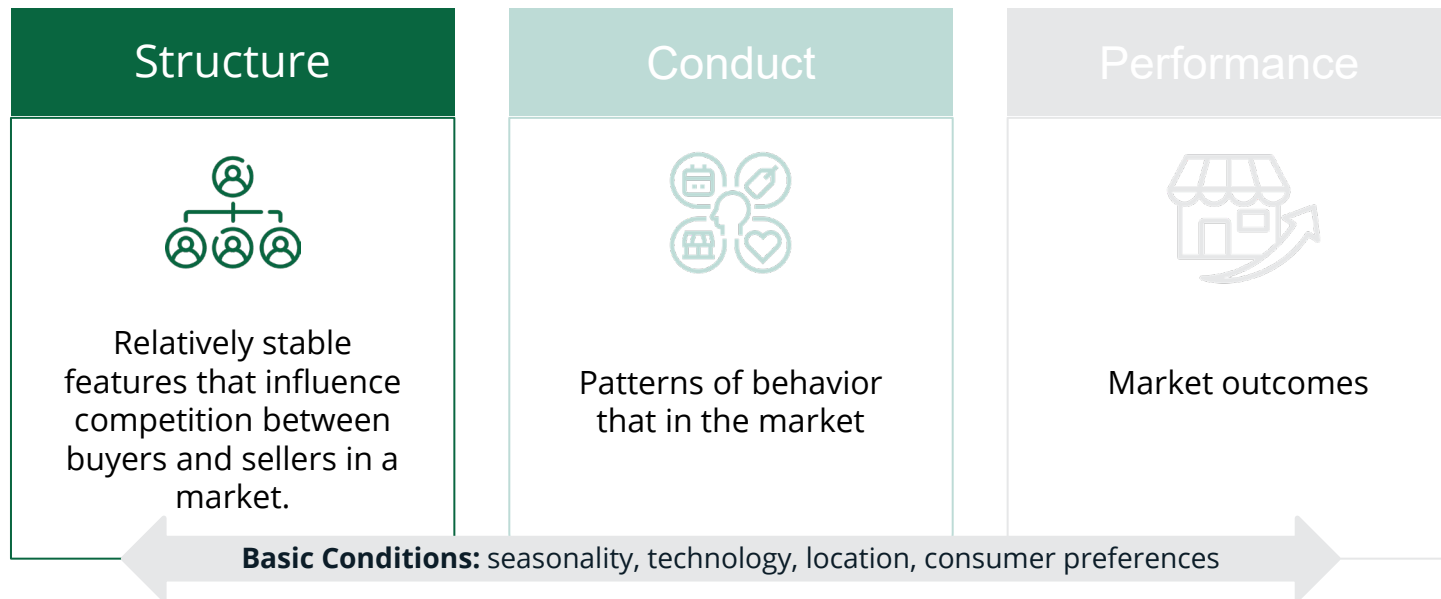
Parity pricing is making the price of a particular commodity equal or equivalent to a reference price for the same commodity in another location



Structure-Conduct-Performance (S-C-P)

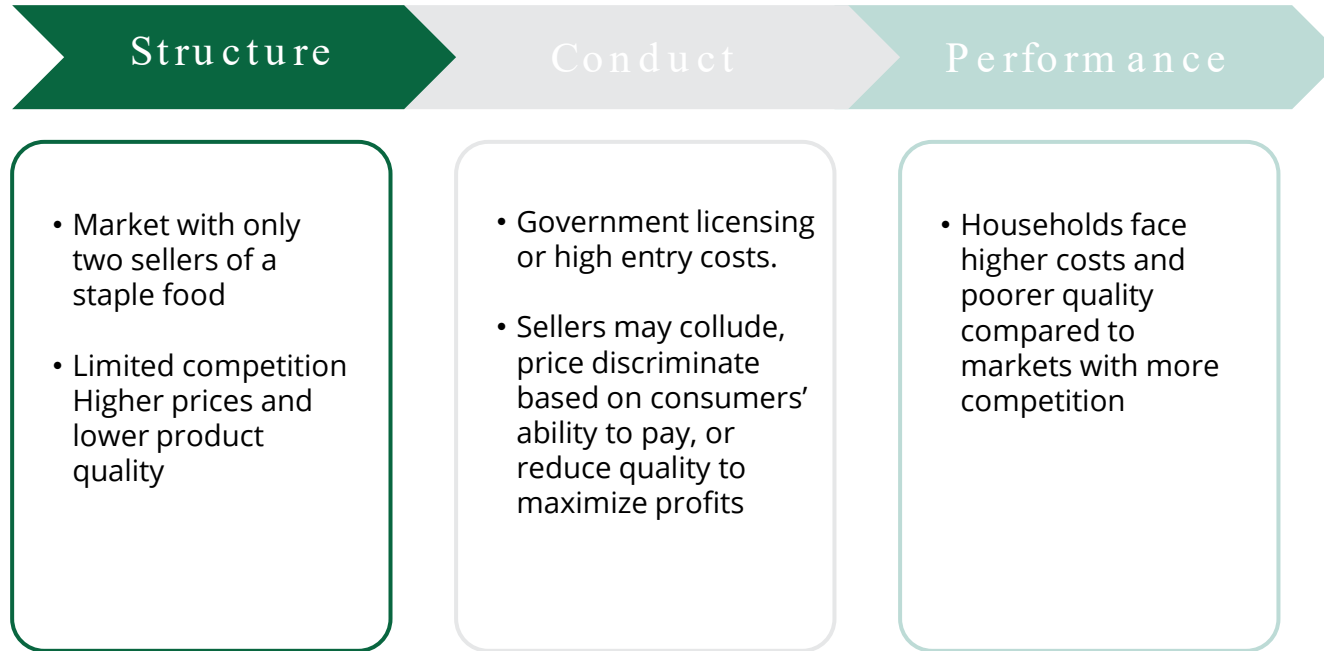
Analytical approach

- **Structure-Conduct-Performance (S-C-P)** is an analytical approach used to study how the structure of the market and the behavior of sellers of different commodities and services affect the performance of markets, and consequently the welfare of a country.





Structure-Conduct-Performance (example)



Questions?