Sudan Prices and Availability Monitoring Survey (SPAMS)

Methodology, Coverage, and Value Addition

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1 INTRODUCTION

Sudan is facing profound economic and market disruptions driven by prolonged conflict, political instability, and severe macroeconomic deterioration. These shocks have substantially undermined agricultural production, disrupted supply chains, and weakened market functioning across the country. Agriculture, which remains central to livelihoods, food security, and economic activity in Sudan, has been particularly affected by infrastructure damage, population displacement, rising input and transport costs, and increasing fragmentation of markets. In this context, food availability and affordability have become highly volatile, with wide spatial disparities across states and localities.

Timely, reliable, and geographically disaggregated market information is therefore critical. In fragile and conflict-affected settings such as Sudan, real-time market intelligence plays a central role in informing humanitarian response, guiding policy decisions, supporting private sector activity, and shaping recovery and resilience strategies. However, existing market information systems in Sudan remain fragmented, infrequent, and uneven in coverage, limiting their usefulness for rapid decision-making and evidence-based intervention design.

The Sudan Prices and Availability Monitoring Survey (SPAMS) responds directly to this gap. It is designed as a high-frequency, nationwide market monitoring system that systematically tracks commodity prices, availability, and key market drivers across Sudan's 18 states. By combining bi-weekly data collection with weekly data availability, SPAMS provides a level of timeliness and spatial coverage that is currently unmatched in the Sudanese context. This enables near real-time monitoring of price movements, availability disruptions, and emerging market stress in an environment where conditions can change rapidly due to security, macroeconomic, or logistical shocks.

This document presents the methodology, coverage, and value addition of SPAMS, including its survey design, data collection and quality assurance approach, commodity and geographic coverage, and analytical outputs. It also situates SPAMS within the broader landscape of market monitoring initiatives in Sudan, highlighting its comparative strengths in frequency, scope, and analytical depth and its contribution to evidence-based humanitarian, policy, and recovery planning.

2 RATIONALE AND EXPECTED OUTCOMES

Reliable market information in Sudan remains missing due to weak digital infrastructure and fragmented reporting systems. The ongoing conflict and macroeconomic instability have made timely, localized, and consistent market data even more important than ever. Without robust monitoring systems, humanitarian actors and policy institutions struggle to design effective targeting and evidence-based interventions.

The destruction of market infrastructure reduced private sector activity, and rising costs of transportation and inputs have disrupted supply chains and increased food insecurity. Most rural and conflict-affected areas remain underserved by current market information systems. SPAMS responds to this gap by establishing a continuous, state-wide monitoring framework that informs rapid response and long-term planning.

SPAMS delivers measurable and impactful results across multiple layers of stakeholders:

- **Outcome A – Agri-businesses:** Micro, small, and large businesses benefit from enhanced market transparency and real-time access to weekly retail prices for key commodities across Sudan's 18 states. This enables them to mitigate risks, maintain profit margins, and make informed strategic and operational decisions.
- **Outcome B – Farmers and Farmers' Associations:** Farmers and organized cooperatives gain access to localized pricing and availability trends for essential inputs and outputs, including seeds, fertilizers, fuel, and agricultural products. This improves their understanding of supply and demand dynamics, enhances their negotiating power, and strengthens agency over pricing and margins.
- **Outcome C – Policy Makers and Development Partners:** Government and non-government stakeholders will benefit from granular, timely, and spatially disaggregated data—enabling them to design evidence-based policies, monitor market functionality, and coordinate development interventions more effectively.
- **Outcome D – Humanitarian Actors:** Humanitarian agencies and organizations will gain timely market intelligence to better assess needs, design market-sensitive interventions, and target assistance to the most vulnerable populations, particularly in conflict-affected and hard-to-reach areas.
- **Outcome E – Research and Knowledge Generation:** PAMS provides a high-frequency, consistent, and accessible market dataset that supports policy-relevant research and analytical work by Sudanese and international researchers and research institutions, contributing to evidence-based analysis of markets, food security, and fragility contexts.

3 OBJECTIVE AND SPECIFIC OUTPUTS

The overall objective of this initiative is to strengthen market intelligence and inform policy, research, and programmatic responses by establishing a comprehensive, real-time monitoring system for essential commodity prices and availability in Sudan.

To achieve this, SPAMS pursues the following specific objectives:

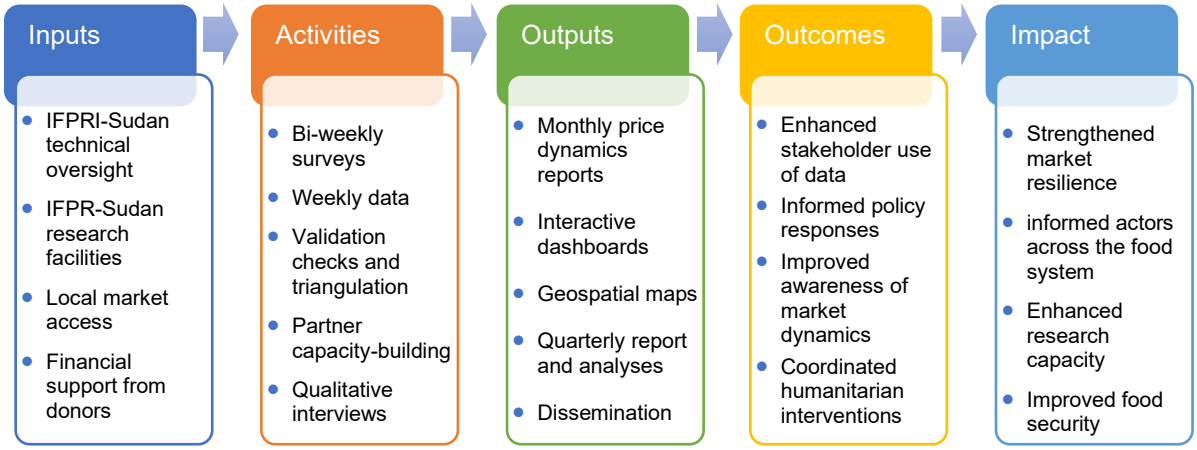
1. Monitor weekly prices and availability of over 40 essential commodities across Sudan's major markets, including staple foods, fuel, seeds, and animal products, with disaggregation by state and market type to capture spatial variation.

2. Evaluate currency exchange impacts on market dynamics by tracking official and parallel exchange rates and assessing their influence on pricing trends, particularly in border and high-inflation areas.
3. Generate qualitative insights from market actors—such as traders, transporters, and wholesalers—on perceived supply chain bottlenecks, consumer behavior, and policy constraints.
4. Publish monthly bulletins containing detailed visual and narrative analyses of market trends, including time series, regional comparisons, and highlights for decision-makers.
5. Enhance open-access market data through interactive Power BI dashboards that allow users to filter, compare, and visualize commodity-specific data across space and time.

4 THEORY OF CHANGE

The SPAMS logic follows a clear flow from data collection to stakeholder use as depicted in the following theory of change diagram (Figure 1). It begins with systematic market monitoring—covering price, availability, currency effects, and market sentiment. These inputs are processed into monthly analytical bulletins and visualized through real-time dashboards and spatial mapping tools. These outputs inform decision-making for stakeholders including farmers, traders, businesses, donors, researchers, and policy actors, ultimately contributing to improved food system resilience and more effective response planning.

FIGURE 1: THEORY OF CHANGE



5 METHODOLOGY AND DATA COLLECTION

The SPAMS is a high-frequency market monitoring system designed to track food prices, commodity availability, and market functioning across Sudan under conditions of conflict and economic disruption. Weekly records are produced from bi-weekly rounds to support regular reporting and trend monitoring. Coverage spans two major markets in each of Sudan's 18 states, drawn from two different localities per state, for a total of 36 markets.

5.1 Data Collection Approach

SPAMS employs a mixed-methods approach that combines quantitative price and availability data with qualitative market insights. Data collection activities include:

- **Quantitative surveys** administered through structured questionnaires to five traders per market, yielding a total sample of 180 traders across the 18 states of Sudan in each bi-weekly round. The questionnaire captures retail prices for a standardized basket of key food and non-food commodities, along with information on commodity availability, stock status, supply sources, recent price changes, and key drivers affecting market conditions.
- **Qualitative insights** collected through semi-structured interviews with key market actors to contextualize quantitative findings and document operational challenges, supply constraints, and market responses.
- **Third-party data collection**, whereby IFPRI sub-contracts trusted local data collection companies to conduct field activities. Firms are selected through a competitive process emphasizing data quality, field capacity, and the ability to operate in conflict-affected environments.

5.2 Quality Assurance and Monitoring

Robust quality assurance mechanisms are embedded throughout the data collection process. These include:

- Real-time, high-frequency quality checks, enabled through computer-assisted personal interviewing (CAPI), allowing for immediate detection of inconsistencies, missing values, and extreme outliers.
- Validation and consistency checks, including GPS verification to confirm that enumerators submit interviews from within 10 meters of each designated market location.
- Internal dashboards and automated alerts used to flag anomalous price movements, availability patterns, or interview metadata for follow-up and verification.
- Continuous feedback loops between IFPRI and third-party data collection firms, including systematic reporting of data quality concerns and implementation of corrective actions where required.

5.3 Data Management and Reporting

All survey data are transmitted digitally and subjected to standardized cleaning and validation protocols prior to analysis. The integration of Power BI dashboards and geospatial overlays enables timely visualization of market trends, spatial comparisons across states and localities, and customized analysis by stakeholders. Weekly reporting ensures that emerging market disruptions and price pressures are identified and communicated in a timely manner.

Prices are collected using local units of measure as reported by traders. During data processing, prices are converted into standardized units using predefined and consistently applied conversion factors. This standardization enables comparison of prices across markets, states, and time periods. Conversion procedures are applied uniformly across all survey rounds.

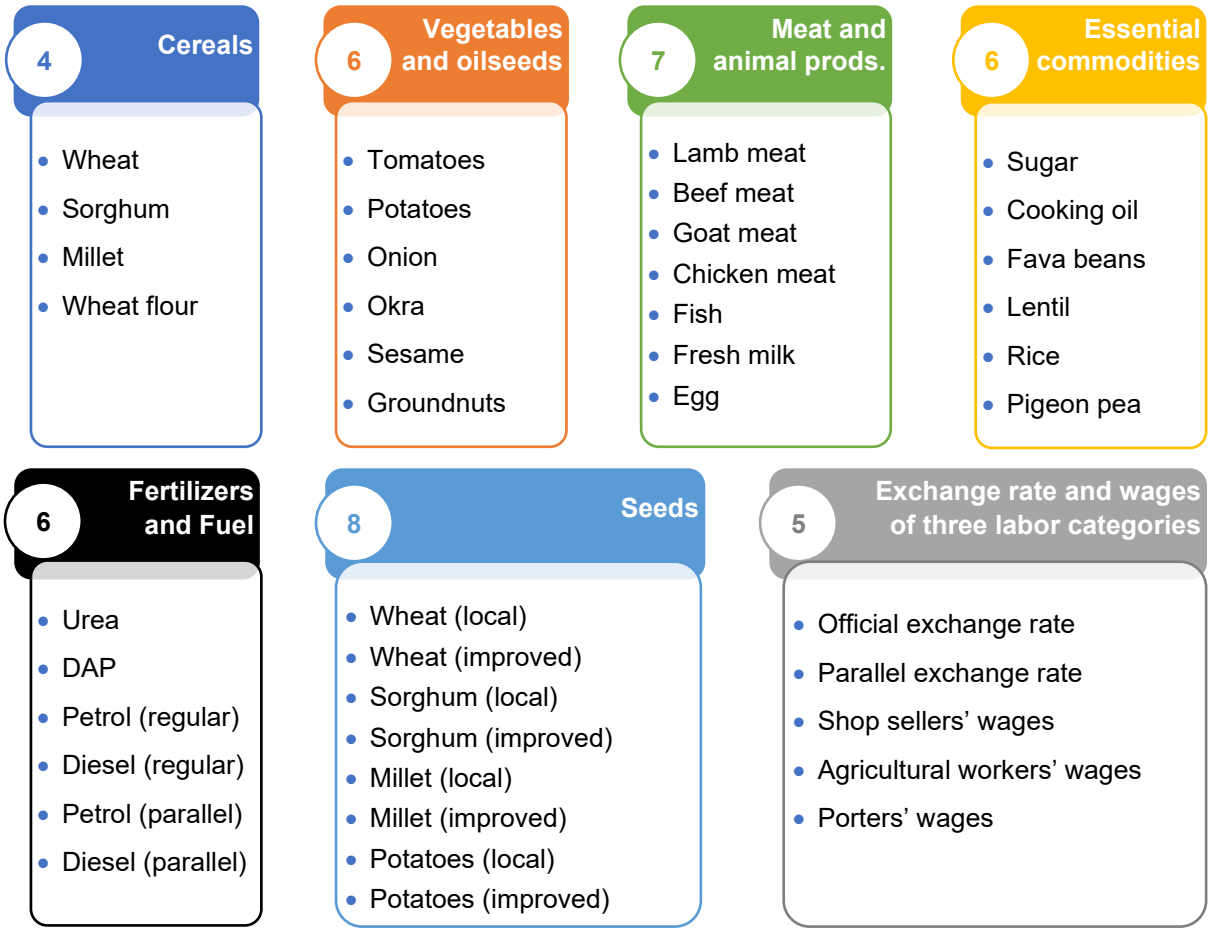
5.4 Commodity Coverage

In its current configuration, SPAMS monitors over 40 commodities, including 23 essential food commodities that are widely consumed by households across Sudan, such as staple cereals,

pulses, cooking oil, sugar, and other commonly traded food items. In addition to food commodities, SPAMS tracks key market cost and macro-relevant variables, including fuels (petrol and diesel in both regular and parallel markets), fertilizers (urea and DAP), wages for three categories of casual labor (agricultural workers, porters, and shop sellers), and exchange rates in both regular and parallel markets. Together, these indicators capture the main drivers of production costs, transport expenses, and price formation across markets.

The current scope of commodity coverage under SPAMS is illustrated in Figure 2. This coverage reflects the present implementation of the survey and is designed to remain flexible. The number of commodities monitored and the specific varieties included may be adjusted over time in response to changing market dynamics, emerging shocks, and evolving information needs, while preserving a stable core set of indicators to ensure comparability over time.

FIGURE 2: COMMODITY COVERAGE OF SPAMS



5.5 Geographical Coverage

Market coverage under SPAMS is illustrated in Figures 3–6, which together present the full geographic distribution of surveyed markets across Sudan. The figures group markets by broad geographic regions to enhance clarity and readability, while maintaining consistency with the underlying sampling framework.

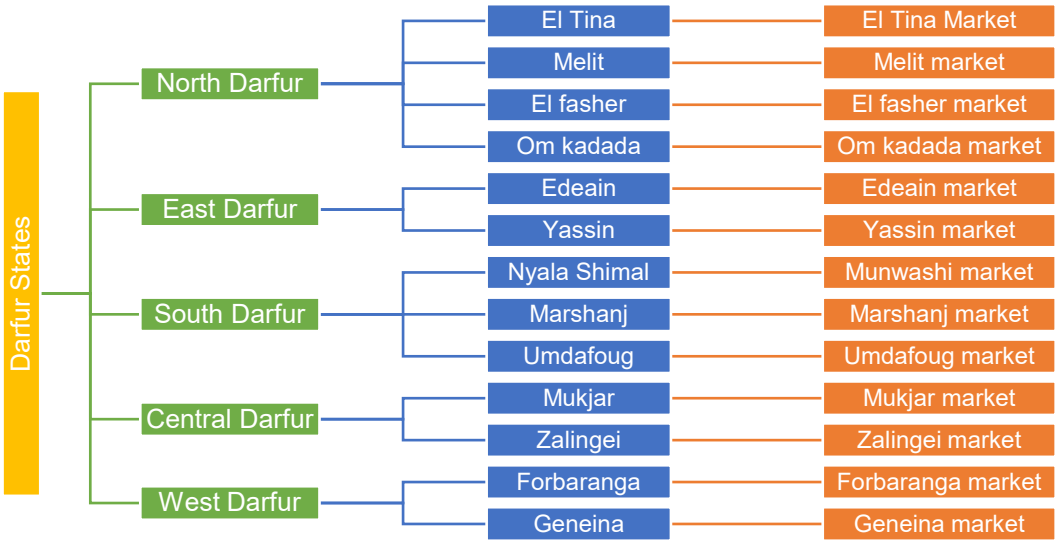
Across all regions, market selection reflects the operational objective of monitoring key trading centers that remain functional and accessible for data collection. Data are collected bi-weekly

in each market and compiled into weekly records, ensuring timely and spatially comparable monitoring of prices and commodity availability across the country.

Annex A lists the market pool used for substitution; only two markets per state are fielded in any single round.

Figure 3 presents SPAMS market coverage across the Darfur States, including North Darfur, East Darfur, South Darfur, Central Darfur, and West Darfur. Two markets are covered in each state, drawn from different localities, in line with the survey design.

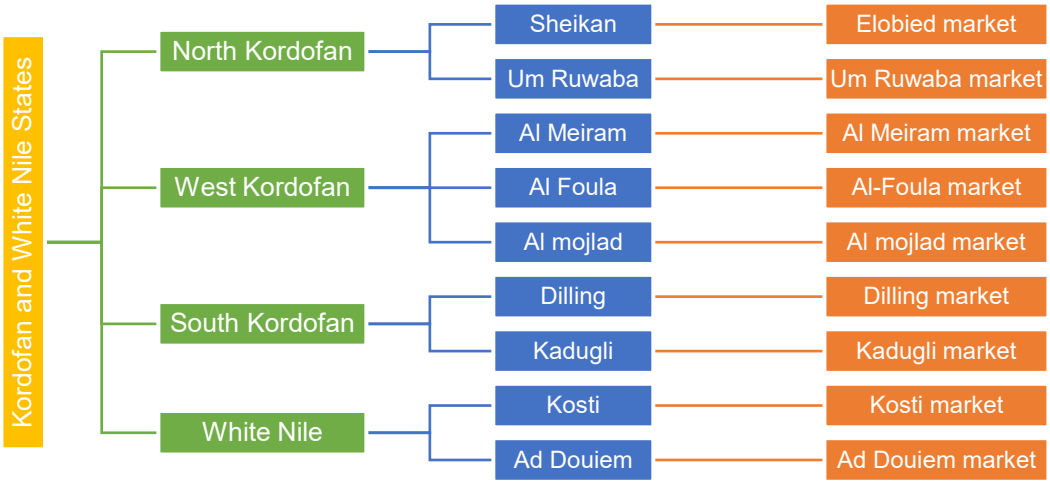
FIGURE 3: MARKETS COVERAGE OF SPAMS IN THE DARFUR STATES ALONG WITH THEIR LOCALITIES



NOTE: In each data collection round, SPAMS covers two markets per state. States listed with more than two markets in this Figure reflect the full pool of markets used over time. In such cases, markets are rotated or substituted across rounds based on prevailing security conditions, access constraints, and rapid market assessments conducted immediately prior to each data collection round.

Figure 4 illustrates SPAMS market coverage in North Kordofan, West Kordofan, South Kordofan, and White Nile States. In each state, two markets from different localities are included to capture intra-state variation in market conditions.

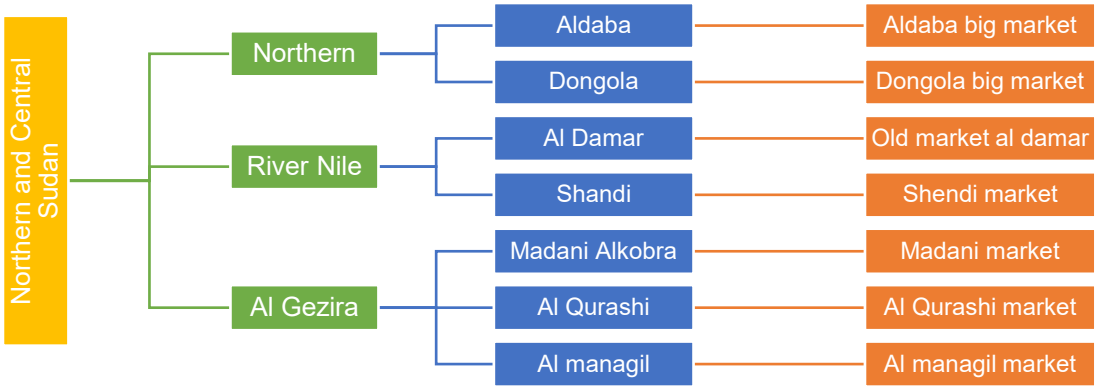
FIGURE 4: MARKETS COVERAGE OF SPAMS IN KORDOFAN AND WHITE NILE STATES ALONG WITH THEIR LOCALITIES



NOTE: In each data collection round, SPAMS covers two markets per state. States listed with more than two markets in this Figure reflect the full pool of markets used over time. In such cases, markets are rotated or substituted across rounds based on prevailing security conditions, access constraints, and rapid market assessments conducted immediately prior to each data collection round.

Figure 5 shows the markets covered by SPAMS in Northern and Central Sudan, highlighting the distribution of surveyed markets across states and localities consistent with the bi-weekly data collection framework.

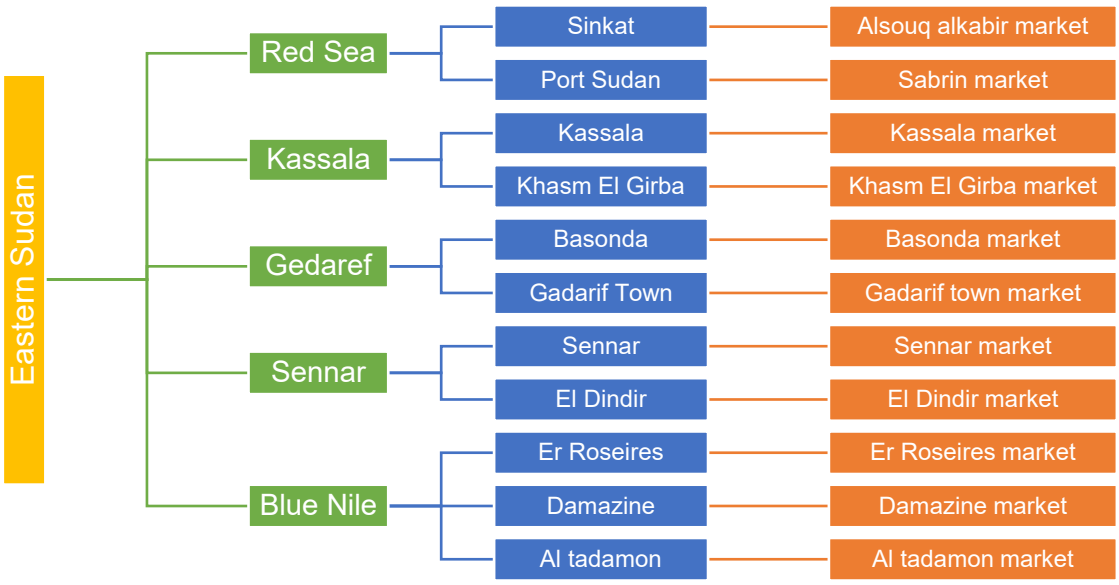
FIGURE 5: MARKETS COVERAGE OF SPAMS IN NORTHERN AND CENTRAL SUDAN ALONG WITH THEIR LOCALITIES



NOTE: In each data collection round, SPAMS covers two markets per state. States listed with more than two markets in this Figure reflect the full pool of markets used over time. In such cases, markets are rotated or substituted across rounds based on prevailing security conditions, access constraints, and rapid market assessments conducted immediately prior to each data collection round.

Figure 6 presents SPAMS market coverage in Eastern Sudan, indicating the selected markets and localities included in the survey in accordance with the standardized sampling approach.

FIGURE 6: MARKETS COVERAGE OF SPAMS IN EASTERN SUDAN ALONG WITH THEIR LOCALITIES



NOTE: In each data collection round, SPAMS covers two markets per state. States listed with more than two markets in this Figure reflect the full pool of markets used over time. In such cases, markets are rotated or substituted across rounds based on prevailing security conditions, access constraints, and rapid market assessments conducted immediately prior to each data collection round.

A complete list of markets and localities covered under SPAMS, consistent with Figures 3–6, is presented in Annex A.

6 IMPORTANCE AND VALUE ADDITION

SPAMS offers a unique and timely contribution to food security monitoring in Sudan by combining breadth, depth, and innovation in its approach. Its distinctiveness lies in the following:

- **Comprehensive National Scope:** The initiative monitors over 40 essential food and non-food commodities across 36 major markets, covering all 18 states of Sudan. This level of geographic and product coverage enables nuanced, state-level analysis of market dynamics. The framework is also designed for scalability, allowing for additional commodities or markets to be incorporated based on demand and logistical feasibility.
- **Unmatched Frequency and Timeliness of Data:** SPAMS data are collected on a bi-weekly basis and compiled and disseminated in weekly records, making it the most frequent and timely market and price dataset currently available in the Sudanese context. This high-frequency design allows near real-time tracking of price movements, availability shocks, and emerging market stress, which is critical in a highly volatile and conflict-affected environment.
- **Thematic Depth and Analytical Relevance:** Beyond basic price tracking, the initiative integrates multi-dimensional analysis of availability, price volatility, informal exchange rate trends, and market sentiment. These themes are critical in conflict-affected contexts where currency fluctuations, market disruption, and access constraints directly affect food affordability and availability.
- **Digital Innovation and Real-Time Accessibility:** Leveraging Power BI dashboards and interactive geospatial mapping, the platform provides real-time visualizations and analytics for policymakers, humanitarian agencies, and researchers. These tools enhance transparency, enable faster decision-making, and support data-driven programming in humanitarian response and recovery planning.
- **Capacity Building:** While the current phase operates through partnership with a local data collection institution, SPAMS places strong emphasis on continuous capacity strengthening. Enumerators receive bi-weekly refresher trainings aligned with each data collection round to review data quality issues and address field challenges, strengthening their ability to operate in fragile and conflict-affected settings. Since the launch of SPAMS, more than 20 training rounds have been conducted, and this rhythm will continue. Looking ahead, SPAMS aims to expand engagement with Sudanese research institutions, universities, and policy actors to promote shared ownership and the institutionalization of market monitoring systems over time.

Taken together, these features position SPAMS as a strategic public good for Sudan. By combining expansive market coverage, unmatched data frequency, strong analytical focus, and modern digital dissemination, the initiative fills critical data gaps, strengthens evidence-based decision-making, and supports resilience planning in Sudan's fragile and evolving food systems.

A comparative overview of SPAMS relative to other market monitoring initiatives operating in Sudan is presented in Table 1, highlighting key differences in objectives, geographic coverage, commodity scope, data frequency, methodologies, outputs, and primary users.

TABLE 1: COMPARATIVE SCORECARD OF MARKET MONITORING INITIATIVES IN SUDAN

Dimension	SPAMS	Joint Market Monitoring Initiative (JMMI)	WFP Market Monitor
Primary Objective	Establish a comprehensive, high-frequency system to strengthen market intelligence and inform policy, research, and programmatic responses	Inform cash and voucher assistance design and adjustments for humanitarian actors following the April 2023 conflict	Track food prices, food basket costs, and key macro drivers affecting food security
Geographic Coverage	Nationwide • 18 states • 36 markets drawn from different localities	Context-specific • Coverage varies by access and partner presence • Excludes Red Sea, River Nile, Sennar, and Al Jazirah • 3–7 markets per covered state	State capitals only • Monthly price collection in each state capital
Commodity Scope	Broad and multi-sectoral • 23 essential food commodities • Agricultural inputs (seeds, fertilizers) • Fuels (regular and parallel markets) • Wages (3 casual labor categories) • Exchange rates (official and parallel)	Cash-assistance focused • Core food and non-food items aligned with cash baskets • Hygiene and household items • Scope varies by assessment and location	Food basket focused • Selected food items used to compute food basket costs • Limited macro indicators (fuel, exchange rate, wages)
Frequency of Data Collection	Bi-weekly collection; weekly data availability	Monthly (variable by partner capacity)	Monthly
Timeliness and Responsiveness	Very high; near real-time tracking of price and availability shocks	Moderate; periodic snapshots	Moderate; suitable for trend monitoring
Data Collection Methodology	• Structured trader surveys and semi-structured interviews • Five traders per market per round • Prices, availability, and trader perceptions	• Partner-driven data collection • Coverage depends on partner interest and field capacity	• Collected by WFP staff in state capitals • Aggregated at state and national levels
Analytical Depth	High • Prices, availability, volatility • Informal exchange rates • Input costs and wages • Market stress perceptions	Medium • Market functionality and access • Cash feasibility	Medium • Food basket trends • Macro context
Outputs and Dissemination	• Monthly analytical reports • Public, regularly updated interactive dashboards • Research papers linking to conflict and other datasets • Dissemination events	• Monthly factsheets and market overviews • Inputs to multi-sectoral needs assessments	• Monthly market bulletins and reports
Primary Users	• Researchers • Policymakers • National and international partners • Public users	• Humanitarian partners implementing cash and voucher assistance	• WFP and humanitarian partners planning food assistance
Strategic Value Addition	High • Only nationwide, high-frequency system • Supports research, humanitarian response, and policy analysis	Targeted • Strong for cash programming but limited spatial coverage	Operational • Strong for food assistance planning but limited frequency and scope

NOTES:

- Comparisons reflect publicly available descriptions of the referenced initiatives and may evolve over time.
- SPAMS commodity coverage reflects the current configuration of the system (see Figure 2) and may be adapted in response to evolving market conditions and information needs (see Annex A).
- Information on JMMI is based on IMPACT/REACH public documentation ("Sudan | Impact").
- Information on the WFP Market Monitor is based on the "Sudan Market Monitor" published via ReliefWeb.

7 CONCLUSION

SPAMS is designed as a high-frequency market monitoring system to track commodity prices, availability, and market functioning across Sudan in a context of conflict and economic disruption. Data are collected through a mixed-methods approach combining structured trader questionnaires and qualitative interviews, with bi-weekly field collection compiled into weekly records to support timely monitoring and reporting.

The survey covers markets across Sudan's 18 states using a standardized sampling framework, with two markets per state targeted in each data collection round and provisions for market substitution when required by access and security dynamics. Market coverage is presented in Figures 3–6, and the full pool of markets and localities used for implementation is documented in Annex A.

In its current configuration, SPAMS monitors a broad basket of essential food and non-food indicators, including food commodities, fuels, fertilizers, wages, and exchange rates, providing an integrated view of price formation and market stress drivers. The current commodity scope is summarized in Figure 2 and is designed to remain adaptable to evolving market conditions and information needs while maintaining comparability over time.

By combining nationwide geographic coverage, high-frequency data production, analytical breadth, and digital dissemination through dashboards and regular reporting outputs, SPAMS fills a critical gap in Sudan's market intelligence architecture. The comparative scorecard in Table 1 further highlights SPAMS' distinct contribution relative to other monitoring efforts in terms of coverage, frequency, commodity scope, and intended users.

8 ANNEX

ANNEX A: MARKETS COVERED ALONG WITH THEIR LOCALITIES AND STATES

No.	State	Locality	Market name
1	North Darfur	El Tina	El Tina Market
2		Melit	Melit Market
3		El Fasher	El Fasher Market
4		Um Kadada	Um Kadada Market
5	East Darfur	Ed Daein	Ed Daein Market
6		Yassin	Yassin Market
7	South Darfur	Nyala Shimal	Munwashi Market
8		Marshanj	Marshanj Market
9		Um Dafoug	Um Dafoug Market
10	Central Darfur	Mukjar	Mukjar Market
11		Zalingei	Zalingei Market
12	West Darfur	Forbranga	Forbranga Market
13		Geneina	Geneina Market
14	North Kordofan	Sheikan	El Obeid Market
15		Um Ruwaba	Um Ruwaba Market
16	West Kordofan	Al Meiram	Al Meiram Market
17		Al Fula	Al Fula Market
18		Al Mujlad	Al Mujlad Market
19	Northern State	Aldaba	Aldaba big market
20		Dongola	Dongola big market
21	River Nile	Al Damar	Old market al damar
22		Shandi	Shendi market

No.	State	Locality	Market name
23	Khartoum	Karari	Karari market
24		Sharq El Nile	Sharq El Nile market
25		Hilat koko	Hilat koko market
26	Al Jazirah	Madani Alkobra	Madani market
27		Al Qurashi	Al Qurashi market
28		Al managil	Al managil market
29	Kassala	Kassala	Kassala Market
30		Aroma	Aroma Market
31		Khasm El Girba	Khasm El Girba market
32	Gedaref	Gedaref	Gedaref Market
33		Basunda	Basunda Market
34	Sennar	SEnnar	Sennar market
35		El Dindir	El Dindir market
36	Blue Nile	Er Roseires	Er Roseires market
37		Damazine	Damazine market
38		Al tadamon	Al tadamon market
39	Red Sea	Port Sudan	Sabrin market
40		Tokar	Tokar Market
41		Sinkat	Alsouq alkabir market
42	White Nile	Kosti	Kosti Market
43		Ad Douiem	Ad Douiem Market
44	South Kordofan	Dilling	Dilling Market
45		Kadugli	Kadugli Market

NOTE:

In each data collection round, SPAMS covers two markets per state. States listed with more than two markets in Annex A reflect the full pool of markets used over time. In such cases, markets are rotated or substituted across rounds based on prevailing security conditions, access constraints, and rapid market assessments conducted immediately prior to each data collection round. This approach ensures continuity of state-level coverage while maintaining enumerator safety and data reliability in a highly dynamic context.

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ACKNOWLEDGMENTS

This research was supported by the Netherlands Embassy for Sudan and the Food and Agriculture Organization of the United Nations (FAO). This partnership enables the sustained production and use of timely, reliable, and publicly available market data in one of the world's most challenging contexts.

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