



C248 – Nigeria Improving SPS compliance to boost export capacity project

REPORT ON GENDER ANALYSIS STUDY IN SESAME VALUE CHAIN IN NIGERIA

Report prepared by: Nwanze Olamide Deborah, National Consultant
Study period: 15 November 2026 – 31 March 2026



TABLE OF CONTENTS

	EXECUTIVE SUMMARY	4
	A. Study Purpose and Context	4
	B. Methodology	4
	C. Key Findings	4
	i. Gendered Division of Labour and Central Role in Quality	4
	ii. SPS Knowledge Gaps and Systemic Drivers of Non-Compliance	5
	iii. Barriers to Women's Participation and Benefit	5
	iv. Enabling Factors and Opportunities	6
	D. Conclusions and Recommendations	7
	i. Reach	7
	ii. Benefit	8
	iii. Empower	8
	iv. Transform	9
1.0	BACKGROUND	10
1.1	Study Rationale and Link to Project Goals	10
1.2	Introduction	12
1.3	Study Objectives	13
2.0	METHODOLOGY	14
2.1	Desk-Based Review	14
2.2	Pre-Field Phase: Tool Development and Validation	14
2.3	Historical and Contextual Rationale for Site Selection (Benue & Nasarawa)	14
2.4	Field Mission	15
2.4.1	Sampling Strategy and Site Selection	15
2.4.2	Participants and Data Collection Methods	16
2.5	Post-Mission and Overall Analysis	17
2.6	Policy Review: Gender in Agricultural Policy (GAPo) Analysis	18
3.0	KEY RESULTS	19
3.1	Sesame Regional Production Zones and Value Chain Activities in Nigeria: Desk Review	19
3.2	Regional Production Comparison across Major Producing States in Nigeria	19
3.3	Policy and Programme Review: Support to Sesame and Cowpea Value Chains in Nigeria	22
3.4	Overview of the Sesame Value Chain and Livelihood Context	26
3.5	Gendered Division of Labour and Differentiated Roles	27
3.6	Storage Practices, SPS Knowledge Gap, and Pesticide Residue Awareness	30
3.7	Access to and Use of Traceability Systems	30
3.8	Preferred Information Channels, Training Format, and Timing	31
3.8.1	Information Channels	34
3.9	Perceived Livelihood Status, Agency, Benefits, and Aspirations	35
3.10	Sesame (Beni-seed) Production and Challenges	35
4.0	DISCUSSION OF RESULTS USING THE RBET FRAMEWORK	37
4.1	Reach – Gendered Access to Information and Extension	37
4.2	Benefit – Differential Accrual of Economic Gains	38
4.3	Empower – Disparities in Control over Resources and Decisions	38
4.4	Transform – Addressing Systemic Incentives and Norms	38
5.0	Food Safety Policies Review, Analysis and Support for Women in Sesame and Cowpea Value Chains in Nigeria	39

5.1	Policy and Programme Review — Support to Sesame and Cowpea Value Chains in Nigeria	40
5.2	Gender in Agricultural Policy Assessment (GAPo): Summary of Findings	40
5.3	Policy-by-Policy Analysis: Implications for the Sesame and Cowpea Value Chains	42
5.4	Federal and State-Level Gender-Responsive Initiatives in Sesame and Cowpea Producing States	44
6.0	CONCLUSION	46
7.0	LESSONS LEARNED, RECOMMENDATIONS, AND NEXT STEPS	48
7.1	Challenges	47
7.2	Best Practices	47
7.3	The next phase of the project should address the identified gaps	47
8.0	REFERENCES	51
9.0	ANNEXES	56
10.0	PHOTO GALLERY	90
	LIST OF TABLES	
	Table 1: Sesame value chain stakeholders engaged in Guma, Lafia and Makurdi local government areas in Benue and Nasarawa states	18
	Table 2: Comparative Overview of Sesame Production across Major Producing States, Nigeria (est. 2019–2022)	20
	Table 3. Policy and Programme Review: Relevance and Support to Sesame and Cowpea Value Chains in Nigeria	23
	Table 4: Sesame value-chain phases and food-safety risk points linked to existing studies	27
	Table 5: Synthesizes Actors, roles, and gender participation across the sesame value chain	28
	Table 6: Preferred training format by men and women sesame value chain actor	34
	Table 7: GAPo scoring results across thirteen policies, ranked from lowest to highest gender integration	40
	LIST OF ANNEXES	
	Annex Table A1: Women Sesame Farmers/Processors (FGD)	56
	Annex Table A2: Women Sesame Traders (FGD)	56
	Annex Table A3: Men Sesame Farmers (FGD)	57
	Annex Table A4: Men Sesame Traders (FGD)	58
	Annex Table A5: Key Informant Interview Participants	58
	Annex C: Summary Results Table: Gender Integration in Nigerian Policies using GAPo Indicators	86 - 89
	LIST OF FIGURES	
	Figure 1: Map of Nigeria showing study states and locations	17
	Figure 2: Daily activity chart of sesame women and men farmers	33
	Figure 3: Seasonal calendar for sesame production in Benue State	33
	Figure 4: Problem tree showing causes and effects of non-compliance with sesame seed	37

EXECUTIVE SUMMARY

A. Study Purpose and Context

This study is part of a project aimed at enhancing compliance with Sanitary and Phytosanitary (SPS) standards, thereby improving Nigeria's agricultural export capacity and meeting international requirements. It addresses the systemic challenge of frequent border rejections of Nigerian sesame in key global markets, including the United States, the European Union, Japan, and Turkey, due to non-compliance with Maximum Residue Levels (MRLs) for pesticides and microbial contamination, such as Salmonella. Recognizing that technical compliance necessitates a people-centered approach, this study incorporates a qualitative gender analysis. This approach is crucial because women play a central role in Nigeria's agricultural and oil seed sectors. Regional studies of sesame systems reveal women's active involvement as producers, processors, and traders; however, they often occupy labour-intensive nodes where contamination risks are highest. The study moves beyond "gender-accommodative" interventions to ensure that project interventions and activities on standards, certification, and market access are inclusive, equitable, and responsive to the differentiated realities of women and men actors.

B. Methodology

The study employed a mixed-methods approach in Benue State and selected an adjoining community in Nasarawa State, chosen for their high production volume and role as aggregation hubs. A desk review synthesized existing literature on the sesame value chain, gender dynamics, and SPS standards. For the fieldwork, we used qualitative data collection methods, including sex-disaggregated focus group discussions (FGDs) with farmers, processors, and traders. Key Informant Interviews (KIIs) were also conducted with actors across the chain, including farmers, aggregators, agro-dealers, extension officers, and exporters. Participatory tools, such as gendered daily activity clocks, seasonal calendars, and problem-tree analysis, were used to map roles, time use, and the root causes contributing to SPS non-compliance, aligning with the study's objectives. Data were analyzed thematically and result discussions framed using the Reach, Benefit, Empower, Transform (RBET) framework.

C. Key Findings

i. Gendered Division of Labour and Central Role in Quality

The sesame value chain is dominated by women in manual, time-intensive, and quality-critical pre- and post-harvest activities such as planting, weeding, harvesting, drying, threshing, cleaning, and small-scale trading. Men dominate capital- and resource-intensive tasks: land clearing, input purchasing, mechanized ploughing, bulk transportation, aggregation, and exporter negotiations. Women are thus the primary gatekeepers of on-farm quality and safety but retain minimal control over pesticide selection, purchase, application or the market rewards that determine compliance outcomes.

This division of labor varies across producing regions. In the Middle Belt states of Benue and Nasarawa — the project's field mission states, women participate across the whole value chain, including local market sales, through accessible cooperatives and community groups. In northern states such as Jigawa, Kano, and Yobe, cultural norms (including purdah in parts of Jigawa and Kano) restrict women's field participation; their roles concentrate in compound-based post-harvest processing and home-based trade. Jigawa is Nigeria's leading sesame producer with an estimated 300,000 ha — operates a highly commercial, male-dominated system, though women's processing cooperatives in Taura and Birnin Kudu LGAs have emerged as key actors in cleaning and aggregation. These regional contrasts require geographically differentiated gender responsive and inclusive intervention approaches.

Existing gender-specific policy/programme review.

A Gender in Agricultural Policy (GAPo) tool was used to analyse the extent to which gender and social inclusion perspectives and indicators were integrated in thirteen Nigerian agricultural, environmental and food safety policy documents. These policies (National Food Safety and Quality Bill 2022; National Policy on Food Safety and Its Implementation Strategy 2014; Revised National Policy on Food Safety and Quality 2024, Nigerian Stored Products Research Institute (NSPRI) Food Safety Policy 2024–2030; National Policy on the Environment (NPE-Revised) 2016; Agriculture Promotion Policy (APP) 2015–2020; Economic Recovery and Growth Plan (ERGP); National Agricultural Seed Policy (NASP); Nigeria Digital Agriculture Strategy (NDAS) 2020–2030; National Agricultural Extension Policy (NAEP) 2017; National Gender Policy in Agriculture (NGPA) 2025–2030; National Food and Nutrition Policy (NFNP) 2016; and National Agricultural Technology and Innovation Plan (NATIP) 2022–

2027) were selected because they represent the most relevant and current policies governing agricultural development, food safety, seed systems, extension, digital agriculture, and environmental management in Nigeria. The GAPo was conducted in February 2026 as part of a broader assessment of gender responsiveness in Nigeria's agricultural policy document. The analysis applied 23 core GAPo indicators, with the additional thematic and policy area sub-indicators (a/b) bringing the total assessed indicators to 32. These indicators assessed dimensions such as recognition of women's roles, explicit policy objectives for gender equality, inclusion of measures to address gender inequalities, discriminatory social norms, promotion of women's participation in policy processes, use of sex-disaggregated data, gender-responsive budgeting, and alignment with national and international gender mandates. The scores and indicator-level findings inform the study's identification of policy gaps. By linking policy review results with the field work primary data, the study provides both a macro-level policy diagnosis and micro-level evidence from value chain actors.

The food safety policy documents most directly governing SPS compliance are the NPFSIS (2014, 2024 revision), the National Food Safety and Quality Bill (2022), and the NSPRI Food Safety Policy (2024–2030) — all score Level 1 (gender-blind), addressing zero to one gender indicator. This means that the NPFSIS and NSPRI Food Safety policies has no provisions to address differences and complementarity in gender roles, gender-based constraints, no explicit recognition of women's roles in post-harvest activities, and no mechanisms to ensure that women, who perform post-harvest handling tasks such as drying, sorting, and storage are reached with training, resources, or decision-making opportunities. As a result, the policies are unable to support women actors whose practices determine compliance outcomes. These policies are designed without gender-responsive implementation mechanisms, making it difficult for the women who manage daily post-harvest operations to access, understand, or benefit from the regulations they are expected to follow.

ii. Sanitary and Phytosanitary (SPS) Knowledge Gaps and Systemic Drivers of Non-Compliance

Maximum Residue Levels (MRLs) awareness and safe pesticide practices are low among both men and women, compounded by a near-collapsed public extension system. Unsafe practices such as herbicide use for artificial drying, bare-ground drying, and misuse of storage chemicals such as phostoxin (aluminium phosphide-based, releasing toxic phosphine gas) are rational coping mechanisms in a system with few affordable alternatives, high drudgery, and market incentives that prioritize quantity over quality. Women possess valuable indigenous pest control knowledge including the use of neem (*Azadirachta indica*) extracts and wood ash that has been documented as traditional alternatives to synthetic pesticides¹. Neem, applied using methods such as the broom technique, has been used by smallholder farmers in northern Nigeria to manage cowpea and grains pests including pod borers (*Maruca testulalis*) and flower thrips (*Megalurothrips sjostedti*). Wood ash, similarly, has been identified as an indigenous method for protecting stored grains and legumes, with recent studies showing that 65% of indigenous method users are women (Udousung et al., 2025).

Despite the efficacy and accessibility of these practices, there is a gap: women lack guidance on systematically adapting indigenous pest control methods to meet Sanitary and Phytosanitary (SPS) compliance requirements for export-oriented crops such as sesame and cowpea. While neem- and wood ash treatments leave no chemical residues that violate maximum residue limits (MRLs)—a key advantage over synthetic pesticides, there are no targeted protocols, extension and communication materials, trained risk communicators or quality control standards that can help women understand risks of synthetic herbicides and how to apply indigenous methods effectively and with documented efficacy. Without such guidance, indigenous knowledge remains underutilized, limiting women's and men's ability to capture value from SPS-compliant production.

The policy environment structurally reinforces these gaps. Despite the National Agricultural Extension Policy (NEP) (2017) scoring high on the GAPo and legislating for female extension agents, gender-sensitive materials, and flexible scheduling, only 6–15% of Nigeria's extension workers are women. Socio-cultural norms in Jigawa and Nasarawa further exclude women from interacting with male agents, making legal provisions irrelevant in practice. The Agriculture Promotion Policy (APP) (2015–2020), which prioritized sesame for export quality, acknowledged gender equality as a cross-cutting objective but provided no specific measures, rendering its quality ambitions dependent on women's labor while offering women no targeted support.

iii. Barriers to Women's Participation and Benefit

¹ Heinrich Böll Stiftung Nigeria. (2024). Organic pest control and soil health manual: Indigenous knowledge and sustainable agriculture in Nigeria. Abuja: Heinrich Böll Stiftung Nigeria. <https://ng.boell.org/en/2025/09/05/organic-pest-control-and-soil-health-manual>

Women face compounding constraints that limit their empowerment, agency as compliance actors, and their ability to benefit from value chain improvements. Gendered daily activity profiles show women starting 1–1.5 hours earlier than men, leaving little flexibility for standard-hours training. Restricted mobility (more pronounced in northern states), lower smart phone and productive asset ownership, and norms that prioritize men in extension delivery curtail access to market information, SPS training, and profitable aggregation. Limited capital prevents investment in basic SPS infrastructure — tarpaulins, Purdue Improved Crop (PICS) Storage bags — even where knowledge and motivation exist. Low digital literacy marginalizes women from the traceability and quality assurance mechanisms increasingly required by export buyers.

The National Gender Policy in Agriculture (NGPA) a comprehensive framework launched by the Federal Government of Nigeria in 2019 (with revisions for 2025–2030) NGPA (2025–2030) is the first comprehensively gender-responsive and transformative agricultural policy Nigeria has developed, with dedicated budget lines from 2026 and National Agricultural Technology and Innovation Policy (NATIP) (2022–2027), which explicitly prioritizes sesame and cowpea and includes strong provisions on gendered access, control, and benefits, represent transformative frameworks. Whether they translate into state-level ADP reform, sex and gender-disaggregated monitoring, and resourced gender desks in Benue, Nasarawa, and Jigawa remains the critical test.

iv. Enabling Factors, State-Level Initiatives, and Opportunities

Women demonstrate strong motivation to learn and act as change agents for household health and income. Farmers' associations, women's cooperatives, and church-based savings groups are trusted and preferred channels for training and information. Several existing initiatives offer both models and partnership entry points:

- **International Fund for Agricultural Development - Value Chain Development Programme (IFAD VCDP) in Benue:** Targeted women producers, processors, and marketers in staple value chains; offers transferable lessons on group formation, savings mobilization, and market linkage for sesame.
- **Nasarawa Agricultural Development Programme - NADP and Farming Systems Support Services - FSSS gender analysis in Nassarawa:** Generated evidence on women's exclusion from seed trials and extension, with gender-responsive recommendations directly applicable to this project. The NADP/FSSS programme recommends two gender-responsive interventions: decentralized, gender-sensitive training delivered at village level through women-to-women extension agents and aligned with women's care responsibilities; and quality seed-export fairs, which can be applied for sesame and cowpea, where women farmers association can regularly and directly connect and negotiate price with certified buyers and input suppliers to build sustained market linkages and reinforce SPS compliance.
- **WACOT Limited organic sesame initiative (Jigawa and Kebbi):** WACOT Organic Sesame refers to high-quality, pesticide-free, and fertilizer-free sesame seeds produced in Nigeria by WACOT Limited (a subsidiary of the Tropical General Investments (TGI) Group). This product is cultivated using sustainable agricultural practices and certified by ECOCERT for compliance with international organic standards, specifically for export to European, North American, and Asian markets.²The EUR 1.26 million programme supported by the German Development Finance Institution (DEG) trained 3,500 farmers in organic production, financial inclusion, and weather alerts, backed by 100% offtake agreements at premium prices. While this initiative demonstrates that private-sector partnerships can advance SPS compliance at scale, it does not explicitly articulate gender-specific recommendations. Nevertheless, it offers a strong foundation for the current project particularly in northern Nigeria by intentionally integrating gender-responsive training, women's market linkages, and equitable participation structures for quality product offtake at premium price.
- **Kogi State Government and NEPC workshop:** In Kogi State, the government, in collaboration with the Nigerian Export Promotion Council (NEPC), convened a women-targeted capacity-building³ workshop titled "Empowering Women Sesame Producers for Global Markets Through Good Agricultural Practices (GAP)" (Kogi State Government, 2025). Held at the Technology Incubation Centre, Lokoja, the workshop equipped women sesame producers with practical skills in value addition, quality maintenance, and export standards including hands-on exposure to de-stoner machines to remove physical contaminants and meet international cleanliness requirements. Gender-specific benefits included direct access to export market information, strengthened negotiating power with buyers, and the formation of women-led producer groups

² BusinessDay Nigeria. (2025, October 21). WACOT gets €1.26m grant to empower 3,500 sesame farmers. Retrieved from <https://businessday.ng/agriculture/article/wacot-gets-e1-26m-grant-to-empower-3500-sesame-farmers/>

³ Kogi State Government. (2025, August 14). Kogi Government reaffirms support for women in sesame production. Retrieved from <https://mainbackup.kogistate.gov.ng/kogi-government-reaffirms-support-for-women-in-sesame-production/>

for collective marketing. The workshop also served as a platform for women to engage directly with regulators and exporters, reducing information asymmetry that typically excludes them from high-value value chains. This model is replicable in Benue and Nasarawa, combining government leadership, extension partnership for targeted women's outreach, and practical digital and on-site SPS training elements readily adaptable to sesame and cowpea value chains

- **Federal Sovereign AgroTrade System (SAS) platform - Federal Ministry of Agriculture and Food Security and the Nigerian Women for Agricultural Progressive and Development Initiative (FMAFS-NWAPDI):** Designed to empower rural farmers by connecting them directly to buyers. Digital marketplace integrating AgriXchange, NWAPDI Grow (microloans, cooperative finance), AgriCert (quality certification), and FarmAssure — a potential pathway to quality certification for women's sesame cooperatives while reducing dependence on exploitative middlepersons.

D. Conclusions and Recommendations

Achieving SPS compliance and upgrading the sustainable sesame value chain require addressing gender inequalities and mainstreaming gender preferences. Women's central role in quality-determining tasks such as drying, threshing, cleaning, and sorting must be matched by equitable access to productive resources, information, and market rewards. Interventions must be deliberately gender-responsive to avoid reinforcing existing disparities.

The policy environment offers both a mandate and an advocacy opportunity. The NGPA (2025–2030) and NATIP (2022–2027) provide transformative gender provisions that this project should formally align with by embedding their core principles such as mandatory gender-disaggregated data collection, dedicated budget lines for women's activities, and explicit targets for women's participation in extension, training and value chain development into the project's training curricula, monitoring frameworks, and partnership agreements. Simultaneously, the gender-blind food safety framework exemplified by the National Policy on Food Safety and Its Implementation Strategy (NPFSS) 2014 (and its 2024 revision) and the National Food Safety and Quality Bill 2022 presents a clear advocacy opportunity. Key gaps include: no explicit recognition of women as primary actors in post-harvest handling; no requirement for sex-disaggregated data collection; no provisions for women-inclusive training or decentralized extension; no consideration of women's care responsibilities or mobility constraints; no integration of indigenous pest control knowledge (e.g., neem, ash) as a compliance pathway; and no budget lines or performance indicators targeting women's participation in SPS compliance activities. The project can demonstrate how integrating gender-responsive approaches into SPS compliance interventions such as collecting sex-disaggregated data, delivering women-inclusive training, adapting extension to women's schedules and literacy levels, and documenting impact stories directly addresses these gaps, positioning the project as a practical model for making food safety governance more inclusive.

Recommendations are structured under four RBET pillars — Reach, Benefit, Empower, and Transform — each grounded in specific GAPo-identified policy anchors and translated into concrete project-level actions.

Reach

Aligned with the NEP (2017, 26/32 GAPo) and the NGPA (2025–2030, 32/32), the Reach pillar calls for **routing all project outreach through women's cooperatives and farmers' associations**, which women consistently identify as their most trusted and accessible channels. The project can partner with established organizations such as the Small-Scale Women Farmers Organisation of Nigeria (SWOFON), the Idera Olori Women Co-operative & Credit Society, and Beniseed Apex cooperatives with documented engagement in sesame processing sites alongside civil society partners including the Alliance for Action on Pesticides in Nigeria (AAPN), ActionAid Nigeria, Misereor Nigeria, Christian Aid, and the Women Empowerment Program (WEP) to leverage their existing community networks and trusted relationships. **Training sessions must be mandatory, women-only, and scheduled at the community level during low-labor seasons. All materials should use simple pictorial formats in local languages.** In northern states such as Jigawa, Kano, and Yobe, where cultural norms on mobility restrict women's interactions with male extension agents, **the project should collaborate with, and deploy female extension and lead farmers volunteers, trained as risk communicators, complemented by phone-based outreach with digital advisory Apps like herbicide calculator.** The documented evidence from the FSSS gender analysis and NADP work in Nasarawa should be actively used to accelerate state adoption of gender-responsive extension scheduling, rather than waiting for institutional reform to occur independently.

Commented [d1]: • Small-Scale Women Farmers Organisation of Nigeria (SWOFON) – A national umbrella organization active across all 36 states, with documented partnerships with research institutes to promote good farming practices and enhance productivity for women farmers. SWOFON has been central to advocacy for gender-inclusive agricultural policies and direct engagement with the Ministry of Agriculture.

• Idera Olori Women Co-operative & Credit Society – A women-led cooperative engaged in processing sites for sesame seeds in Nigeria, supported by the Standards and Trade Development Facility (STDF) and the International Trade Centre (ITC).

• Beniseed Apex – A cooperative employed on sesame processing sites, operating alongside Idera Olori, with documented engagement in structured value chain activities.

• Alliance for Action on Pesticides in Nigeria (AAPN) – A coalition that works on pesticide safety and agroecological alternatives, with direct relevance to SPS compliance training for sesame and cowpea farmers.

• ActionAid Nigeria – Active across all 36 states, with documented programs supporting over two million smallholder women farmers through sustainable agriculture, women's land rights, and governance accountability initiatives.

• Misereor Nigeria – The German Catholic development organization operates in Nigeria with a focus on community-led development, trauma-sensitive programming, and conflict resolution; while primarily known for its work on herder–farmer conflict, its deep community networks in Benue and other states offer trusted entry points.

• Christian Aid Nigeria – Active in Nigeria with a focus on tackling poverty, strengthening essential services, and promoting equality; the organization works through local partners and community-based structures.



Benefit

Drawing on the APP (2015–2020), the ERGP, the NGPA (2025–2030), and the WACOT/DEG organic sesame model in Jigawa and Kebbi, the benefit pillar requires developing incentive structures that explicitly recognize and reward women's quality-critical labor — the cleaning, sorting, and drying that directly determine whether sesame meets MRL standards. A premium payment scheme for clean sesame open to all suppliers meeting the quality standard but with targeted support to enable women's groups to participate would serve as a valuable complementary incentive. Women-led aggregation should be actively supported, and cooperatives linked to NEPC export channels and the FMAD/NWAPDI Sovereign AgroTrade System, whose AgriXchange, AgriCert, and NWAPDI Grow components offer direct pathways to quality certification and cooperative finance.

Benefits should be tracked using indicators women themselves prioritize control over sesame income, acquisition of processing or storage assets such as de-stoner, reduced drudgery and time burden, a stronger collective voice in group decision-making, and improved access to training and market information. Women's SPS compliance training should be framed explicitly as an export-enhancing investment citing the APP's quality brand objectives and the ERGP's export competitiveness agenda not solely as a social equity measure. To operationalize this framing within the project's scope, communication materials should be developed that directly link women's roles and compliance to national trade goals, while training content is co-designed with private-sector partners such as WACOT or exporters like OLAMS, to ensure it addresses the specific quality parameters demanded by international buyers. Government agencies, including NEPC and state coordinating office such as Kogi State Commodity Exchange, Export Promotion and Market Development Agency (KOSCEPA) and ADPs, can be invited to co-facilitate sessions, reinforcing how SPS compliance advances their own mandates. Case studies and success stories from existing initiatives (e.g., WACOT's organic sesame programme) should be used to illustrate the market advantages of compliance, and training modules should equip women with knowledge on how to identify certified buyers and understand quality contracts without requiring the project to broker direct sales or financing. This same framing can be incorporated into policy advocacy and institutionalized through formal acknowledgment mechanisms, such as joint commitment letters with state ADPs and NEPC, to secure sustained political and private-sector buy-in.

Empower

Grounded in NATIP (2022–2027), the NASP (2022), the NFNP (2016), and the IFAD VCDP experience in Benue, the Empower pillar focuses on building women's practical agency across the value chain. Post-harvest technologies should be co-designed with women rather than selected and imposed, ensuring that the tools address the drudgery points women themselves identify. For sesame (and cowpea), the most burdensome activities for women include manual threshing (beating cowpea pods or sesame stalks), winnowing and cleaning to remove stones and chaff, a task that can be partially mechanized with de-stoner machines spreading and turning grain on drying mats repeatedly throughout the day, and the repetitive lifting and stacking of filled bags during storage. These tasks are physically demanding and directly affect SPS outcomes: inadequate cleaning introduces stones and physical contaminants, improper drying raises aflatoxin risk, and poor storage invites pest re-infestation. To ensure that post-harvest technologies genuinely alleviate women's burdens, the project can communicate and facilitate collaborative and inclusive trainings with relevant institutions—such as the Nigerian Stored Products Research Institute (NSPRI) to co-design showcase and deliver hands-on training for women farmers and local fabricators on the local fabrication of simple, mobile de-stoners. This collaborative process includes convening women-only evaluator groups to test improved threshing stands, pedal-operated winnowers, mobile de-stoner machines adapted for women's use, and lightweight drying racks. Structured feedback loops will ensure that women's modifications and preferences directly inform design refinements before any scaling takes place. Additionally, the project can partner with fabricators and women's cooperatives—such as the Small-Scale Women Farmers Organization of Nigeria (SWOFON) or Idera Olori Women Co-operative & Credit Society to host practical, hands-on design and operations workshops. This approach guarantees that the final tools are not only effective but also culturally acceptable, affordable, and repairable using locally available materials. By placing women's lived experience at the center of technology development, the project strengthens both SPS compliance and the long-term sustainability of its interventions.

Selected women lead farmers should be trained as risk communicators and peer educators on SPS practices, creating a community-embedded extension multiplier that does not depend on under-resourced state extension services. Joint spousal decision-making training on input use and safe pesticide application is essential, given that men currently control pesticide purchasing while women bear the consequences of unsafe use. NATIP's Special Agro-Industrial Processing Zones offer a longer-term structural pathway for women to transition from low-income processing labor to agripreneurship, with access to business development training on cold chain logistics,



packaging, and marketing. Improved sesame varieties should be channeled explicitly to women, using WACOT's Jigawa and Kebbi offtake model. WACOT Limited, as the implementing partner of the DEG-supported organic sesame initiative in Jigawa and Kebbi, holds direct decision power over which farmers receive certified seeds and training, operating through its registered farmer cooperatives and 100% offtake agreement model. The NASP provides a mandate to encourage women and youth participation in the seed value chain, but translating this into practice depends on private-sector partners like WACOT to intentionally target women through their cooperative networks and community sensitization drives. Therefore, replicating WACOT's model requires securing commitment from seed companies, off-takers, and state extension services to prioritize women in improved seed distribution and premium purchase agreements.

The IFAD Value Chain Development Programme (VCDP) in Benue State has tested and refined a Commodity Alliance Forum (CAF) approach, which serves as a farmer-centred coordination platform connecting farmers, processors, off-takers, financiers, and government agencies under a Public-Private-Producers Partnership (4Ps) model. Group formation under VCDP is implemented through registered farmers' organizations and cooperatives, which receive capacity-building support in governance, business management, and linkage to markets and financial services. Savings mobilization is integrated into the programme's financial literacy training, delivered to over 600 farmers across five Benue LGAs (Agatu, Gwer-West, Guma, Gwer-East, and Kwande) with support from Sterling Bank and Winichfarms, covering budgeting, goal setting, savings, credit use, and insurance. The CAF model facilitates collective savings groups and access to credit through partnerships with commercial banks. This tested approach rooted in structured farmer organizations, financial literacy embedded in group formation, and formal banking linkages offers a replicable template that can be communicated by this project to other projects or interested partners for complementary efforts and to improve quality in Benue.

Transform

The Transform pillar addresses the structural and systemic drivers of women's exclusion, anchored in the NGPA (2025–2030) and the NEP (2017), with the gender-blind food safety frameworks — NPFSIS (2014, 2024) and NSPRI-FSP (2024–2030) — as explicit advocacy targets. The key contribution this project can make to long-term systemic change is to continue to generate sex-disaggregated, value-chain-specific food safety evidence that these frameworks currently lack, and to communicate it at every opportunity and engagement with NAFDAC, NSPRI, and FMAFS. Gender-responsive extension approaches should be institutionalized within state ADPs in Benue and Nasarawa by citing the NEP's legislative mandate as a binding directive, not a project preference. This means embedding these approaches into ADPs' formal systems through concrete measures: issuing standing circulars that mandate women-only sessions and community-based scheduling; integrating dedicated budget lines and gender-responsive performance indicators into annual work plans; training ADP personnel to deliver and monitor these services as part of their core responsibilities; and capturing sex-disaggregated data in routine reporting. Communicating these practices ensures they outlast project timelines and become standard operations. Community dialogues engaging male champions, religious leaders, and community elders should be conducted to shift the norms that restrict women's access to lucrative chain segments, replicating the modality demonstrated by the Kogi State Government and NEPC's 'Empowering Women Sesame Producers for Global Markets' workshop — a government-convened, multi-stakeholder, women-targeted approach that has demonstrated political feasibility at the state level.

Traceability models should combine low-tech tools such as colour-coded sacks and pictorial record-keeping with progressive digitalization aligned with NDAS gender provisions, ensuring women are included in quality assurance systems rather than excluded by them. Finally, the project should formally align its gender strategy with the NGPA (2025–2030), documenting how each activity contributes to its implementation at the national, state, and community levels, both to strengthen accountability and to build the NGPA's evidence base for monitoring. At the national level, the project can provide data and lessons learned on gender-responsive SPS training processes; at the state level, it can support Benue and Nasarawa ADPs to adopt gender-responsive extension schedules and budget lines, directly fulfilling NGPA targets for institutional mainstreaming; and at the community level, it can operationalize the NGPA's women's participation goals through women-only training, decentralized extension, and linkages with trusted cooperatives. These contributions can enhance SPS compliance by ensuring women receive practical, accessible knowledge on quality standards and market requirements, while simultaneously advancing gender mainstreaming by embedding women's roles into the design and delivery of agricultural services.



1.0 BACKGROUND

1.1 Study Rationale and Link to Project Goals

This study is part of a broader project aimed at improving sanitary and phytosanitary (SPS) compliance with international standards and enhancing Nigeria's export capacity and value chains. The project involves strategic interventions to address systemic challenges hindering Nigeria's agricultural exports, specifically the frequent rejections of sesame in international markets due to non-compliance with Sanitary and Phytosanitary (SPS) measures and Maximum Residue Levels (MRLs) for pesticides. Nigerian sesame exports are facing significant rejections in key markets, including the European Union (EU), Japan, and Türkiye, due to excessive pesticide residues and Salmonella contamination. These challenges threaten Nigeria's economic potential and damage the country's global reputation for sesame. It is crucial to address these issues to rebuild trust in our products⁴ (1, 36).

As part of this project, relevant national and sub-national authorities, stakeholders and actors involved in food quality and safety regulation are being mapped and engaged. Data are being collected on the standards applied (including SPS protocols and maximum residue limits), existing control and monitoring processes, and the roles, capacities, and needs of relevant institutions and value chain actors.

This project recognizes that technical compliance cannot be achieved in isolation; it requires a deep understanding of the people who power the value chain. Qualitative assessment methods and gender analysis generate evidence that informs the project's interventions. The decision to include a gender analysis in this project reflects recognition that women play a central role in Nigeria's agricultural and oilseed sectors. Recent estimates suggest that women make up around three-quarters of the farming population nationally (37). Regional studies of sesame systems have shown that women have historically been the primary producers and remain pivotal as processors and traders in sesame value chains (14). Despite their numerical dominance, women often occupy the nodes of the chain, handling labour-intensive tasks such as weeding, harvesting, threshing, and manual cleaning, where the risk of microbial contamination (e.g., Salmonella) is highest.

Within the project framework, a gender analysis of the sesame value chain is essential to ensure that interventions in standards, certification, market access, and quality upgrading are inclusive, equitable, and responsive to the differentiated realities of women and men producers, processors, traders, and workers along the chain. This study was proposed to move beyond "gender-exploitative and gender-blind" interventions, ensuring that the targeted interventions under the project, including training and communication campaigns, are responsive to Nigerian sesame exports are facing significant challenges in key markets like the European Union, Japan, and Türkiye, primarily due to high levels of pesticide residues and microbial contamination, particularly Salmonella. These border rejections highlight the urgent need to comply with international food safety standards, particularly Sanitary and Phytosanitary (SPS) regulations. Addressing these issues is crucial to enhancing Nigeria's agricultural export capacity and meeting global market demands to the specific socioeconomic realities and constraints faced by women and do not reinforce existing inequalities.

Sesame (*Sesamum indicum* L.), commonly known in West Africa and Nigeria as "beniseed" or "benni-seed," is one of the world's oldest domesticated oilseed crops, with origins generally traced to Africa and early diffusion through West Asia and Asia (1,18,17,19). Historical and ethnobotanical accounts suggest that the term "benni" (variously spelt benne/beni/benni) is derived from West African languages and entered English via the Atlantic slave trade; the crop and its seeds were widely known as "benniseed" in the American South, reflecting this African

⁴Chemonics International Inc (2002). *Overview of the Nigerian Sesame Industry*. A paper prepared for The United States Agency for International Development (USAID)/Nigeria RAISE IQC Contract No. PCE-I-00-99-00003-00 Task Order No. 812. Washington, DC: Chemonics International Inc⁽¹⁾

³⁶Olubunmi O. Alawode (2025): Trend and Implications of Nigerian Crop Produce Rejection by Destination Countries (2012-2022), *International Journal of Business & Law Research* 13(2):8-17, April-June, 2025. doi:10.5281/zenodo.15175415⁽³⁶⁾

linguistic and culinary heritage (16). In Nigeria, “beniseed” has long been used in local cuisines and small-scale oil extraction and appears in early agricultural station and extension records as the common name for sesame (5, 19). Over time, the term has persisted in farmer discourse and policy documents, co-existing with the botanical name *Sesamum indicum* and the globally recognized term “sesame.”

Globally, sesame is valued for its high oil content (approximately 50–52%) and protein (17–25%), as well as the stability and healthfulness of its oil, which are attributed to natural antioxidants such as sesamol and sesamolinal (1, 6, 12). It has been called the “queen of oilseeds” for its superior oil quality and diverse applications in food, industry, pharmaceuticals, and cosmetics (1, 18, 12). In recent decades, rising health consciousness and demand for plant-based oils have driven rapid growth in the international sesame market, particularly in bakery, confectionery, ready-to-eat foods, and high-value oil applications (1, 2, 4). World sesame production exceeded 5.5 million tons in 2017, with about 57% produced in Africa and about 40% in Asia (3, 36). Africa’s leading producers and exporters include Nigeria, Tanzania, Ethiopia, Sudan, Burkina Faso, and Mali, reflecting the crop’s strategic role in smallholder incomes and foreign exchange earnings in the region (1, 9, 12).

FAO data indicate that in 2022, Nigeria produced approximately 450,000 tons of sesame and exported nearly 300,000 tons, generating export earnings of around USD 331 million, and placing sesame among the country’s top agricultural export commodities (3, 36). Sesame is ranked as one of Nigeria’s leading export crops, second only to cocoa in some recent export tallies. It contributes to agricultural export revenues and diversification away from petroleum (3, 8, 13, 36). Time-series econometric analysis for 1981–2022 shows a strong and statistically significant positive relationship between sesame output and both agricultural GDP and real GDP, underscoring the crop’s macro-economic importance and potential to drive broader growth through an expanded and better-governed value chain (3, 13, 37).

Within Nigeria, sesame/beniseed is widely grown across the savanna agro-ecological zones, especially in central and northern states such as Benue, Nasarawa, Kaduna, Jigawa, Kano, Katsina, Taraba, Gombe, Plateau, Kogi, Yobe and Borno, and increasingly in some southern areas (3, 11, 16, 19). Production is dominated by smallholder farmers cultivating 1 to 4 hectares, often intercropping with staples such as sorghum, maize and groundnut, and using relatively low external inputs (5, 6, 7, 16). Studies across Katsina, Yobe, Taraba, Bauchi and Kogi states show that sesame is a profitable cash crop that improves rural livelihoods, with positive gross margins, attractive benefit–cost ratios and significant contributions to household assets such as housing, education, transport and livestock (5, 15, 19, 16). At the same time, farmers face substantial constraints, including limited access to improved seeds, pests and diseases, poor extension support, inadequate storage and post-harvest handling, weak bargaining power vis-à-vis middlemen, poor rural roads, and limited access to affordable credit (5, 7, 8, 9).

The Nigerian sesame value chain comprises a complex network of actors: women and men smallholder farmers (both indigenous and migrant), family and hired laborers, small- and medium-scale processors (manual and mechanized), village collectors and local buying agents, traders and aggregators, cooperative societies, exporters and regulatory agencies overseeing quality, safety and trade (5, 7, 11). An empirical study from northern Nigeria suggests that traders and exporters currently exert control over pricing, market information, and quality requirements. At the same time, producers, especially smallholders, often sell to village collectors/aggregators, known as local buying agents (LBAs), under conditions of information asymmetry and limited negotiating power (6, 7, 10). Sesame is heavily oriented towards export. Estimates from African and Asian production systems suggest that up to 90–95% of marketed sesame volumes are destined for international markets, and Nigerian evidence highlights the crop’s centrality to export-led growth strategies (4, 7, 8, 13).

Growing global demand has intensified pressure on Nigerian producers and exporters to meet stringent quality, food safety and phytosanitary standards, including maximum residue limits (MRLs) for pesticides, aflatoxin thresholds, and various sanitary and phytosanitary (SPS) protocols (36). Recent analyses of Nigeria’s participation in global sesame trade emphasize that competitiveness is increasingly shaped not only by volumes and prices but also by compliance with international standards and the ability to deliver traceable, consistent, high-quality products (4, 8, 36). At the same time, various reports highlight that poor quality control, contamination, and non-compliance with food safety requirements have led to shipment rejections and reputational damage, resulting in lost income for producers, exporters, and the national economy (8, 4, 36). These dynamics make investment in regulatory systems, testing infrastructure, certification and value chain upgrading both an economic necessity and a risk-management imperative.



Therefore, the gender analysis and value chain development study is designed to inform strategic project interventions and ensure that changes in knowledge and practices generate equitable benefits for women and men across social groups and nodes of the chain. By integrating field-visit data collected by a rural development, gender and social science expert with mapping of relevant stakeholders/actors, the study seeks to provide holistic insight into how gender issues, roles, and access to agricultural productive resources shape participation and benefit outcomes in the sesame sector, and how inclusive and gender-responsive mainstreaming measures can reduce inequalities.

1.2 Introduction

Sesame/beniseed has undergone a profound transformation in West Africa and the Sahel over recent decades, shifting from a largely neglected “orphan crop” cultivated primarily by women for home consumption and local condiment use to a high-value commercial export commodity, often dominated by male producers and traders responding to booming international demand (1,17,12,14). In Niger, for example, mainly women on small plots, traditionally produced sesame. As export markets expanded and farm-gate prices rose, men with greater access to land, capital, and extension services increasingly took over large-scale production. At the same time, women were pushed towards lower-value, labor-intensive processing and petty trading (14). Similar patterns of gendered shifts in control over cash crops as they commercialize have been documented across multiple African value chains, raising concerns that export-oriented upgrading may inadvertently deepen gender inequalities unless explicit safeguards and gender-responsive measures are put in place.

In Nigeria, the sesame value chain is characterized by high participation from both women and men; however, their roles, constraints, and benefits differ along the chain and across regions. Evidence from northern states shows that sesame production and marketing are often numerically dominated by male farmers and traders, reflecting gendered land tenure systems and cultural norms that privilege men’s access to farmland, credit, information, and mobility (7, 5, 10). Yet women contribute substantially to land preparation, planting, weeding, harvesting, threshing, drying, and small-scale processing, and in some contexts manage their own plots or participate in local trading and processing micro-enterprises (7, 16, 19). Gendered divisions of labor and unequal access to productive resources thus shape who engages in which node (production, aggregation, transport, processing, or export), who bears which risks and costs, and who captures which share of the value-added benefits.

Global and regional studies indicate that sesame is often cultivated by smallholders on marginal lands, characterized by low input use and limited institutional support, making it a “default” coping strategy in the context of climate stress and shrinking landholdings (1, 2, 12, 14). This pattern has gendered implications: women and poorer households, who typically have weaker land rights and less access to irrigation or credit, are often concentrated in more marginal production environments and in low-return segments of the chain. Research from Niger shows that, despite having more cumulative experience in sesame cultivation than men, women have less access to land and production factors, and their trait preferences are more oriented towards value-added and marketing qualities (e.g. ease of dehulling, color, aroma) than towards yield-related traits prioritized by male producers (14). These findings underscore the need to integrate gender-specific preferences and constraints into sesame breeding, extension, and market development strategies.

In Nigeria, renewed interest in sesame as a foreign exchange earner has been driven by domestic economic pressures, notably the volatility of oil revenues, and by a national agenda for export diversification, as well as by robust global demand for sesame seed and oil (1, 3, 4, 8, 13). Studies of sesame’s macro-economic effects indicate that expanding the sesame industry could significantly boost Nigeria’s economic growth and the agricultural sector’s contribution to GDP, provided that institutional and infrastructural bottlenecks along the value chain are addressed (1, 3, 8, 13). At the micro level, analyses from Katsina, Yobe and Kogi show that sesame production can deliver substantial net farm incomes and improve farmers’ livelihood assets, including investments in housing, education, transport and livestock (5, 15, 16, 19). However, these gains are not automatic; marketing studies highlight the dominance of intermediaries in price setting, the prevalence of exploitative practices and information asymmetries, and the vulnerability of smallholder producers, especially those with limited education, weaker bargaining power or constrained mobility, to low farm-gate prices and volatile demand (7, 9, 10).

As international buyers increasingly demand traceable, high-quality, residue-compliant sesame, Nigeria faces both opportunities and challenges. On the one hand, quality upgrading and improved compliance with MRLs and SPS protocols can open higher-value markets and stabilize export earnings (1, 4, 8). On the other hand, compliance



regimes can impose new costs, knowledge requirements, certification and compliance criteria, as well as risks, on producers, processors, and traders, which may disproportionately affect women and more marginalized groups if not carefully designed. Tasks such as pesticide application, post-harvest handling, sorting, cleaning, and storage, where women often predominate, are closely linked to food safety and quality outcomes. Yet women frequently have less access to training, equipment, protective gear, and decision-making authority over input use and marketing channels.

This report presents the findings of a qualitative assessment of gender analysis and value chain development for sesame in Nigeria, aiming to deepen understanding of the differentiated roles, gender issues, benefits, and systemic barriers faced by women stakeholders in the sesame value chain. Addressing gender issues, such as low women's involvement in relevant training and formal market opportunities, is vital for achieving equitable project outcomes (increased income), sustainable quality improvements, and improved livelihoods.

1.3 Study Objective

This study aims to provide an evidence base for designing and informing sesame value chain SPS compliance interventions that are economically viable, socially inclusive, and gender-responsive. It aims to contribute to the Nigerian sesame sector, which not only delivers higher incomes and foreign exchange but also advances women's access to training, markets, agency, and economic empowerment. By mainstreaming gender from the outset rather than treating it as an add-on, the broader project aims to help ensure that the transition towards higher-quality, safer, and more competitive sesame exports does not reinforce or deepen existing inequalities but instead supports more equitable, resilient, and sustainable rural livelihoods.

The goal is to enhance Nigeria's export competitiveness by generating current evidence and mainstreaming gender perspectives and insights to inform targeted interventions under the project, including capacity-building training and a communication campaign for actors (farmers, processors, marketers, input suppliers, aggregators, extension officers, and company staff) engaged in sesame value chain activities across communities in Nigeria, to improve the compliance of their products with international food safety standards (Codex MRLs and pathogenic micro-organisms such as Salmonella).

This qualitative assessment and gender analysis serve to deepen the understanding of the issues, underlying factors, social and gender dynamics that influence compliance and application of SPS standards, focusing on:

- Gender roles and division of labor: Mapping distinct responsibilities in production, harvest, and the post-harvest storage and market phase, where agri-chemical and PPPs applications often occur.
- Gendered awareness of and access to SPS information, and the compliant use of inputs such as herbicides and pesticides.
- Use of traceability systems and information, highlighting gender gaps in record keeping, digital literacy, certification access, and involvement in traceable supply chains in the selected states in Nigeria.
- Current livelihood status, aspirations, and perceived benefits of sesame to actors, to understand what benefits mean specifically to the women stakeholders in the selected states in Nigeria.
- Barriers and enabling factors for women's and men's involvement in food safety practices, traceability and quality control, training and benefits from sesame livelihoods.
- Present actionable recommendations on integrating gender equality and responsive measures to enhance women's benefits in the sesame value chains development in Nigeria

The study's scope encompasses both the on-farm and off-farm segments of the sesame value chain, from input provision and production through post-harvest handling, aggregation, processing, quality inspection, certification, and export marketing.

2.0 METHODOLOGY

2.1 Desk-Based Review

The study began with a desk-based review to frame the sesame value chain and the gender context in Nigeria and to inform the design of tools, sampling, and fieldwork. The review synthesized:

- National, regional and state-level agricultural statistics to situate sesame as a strategic export crop and to identify major producing regions and marketing corridors (1, 2, 17).
- Relevant sesame value chain studies in Nigeria that document key actors, stakeholders, governance, and bottlenecks, including work on value chain structure and actor roles (1, 3, 4, 5, 6, 7, 8, 9, 19, 20, 38).
- Recent literature on gender dynamics in agrifood value chains, including gender-sensitive value chain frameworks and mixed-methods approach (sex-disaggregated KIIs/FGDs, participatory tools) (14, 31, 32, 33, 37).
- Global and regional evidence on women's empowerment and gender gaps in agricultural value chains, and on how value chain interventions can (or fail to) improve women's economic outcomes (23–29, 37).

This desk review clarified: (i) why sesame is a priority crop; (ii) where Nigerian sesame production and marketing are most active; (iii) how gender inequalities manifest across stages; and (iv) which methodological lessons from other value-chain and gender studies could be adapted (e.g., gender-sensitive value-chain mapping and analysis, seasonal calendars, and problem-tree analysis). It also identified regional and specific evidence on sesame in Benue, Nasarawa, and other major producing States across Nigeria, particularly regarding gender roles and SPS/MRL awareness.

2.2 Pre-Field Phase: Tool Development and Validation

Building on the desk review and project objectives, the consultant developed a qualitative data-collection toolkit comprising:

- A gender-sensitive value chain analysis guide to map actors, functions, gendered roles, decision-making, and benefit distribution across sesame nodes, drawing on gender-sensitive VC frameworks and recent applications in agrifood value chains.
- Semi-structured KII guides tailored to different actor categories (women and men farmers, processors, traders, aggregators, agro-dealers, extension officers, exporters, breeders, and regulators).
- Participatory Rural Appraisal (PRA) tools adapted from recent gender-responsive and participatory value chain work:
 - Gendered daily activity clocks and seasonal calendars to capture time use, mobility constraints, and SPS-critical periods (31).
 - Problem-tree analysis to unpack root causes and effects of SPS non-compliance, market rejections, and gender-specific constraints (32).

Draft tools were reviewed internally by expert researchers and externally through targeted consultations with: (i) researchers working on breeding and value chains (sesame) in Nigeria; (ii) state-level extension officers; and (iii) lead farmers. Consultations took place during the pre-field phase via face-to-face meetings and telephone calls, focusing on sampling validation, the appropriateness of concepts, local terminology and interpretation, question sequencing, and the feasibility of participatory tools for actors with low literacy.

2.3 Historical and Contextual Rationale for Benue and Nasarawa

The pre-field phase also included a contextual review of sesame production and value chain development in Benue and Nasarawa. Both states lie in Nigeria's Middle Belt and have a comparative advantage for the project's focus crops: sesame, as major strategic producers and trading states (1, 3, 4, 38). Recent Nigerian and regional analyses highlight Benue–Nasarawa and neighboring states as part of a broader sesame expansion zone where smallholder production for export markets is growing, with strong engagement of rural women and men in production and trade (38).

For sesame, both states are consistently cited among Nigeria's largest producers, with high annual output and extensive land suitable for sesame cultivation (1, 38). Benue is widely recognized as a major sesame producer with profitable smallholder enterprises and strong commercialization potential. At the same time, Nasarawa and Benue are leading sesame states in national production statistics and value chain analyses. Recent cost–benefit and investment–viability studies in Benue confirm that sesame production is profitable and that farmers are increasingly investing in the enterprise, underscoring the crop's role as a growth driver in the state (29, 30).

Benue State was prioritized because:

- It is reported as a central sesame-producing state with high concentrations of smallholders cultivating sesame as a cash crop alongside staples, echoing patterns observed in Nasarawa state and other northern and Middle Belt sesame zones (1, 38).
- Previous project baseline work had reported a large sesame sample in Benue (38).
- From an operational and inclusion standpoint, Benue and Nasarawa also offer practical advantages: most farming communities and value chain actors can communicate in English and Nigerian Pidgin, in addition to local languages, which facilitates gender-sensitive qualitative research (KIIs, FGDs, participatory tools) without excessive reliance on multiple layers of translation.
- The state has a history of donor-supported value-chain and women's economic empowerment interventions (e.g. International Fund for Agricultural Development (IFAD)-Value Chain Development Programme (VCDP), which have targeted women producers, processors, and marketers in staple value chains and demonstrated the potential of value chain programmes to strengthen women's income, skills, and access to extension services (21).

Nasarawa was subsequently integrated based on field-generated evidence. Desk review and key informant insights underscored Nasarawa's role as an essential state for sesame aggregation and trading, connecting producers from Benue and other areas to national exporters. This mirrors findings from other Nigerian sesame corridors where specific LGAs and markets emerge as nodal points for aggregation, price setting, and interaction with exporters (1, 6, 9, 38). Including Nasarawa thus provided:

- A complementary perspective on downstream nodes (aggregation, wholesale, export-oriented processing), which are often more male-dominated and capital-intensive (6, 38).
- Insight into how gender shapes participation and benefit-sharing in marketing and aggregation, building on wider evidence that commercialization can reconfigure gender roles and shift control over lucrative nodes towards men (11, 12, 14).

2.4 Field Mission

2.4.1 Sampling Strategy and Site Selection

A multi-stage purposive sampling strategy was employed, informed by a desk review, consultations, and recent project baseline data. Consultations with sesame researchers, extension officers, and lead farmers were central at this stage, refining the list of active sesame local government areas (LGAs) and communities and validating the suitability of proposed sites for capturing diverse gendered experiences.

Planned sites and participants (ex-ante) included:

- Benue State – Guma LGA (38):
 - Udei community: known for intensive sesame cultivation, identified through the National Sesame Seed Association of Nigeria and state extension services as a key sesame cluster.
 - Daudu community/market: an important trading point for sesame and other crops, with active women and men traders.
- Makurdi (Benue State capital): agro-dealers, extension services, and state-level actors (e.g. commodity associations, exporters' aggregation site and representatives).

Rationale for these choices included: (i) high sesame production and processing intensity; (ii) active local markets; (iii) presence of women's and mixed farmer/trader groups; and (iv) feasibility and security considerations. This approach mirrors value chain studies in other Nigerian contexts, where high-production LGAs and markets are purposely selected for in-depth analyses.



During the field mission, snowball sampling and community recommendations led to the addition of:

- Kadarku market (Benue–Nasarawa trade corridor): identified by FGD participants and key informants in Daudu and Udei as a critical sesame market where bulk trading and aggregation occur.
- Lafia (Nasarawa State): identified as a hub for aggregators and exporters purchasing sesame from Benue and surrounding states.

These additions were justified to ensure that:

- Both production-dominated and trade/aggregation-dominated sites were represented.
- The study captured gendered dynamics at points where quality requirements and SPS expectations are strongly communicated, typically markets and aggregation centres.

2.4.2 Participants and Data Collection Methods

Within each location, participants were purposively selected to ensure representation across gender, age, and value chain node, drawing on best practice in gender-sensitive value chain and participatory studies (2,4). Planned and actual participant categories included:

- Women and men sesame farmers and processors (indigenous and non-indigenous, where applicable).
- Women and men sesame traders (retailers, wholesalers, market-based aggregators).
- Aggregators/local buying agents (LBAs) supplying exporters.
- Agro-dealers (input suppliers).
- Leaders of farmers and processors associations, including women's groups.
- Community and market leaders.
- Extension officers and state-level officials.
- Staff of export companies and breeders/researchers linked to sesame.

Sex-disaggregated Focus Group Discussions (FGDs) were conducted to facilitate open discussions of roles, constraints, decision-making, and SPS practices without cross-gender inhibition, consistent with established protocols in gender and value chain research. Planned FGDs included:

1. Women farmers/processors – Udei.
2. Men farmers/processors – Udei.
3. Women traders – Daudu market.
4. Men traders – Kadarku market.

Key Informant Interviews (KIIs) targeted community leaders, association leaders, prominent traders and aggregators, agro-dealers, export company staff, researchers and experts, and extension officers. Approximately 16 KIIs were planned across Udei, Daudu, Kadarku, Lafia and Makurdi.

During implementation, the sampling frame was slightly adjusted as snowballing and community entry revealed additional relevant actors (e.g., specific aggregators, market coordinators, or company staff). Such adaptive sampling is recommended in qualitative studies to ensure that less visible but influential actors, particularly women and youth, are included.

Both KII and FGD were guided by participatory tools, including the Problem Tree, Daily Activity Clock, and Seasonal Calendar (31, 32, 33). All FGDs and KIIs employed pre-validated guides developed by the research team. Facilitation teams were mixed gender where possible, and community entry deliberately utilized trusted structures and women's networks (e.g., women market leaders, group leaders) to enhance women's comfort and agency, drawing on the research team's experiences and lessons from other Nigerian gender/value chain work. Interviews were scheduled at times that minimized conflicts with women's domestic and market responsibilities, as well as important community events (Such as Market days and burials) in line with best practice.

In addition, phone interviews were conducted with stakeholders who were unable to attend field sites (e.g., exporters, breeders, state-level officials) to broaden the perspective on SPS compliance, MRL awareness, and gendered barriers in more formal segments of the supply chain.

2.5 Post-Mission and Data Analysis

Post-mission analysis integrated both desk-based and field-generated data in a multi-step process:

1. Data management and transcription: Field notes, audio recordings, and photographs were organized by site and participant type; recordings were transcribed and translated where necessary.
2. Coding and thematic analysis: Data were coded along themes such as gendered roles, SPS/MRL awareness, quality practices; constraints experienced and opportunities.

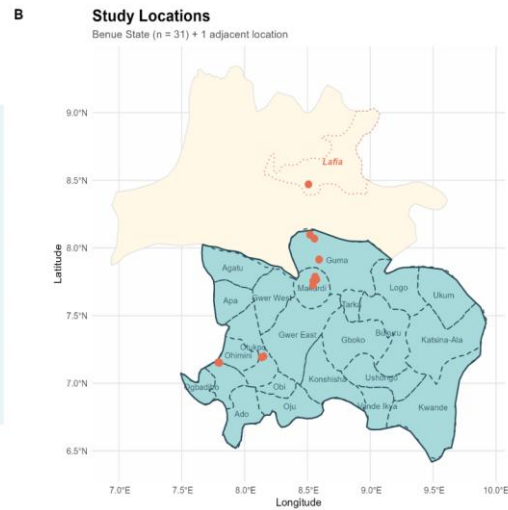
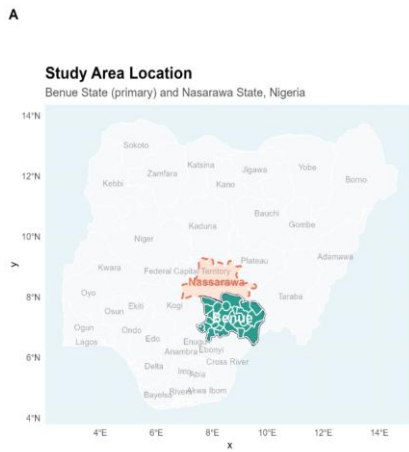
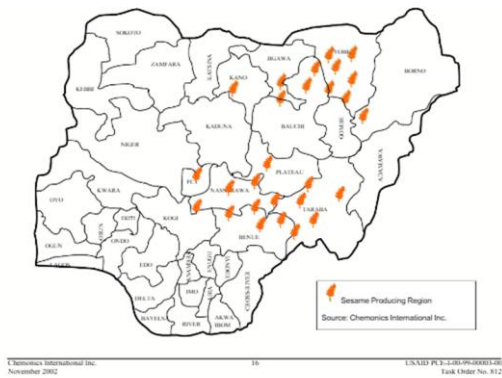


Figure 1: Map of Nigeria showing Sesame production states as well as the study states and locations of Key informant Interviews and Focus Group discussions

Table 1 - Sesame value chain stakeholders engaged in Guma, Lafia and Makurdi local government areas in Benue and Nasarawa states

	Type of stakeholder/participant (organisations, farmers, exporters, etc.)	(Udei, Daudu, Kadarku, Lafia communities/ markets) Number of participants		Comment
		Women	Men	
1	FGDs with Farmers/processors-Only	14	15	Conducted women's activity on 26 Nov. due to a burial event on 25
2	FGDs with Local traders/aggregators	13	14	Conducted in Daudu Market with women and Kadarku Market in Nasarawa with men
3	KIIs for farmer /processor	1	1	
4	KII Community leader		1	Igbam community
5	KII with community Aggregator/Bulk Trader/local buying agent (LBAs)		1	Travelled to Lafia in Nasarawa state to conduct an interview
6	KII with community Aggregator/Bulk Trader/Market committee/company trained local buying agent		2	Interview conducted in Udei and Daudu
7	KII Agro-dealers/input supplier		2	Interviews were conducted in the main agro-dealers market in Makurdi
8	KII Sesame staff company – OLAMS exporters		1	Phone Interview with OLAMS staff
9	KII extension officers	1		Director of Extension Services - BNARDA Office, Makurdi
10	KII Sesame breeder at the National Institute with the Sesame mandate		1	Phone Interview with Sesame breeder in National Cereal Research Institute - NCRI
	Total	29 (17 are above Age 35, 10 are between 25- 35years , and two are below 24)	38 (31 are above Age 35, 6 are between 25- 35years, and one are below 24)	

2.6 Policy Review: Gender in Agricultural Policy (GAPo) Analysis

A Gender in Agricultural Policy (GAPo) analysis was conducted in February 2026 to assess the extent to which gender and social inclusion are integrated across thirteen Nigerian agricultural, environmental, and food safety policy instruments. The policies analyzed were: the National Food Safety and Quality Bill (2022); the National Policy on Food Safety and Its Implementation Strategy (NPFSSIS, 2014); the Revised National Policy on Food Safety and Quality (2024); the Nigerian Stored Products Research Institute Food Safety Policy (NSPRI-FSP, 2024–2030); the National Policy on the Environment — Revised (NPE, 2016); the Agriculture Promotion Policy (APP, 2015–2020); the Economic Recovery and Growth Plan (ERGP); the National Agricultural Seed Policy (NASP); the Nigeria Digital Agriculture Strategy (NDAS, 2020–2030); the National Agricultural Extension Policy (NAEP, 2017); the National Gender Policy in Agriculture (NGPA, 2025–2030); the National Food and Nutrition Policy (NFNP, 2016); and the National Agricultural Technology and Innovation Policy (NATIP, 2022–2027). These instruments were selected because they collectively represent the most current and relevant policy frameworks governing agricultural development, food safety, seed systems, extension services, digital agriculture, and

environmental management in Nigeria, and together constitute the policy environment within which sesame and cowpea value chain actors — the majority of whom are women in post-harvest roles — operate.

The GAPo tool was applied through direct textual analysis of each policy document, tracing: (i) whether and how women and men in agriculture and food systems are mentioned; (ii) the extent to which gendered constraints and power relations are analyzed; and (iii) the specificity and resourcing of proposed actions, indicators, and institutional arrangements for gender equality, with particular reference to sesame and cowpea value chains. The analysis applied 23 core GAPo indicators, with additional thematic and policy area sub-indicators (a/b) bringing the total assessed to 32. These indicators cover dimensions including recognition of women's roles in agriculture and food systems; explicit policy objectives for gender equality; inclusion of measures addressing gender inequalities and discriminatory social norms; promotion of women's participation in policy processes; use of sex-disaggregated data; gender-responsive budgeting; and alignment with national and international gender mandates. Each policy was scored against this indicator set, producing a rating from Level 1 (gender-blind) to Level 5 (gender-transformative), with scores expressed as the number of indicators addressed out of 32. The GAPo scoring results and indicator-level findings directly inform the study's identification of policy gaps and entry points presented in Section 5. By linking the policy review results with primary data from fieldwork with value chain actors, the study provides both a macro-level policy diagnosis revealing the structural misalignment between food safety governance and the gendered reality of post-harvest labor and micro-level evidence from the women and men whose practices determine sesame and cowpea SPS compliance outcomes.

3.0 KEY RESULTS

3.1 Sesame Regional Production Zones and Value Chain Activities in Nigeria: Desk Review

In Nigeria, sesame cultivation covers approximately 500,000 hectares of farmland nationwide, concentrated in the northern and central regions of the country (Agusto & Co., 2025). A comprehensive analysis confirms that sesame production is concentrated in Northern States including Jigawa, Benue, and Nasarawa, with these regions collectively generating up to ₦1 trillion in export revenue in the year 2024. The broader sesame belt encompassing Bauchi, Benue, Jigawa, Kano, Kogi, Taraba, Niger, Nasarawa, and Katsina States supplies raw material to integrated processing facilities such as the SIMSICA® plant in Kano, which serves as a strategic aggregation and processing hub (BroadGrain Commodities, 2025).

Sesame production follows geographic segmentation based on variety types. The main production regions are divided into two primary zones: the white/raw sesame producing states and the brown mixed sesame producing states (Jang, 2022). The White/Raw Sesame Producing States are Benue, Taraba, and Nasarawa. These varieties command premium prices in international markets, particularly in Japan, Europe, and North America, where visual quality and uniform appearance are highly valued (BroadGrain Commodities, 2025). The Brown Mixed Sesame Producing States are Kano, Jigawa, and Katsina (Jang, 2022). These varieties are preferred for oil extraction, crushing, and industrial applications in markets such as China, Türkiye, and India (Gombella Integrated Services, 2026).

3.2 Regional Production Comparison across Major Producing States in Nigeria

Table 2 below compares production performance across the 12 sesame-producing states in Nigeria, ranked by estimated output volume. Data are synthesised from government agricultural performance surveys (NAERLS), state agricultural development programmes, USAID project studies, and peer-reviewed literature. State-level disaggregated official statistics are not publicly available in a single consolidated source; figures therefore represent best estimates for recent cropping seasons (2019–2022). States marked ★ were covered by the project field mission.

Jigawa leads sesame production among northern states, with an estimated 300,000 ha under cultivation, reflecting the crop's importance as a commercial cash crop in the semi-arid north, where it accounts for approximately 34% of cash crop area (JARDA, 2004). In contrast, Nassarawa and Benue, the project's field states, are part of the middle-belt "beniseed belt," where the crop is deeply embedded in smallholder farming systems and women play a more prominent role in post-harvest operations than in the male-dominated production dynamics of the far north. Yield performance is broadly similar across regions (600–730 kg/ha), remaining well below the technical potential of 1.0–1.5 t/ha, pointing to a systemic gap in input use and agronomic knowledge, regardless of geography. Kano's role as a processing hub (two of Nigeria's three sesame processing plants) underscores the importance of North-

West market linkages even for Middle Belt producers.

Table 2. Comparative Overview of Sesame Production across Major Producing States, Nigeria (est. 2019–2022)

Rank	State	Agro-Ecological Zone	Est. Area Harvested (ha)	Est. Production (MT)	Avg. Yield (kg/ha)	Primary Role in VC	Key Characteristics & Notes
1	Jigawa	NW / Sahel-Guinea	~300,000	~220,000	~730	Export / cash crop	Second-largest cash crop; Taura LGA alone exceeds 20,000 ha; large-scale commercial orientation; predominantly male workforce (≥95%); JARDA provides ADP support
2	Nassarawa ★	NC / Guinea Savanna	~270,000	~180,000	~670	Export / cash crop	Largest area share per some USAID sources; Doma is key collection hub; Makurdi (Benue) is secondary assembly point; women active in post-harvest & trade
3	Benue ★	NC / Derived & Guinea	~240,000	~160,000	~667	Export / cash crop; intercrop	Tiv Division historically dominant; Makurdi assembly centre; women prominent in labour, drying & cleaning; labour costs = ~87% of production cost
4	Taraba	NE / Guinea Savanna	~200,000	~130,000	~650	Export / cash crop	Only state with two sesame harvests/year (Aug & Oct); Wukari, Takum, Donga key LGAs; 48–70% of farmers on 1–2 ha
5	Yobe	NE / Sudan-Sahel	~120,000	~75,000	~625	Export / cash crop	Favoured by low rainfall & light soils; integrated in mixed farming; high male dominance in production
6	Borno	NE / Sudan-Sahel	~110,000	~70,000	~636	Export / dual use	Sesame thrives in semi-arid conditions; produced alongside millet & sorghum
7	Katsina	NW / Sudan Savanna	~90,000	~55,000	~611	Emerging export	Growing commercial interest; predominantly male producers; some women's cooperatives active in processing
8	Kano	NW / Guinea Savanna	~80,000	~50,000	~625	Dual use / processing	Two of Nigeria's three processing plants located in Kano; market aggregation role; high value-addition potential
9	Kebbi	NW /	~60,000	~36,000	~600	Emerging	RMADC programme

		Sudan Savanna					supported sesame expansion; women's groups active in post-harvest
10	Kogi	NC / Derived Savanna	~50,000	~30,000	~600	Domestic & export	Igbira Division historically important; overlap with beniseed (sesame) traditional production zones
11	Plateau	NC / Jos Plateau	~40,000	~24,000	~600	Domestic / smallholder	Cooler climate; smallholder-dominated; women play significant role in labour
12	Niger	NC / Guinea Savanna	~35,000	~20,000	~571	Domestic / emerging	Kwali area historically notable; overlap with soybean zones; mixed cropping predominant

Sources: JARDA (2004); USAID MARKETS (2009); NAERLS Agricultural Performance Surveys (2019–2021); Agriculture Nigeria / NIFST industry sources; peer-reviewed literature (Makama et al. 2011; Gani & Tunwari 2023; Mustapha 2022).

Notes: State-level production figures are estimates synthesised from multiple secondary sources as no single official disaggregated dataset is publicly available. Area and output figures reflect approximate averages for recent cropping seasons (2019–2022). Yield estimates (kg/ha) are derived from gross margin studies. NC = North-Central; NW = North-West; NE = North-East. ★ = states covered by field mission. Yellow rank shading = top 3 producers.

Regional Production Characteristics, Institutional Supports and Initiatives

The north-western zone, comprising Jigawa, Kano, and Katsina States, represents a sesame production corridor with distinctive characteristics. A stochastic production efficiency analysis conducted among sesame farmers in North West Nigeria by Oladele et al. (2025) revealed critical insights into production dynamics in this region. The study, involving 150 sesame producers, identified that significant predictors influencing technical efficiency include farm size, inputs, seed quality, fertilizer application, and labour availability. Socio-economic factors increasing technical efficiency include education, age, years of farming experience, household size, and extension contact. The three major constraints faced by sesame producers in this region include: (1) lack of credit, (2) lack of improved quality seeds, and (3) high cost of farm inputs (Oladele et al., 2025). These constraints are particularly acute for women farmers, who face additional barriers in accessing financial services and productive resources.

The north-central zone, particularly Benue State, has been designated by the Nigerian Export Promotion Council (NEPC) as a key hub for sesame seed production for export (Federal Ministry of Information and National Orientation, 2025). This designation follows high-level deliberations aimed at repositioning Nigeria's non-oil export sector as part of a broader strategy for sustainable economic development. The Benue Export Promotion Committee works in synergy with the Ministries of Industry, Trade and Investment, the Ministry of Agriculture, as well as development partners to mobilize farmers, processors, cooperatives, and exporters towards the production of export-quality sesame (Federal Ministry of Information and National Orientation, 2025).

In Nasarawa State, a ₦5 billion Public–Private Partnership (PPP) agreement between the Lower Benue River Basin Development Authority (LBRBDA) and Amisec industrial company is set to transform the Doma Dam Irrigation Area into a modern organic sesame production, processing, and export hub (Daily Trust, 2025). The project, known as AgroCity Doma, spans 1,000 hectares and features a fully integrated solar-powered irrigation system, as well as a processing plant with the capacity to handle 10 metric tons of sesame seeds per hour. More than 1,000 local farmers are expected to benefit directly from this initiative, which is projected to generate up to \$7 million annually from organic sesame seed exports (Daily Trust, 2025).

Niger State is emerging as a strategic focal point for sesame value chain development through collaboration between the Raw Materials Research and Development Council (RMRDC) and the Nigerian Export Promotion Council (NEPC) (Raw Materials Research and Development Council, 2025). Both agencies are exploring opportunities to establish dedicated raw material clusters for sesame, leveraging RMRDC's research on sustainable harvesting and NEPC's market-driven training for SMEs. The Commodities Aggregate Cleaning Center



in Minna has already demonstrated success in revolutionizing sesame processing and improving export readiness (Raw Materials Research and Development Council, 2025).

The north-eastern zone, including Taraba, Bauchi, and Gombe States, forms an integral part of Nigeria's sesame production landscape. These states contribute to national output, benefiting from suitable soil conditions and well-established farming practices (Jang, 2022). Taraba State, in particular, is recognized as a major producer of white sesame varieties, complementing production from Benue and Nasarawa (Jang, 2022).

Across all producing regions, sesame cultivation is dominated by smallholder farmers operating on plots ranging from 1 to 4 hectares (Agusto & Co., 2025). A PhD study by Adeyeye (2023) examining agricultural value chain optimization among smallholder farmers in Nigeria revealed that household characteristics influence value chain outcomes. For sesame farmers, the size of the household, monthly income, years of farming experience, sesame yield, land area dedicated to cultivation, and inflation rate have crucial impacts on value chain optimization. Additionally, monthly income, cost of improved seeds, fertilizers, and labor play significant roles in determining production costs during economic instability (Adeyeye, 2023).

Regional disparities in processing infrastructure are notable. The SIMSICA® processing facility in Kano represents a concentration of advanced processing capacity in the north-western zone (BroadGrain Commodities, 2025). Built on a 35,000 m² site, this state-of-the-art facility integrates advanced European processing lines including Cimbria, Westrup, and dual Bühler color sorters supported by air-screen machines, gravity tables, and de-stoners. With a total storage capacity exceeding 32,000 metric tons, SIMSICA® ensures consistent year-round procurement, cleaning, grading, color sorting, and containerized export of high-purity Nigerian sesame seeds (BroadGrain Commodities, 2025).

In contrast, the north-central zone is witnessing emerging investments such as the Doma AgroCity project in Nasarawa (Daily Trust, 2025). Niger State's Commodities Aggregate Cleaning Center in Minna provides another model for decentralized processing infrastructure (Raw Materials Research and Development Council, 2025). These regional variations in processing capacity have implications for farmers' market access, price realization, and inclusion in export value chains.

Regional production patterns also influence market channels and export destinations. White sesame flows to premium markets in Japan, South Korea, Europe, and North America, while Brown mixed sesame for oil extraction and industrial processing are exported to China, Turkey, and India (Gombella Integrated Services, 2026). Turkiye functions as a major re-export and processing hub for Nigerian sesame, with much of the imported volume processed into tahini, halva, and other sesame-based products for re-export to Europe (Gombella Integrated Services, 2026). China's extensive food-processing and oil-producing industries absorb large volumes of Nigerian sesame, often for oil extraction, paste production, and re-export (Gombella Integrated Services, 2026). Japan stands out as a premium market for high-quality sesame seeds, prioritizing exceptionally clean, uniform, and low-moisture seeds (Jang, 2022).

While comprehensive gender-disaggregated data across all northern states is limited, emerging evidence suggests patterns of gendered participation in sesame value chains. Understanding these regional distinctions is critical to designing gender-responsive, location-specific and interventions in the sesame value chain.

3.3 Policy and Programme Review: Support to Sesame and Cowpea Value Chains in Nigeria

Nigeria has adopted a succession of agricultural development policies since 2011 that have progressively elevated sesame and cowpea to priority status, both for domestic food security and export earnings. The table 3 below provides a comparative review of the most relevant policies and programmes, assessing their scope for sesame and cowpea, their gender dimensions, and the extent to which gender commitments were implemented in practice. The review draws on federal policy documents, World Bank analytical work, project evaluations, and secondary literature. Among the most impactful and efficient programmes for sesame and cowpea are the WACOT organic sesame initiative in Jigawa and Kebbi, which combines 100% premium offtake agreements with gender-targeted training, and the IFAD-VCDP in Benue, which uses Commodity Alliance Forums to integrate financial literacy, group formation, and market linkages. Both have demonstrated scalability and positive returns. Their gender sensitivity varies: the WACOT model actively recruits women through dedicated cooperatives and has reported increased women's participation in certified organic production, while the VCDP has institutionalized women-only training sessions and savings groups through partnerships with banks. Impacts for men and women include higher incomes, reduced post-harvest losses, and improved access to premium markets; for women specifically, benefits

also encompass greater decision-making power within households, formation of women-led cooperatives, and enhanced visibility as commercial producers.

A critical systemic finding is the persistent gap between policy design and ground-level implementation. While Nigeria's Gender Policy in Agriculture (2016) is among the most explicit agricultural gender policy instruments in West Africa, mandating gender training for all intervening organizations, sex-disaggregated data, and gender-responsive budgeting, its provisions have not been operationalized through state-level Agricultural Development Programmes (ADPs), extension service staffing, or programme monitoring systems for sesame and cowpea specifically. The underlying reasons for this implementation gap are linked to barriers within the extension systems which include the non-availability of female extension personnel, lack of transport facilities for female staff, absence of sex-disaggregated data for planning, and the exclusion of women from programme-level decision-making. At the programme level, women's limited access to land-based collateral has locked them out of the primary federal credit instruments, while gender commitments embedded in policy documents have not been translated into dedicated budget lines, staffing norms, or performance indicators at state level. The NGPA itself acknowledges that without reliable sex-disaggregated data, implementation of its provisions is fundamentally constrained. Together, these factors create a situation where gender commitments remain at the level of policy aspiration, with few projects like this one being a notable exception, making the concerted effort to document sex-disaggregated data and generate gender analysis evidence.

Table 3. Policy and Programme Review: Relevance and Support to Sesame and Cowpea Value Chains in Nigeria

Policy / Programme	Period	Sesame / Cowpea Relevance	Gender Dimension	Implementation Assessment
Agricultural Transformation Agenda (ATA)	2011–2015	Both crops listed as priority commodities; sesame and cowpea included in Growth Enhancement Support (GES) subsidy scheme for seeds and fertilizers	No dedicated gender component; women structurally disadvantaged in GES registration due to land tenure and documentation requirements; gender gap in ADP extension visits widened during ATA period	Mixed: GES expanded input access nationally, but women received disproportionately fewer subsidized inputs; sesame and cowpea farmers in Benue and Jigawa reported exclusion
Agriculture Promotion Policy / Green Alternative (APP)	2016–2020	Both crops explicitly prioritized for export promotion; cowpea included for nutritional value and export potential; sesame for foreign exchange earnings	Gender Policy in Agriculture (2016) issued concurrently — first standalone agricultural gender policy; mandated FMARD to ensure equal budgeting and planning for women farmers; in practice, four value chains receiving largest APP budget had lowest women participation (World Bank, 2023)	Weak on gender implementation; policy architecture sound but budgetary gender mainstreaming absent; sesame and cowpea extension services remained male-dominated
National	2016	Cross-cutting:	Explicitly targets: equal	Not systematically

Gender Policy in Agriculture (FMAFS)	(revised from 2014 draft)	applies to all value chains including sesame and cowpea; targets equal participation of smallholder women in entire agricultural value chain	access to seeds, fertilizer, credit and extension; mandates gender training for all NGOs/CBOs before intervening in value chains; calls for sex-disaggregated data collection; gender-responsive budgeting in FMAFS	implemented at state level; ADP gender desks under-resourced; no enforcement mechanism; Benue and Nasarawa ADPs lack dedicated women's extension officers for sesame/cowpea
Anchor Borrowers' Programme (ABP) — CBN	2015–2023	Sesame and cowpea explicitly listed as target commodities; linked smallholder farmers to agro-processor anchors; loans disbursed in-kind (inputs) and cash	Intended to reach women farmers; cooperative group structure (5–20 members) theoretically enables women's groups; in practice, land collateral requirements and lack of formal documentation excluded many women, especially in northern states	High default rates (53%); politicization undermined targeting; women and smallholders in sesame/cowpea zones received fewer benefits than intended; National Gender Policy objectives not operationalized within ABP guidelines
National Gender Policy (NGP)	2006; revised 2021–2026	Cross-sector; agriculture section calls for women's equal access to productive resources; 2021 revision responds to widening gender gaps	2021 NGP includes: gender cadre professionalization in civil service; gender mainstreaming in all sector budgets; inclusion of women, youth, elderly and PWDs; strategic implementation framework developed alongside policy	2006 version largely unimplemented in agriculture sector; 2021 revision not yet reflected in ADP/extension service reforms at state level; no monitoring data available for sesame or cowpea sub-sectors
National Agricultural Technology and Innovation Policy (NATIP)	2022–2027	Replaces APP; cowpea and sesame remain priority export crops; innovation and technology deployment central to strategy	Mentions gender equity and inclusion as cross-cutting; limited gender-specific operational guidance; no dedicated gender budget line for sesame/cowpea value chains identified	Too recent to assess impact; potential vehicle for embedding gender-responsive extension and technology transfer if operationalized with gender indicators
SEDEQUAL Initiative (ITA / Nigeria Export Promotion Council)	2022–2024	Directly targets cowpea and soybean; improved	Explicit gender inclusion programme; 650 female farmers trained in seed production; 52 women and 78 female youth	Positive: yield increases of ~20% among female farmer participants in 2024 season; model for targeted gender-responsive

		quality seeds including drought-tolerant SAMPEA 21 variety; linked to seed system actors in Jigawa and Benue	trained in gender-responsive climate-smart legume production; women-led demonstration plots; linked women to input providers and fertilizer access	intervention; limited geographic coverage; not yet replicated at scale
Tropical Legume III Project (IITA / CGIAR)	2012–2019	Directly targeted cowpea; developed improved varieties and established seed innovation platforms (IPs) in Nigeria; trained ADP extension staff	Women's land tenure and cultural norms noted as barriers; IPs included women's groups but cultural restrictions on mobility limited participation in northern states; no dedicated gender action plan documented	Positive yield and variety adoption outcomes; gender mainstreaming partial; lessons relevant for current project design in Benue and Nasarawa

Sources: FMARD (2016) Gender Policy in Agriculture; FMARD (2022) NATIP; Federal Ministry of Women Affairs (2021) National Gender Policy 2021–2026; World Bank (2023) Gender Gaps in Agriculture Productivity and Public Spending in Nigeria; IITA SEEDEQUAL project reports (2023–2024); CBN Anchor Borrowers Programme guidelines; ActionAid Nigeria (2021) Simplified NGP in Agriculture.

Gender Dimensions of Extension Services for Sesame

Extension service delivery in sesame-producing states reflects deep structural gender inequalities that cut across both the Middle Belt field mission states (Benue and Nasarawa) and the northern states (Jigawa, Kano, Yobe) covered through desk research. Several cross-cutting patterns are documented:

- **Low coverage for women:** Extension agent ratios heavily favor men. Nigeria's ADP system is estimated to have one extension worker per 3,000–5,000 farmers nationally. In practice, women farmers, who constitute the majority of post-harvest and processing labor in sesame, are systematically under-reached. Female extension agents are rare in sesame-producing LGAs, particularly in northern states where cultural norms restrict mixed-gender advisory interactions. This dynamic operates through two mechanisms. Male extension officers structurally favor male farmers: interactions occur in spaces women cannot easily access, training schedules ignore women's domestic labor burdens, and cultural norms in northern Nigerian communities where purdah and gender-segregated public life are prevalent make it socially unacceptable for male agents to engage women farmers directly. The result is that compliance-critical knowledge on pesticide use, drying standards, and post-harvest hygiene never reaches the actors whose practices determine whether sesame meets MRL and microbiological export thresholds. Conversely, where female extension agents are deployed, evidence from Sub-Saharan Africa consistently shows higher rates of technology adoption and behavior change among women farmers, because female agents can access homesteads and engage women in gender-appropriate settings. The absence of female extension agents in sesame-producing LGAs is therefore not a staffing detail but a structural barrier to SPS compliance.
- **Content mismatch:** Technology transfer excludes women's activities. Extension content for sesame has historically focused on production (land preparation, planting, fertilizer application) activities, which are dominated by men, rather than post-harvest operations (drying, threshing, cleaning, grading, storage), where women's labor is concentrated and quality losses are most severe. This means women receive proportionally less technical support than their actual contribution to the value chain warrants.
- **Input subsidy exclusion:** The Growth Enhancement Support (GES) Scheme under the ATA registered farmers through a mobile-phone-based e-wallet system. Women's lower rates of mobile phone ownership

and formal identification documents in northern states led to their exclusion from sesame-related subsidies for certified seeds and fertilizers.

- **Non-govt organization (NGO) vs. state extension:** Women farmers in Benue and Nasarawa are more likely to be reached by NGO-led extension than by government ADP services, reflecting a gap in state capacity. In Jigawa, JARDA has historically operated through male farmer group leaders, limiting direct outreach to women.
- **Markets and price negotiation:** Across sesame zones, women have minimal participation in setting prices and negotiating sales. In both the Middle Belt and the north, farm gate sesame sales are predominantly controlled by male household heads or male-dominated trader networks, even when women have provided significant labor inputs.

Regional Differentiation in Gender Roles: Middle Belt vs. Northern States

The gender dynamics of sesame production differ significantly between the Middle Belt states (Benue, Nasarawa, Kogi, Plateau) and the northern producing states (Jigawa, Kano, Yobe, Borno, Zamfara), with implications for how interventions should be designed across geographies.

Middle Belt (Benue, Nasarawa): Sesame is embedded in smallholder mixed-farming systems where women participate throughout the value chain, including land preparation assistance, weeding, harvesting, post-harvest drying and sorting, and local market sales. Women's groups (including church-based and cooperative groups) are active and provide an entry point for extension. Women can interact directly with male and female extension agents. Thus women have historically been central to the beniseed marketing economy at community level.

Northern States (Jigawa, Kano, Yobe, Katsina): Sesame production is more commercially oriented and large-scale, with greater male dominance across all production stages. *Purdah* (female seclusion) norms in parts of Jigawa and Kano limit women's direct participation in fieldwork. Women's involvement is concentrated in post-harvest processing (threshing, cleaning, packaging) often conducted within the household compound. Female-only extension groups (using female extension agents or community women's leaders as intermediaries) are the only viable modality for direct outreach. However, women's processing cooperatives in Jigawa, notably in Taura and Birnin Kudu LGAs, have emerged as economic actors in sesame cleaning and local aggregation. This regional contrast means that a single gender intervention design cannot be applied uniformly across sesame-producing states. Project activities must implement context-sensitive approaches for each zone.

3.4 Overview of the Sesame Value Chain and Livelihood Context in Nigeria

Our fieldwork and analysis revealed that sesame farming is a preferred livelihood option for both men and women because of its comparative advantages, including a ready market, high demand from local exporters and international markets, short maturity, and low input requirements. Women in the study locations prefer sesame because it is easier to plant and store than other crops, such as rice, which require irrigation. Due to its high value as an export-cash crop, sesame cultivation on large hectares in Nigeria and other similar contexts is characterized by male control over production resources. The commercialization of sesame attracts more male farmers. This reinforces gendered power dynamics, where the crop's status as a major foreign exchange earner means that control remains largely vested in men. Sesame in Benue and Nasarawa States follows a multi-stage value chain that begins with pre-production and input supply (seed selection, land preparation, access to agri-chemicals and advisory services), moves into pre-harvest production (planting, thinning, weeding, fertilizer and pesticide application), and then harvest and immediate post-harvest handling (cutting and stacking plants, drying of stalks and pods, threshing, primary cleaning). This is followed by post-harvest processing and storage (sun-drying of seed, sorting, winnowing, bagging, on-farm or village-level storage), and then marketing, aggregation and export-oriented processing, where seeds are bulked, cleaned, sometimes further processed and prepared for domestic and export markets (5, 29, 30). Across many producing countries, sesame systems are dominated by smallholders and remain highly labor-intensive, with limited mechanization, particularly at the harvest and post-harvest stages (3).

Within this overall structure, sesame production in both states is predominantly smallholder-driven and depends on women's labor and participation, especially during the pre-harvest, harvest, and post-harvest phases. Women's

³Davis, K., Lion, K. and Arokoyo, T. (2019) Organisational Capacities and Management of Agricultural Extension Services in Nigeria: Current Status. *South African Journal of Agricultural Extension*, 47, 118-127. <https://doi.org/10.17159/2413-3221/2019/v47n2a508>

engagement is concentrated in time-consuming operations, such as broadcasting, weeding, harvesting, on-farm sundrying, sorting, winnowing, and bagging, which are unmechanized and physically demanding. Evidence shows that contamination with enteric pathogens, such as *Salmonella*, is closely linked to poor hygiene and environmental exposure during harvesting, sun-drying, and storage (e.g., drying directly on bare ground, proximity to animal droppings, contaminated water, and dust) (34). At the same time, the misuse of pesticides, including the use of incorrect active ingredients, overdosing, or late applications close to harvest, can lead to pesticide residues in sesame seeds that exceed internationally recognized Maximum Residue Limits (MRLs), thereby triggering border rejections and undermining market access (34). Women involvement in these crucial roles positions them as primary gatekeepers of quality and food safety at both the farm and community levels. Their practices strongly influence factors such as foreign matter contamination, moisture levels, and overall hygiene conditions for drying, handling, and storing seeds. These practices are crucial for mitigating risks associated with *Salmonella* and other hazards throughout the sesame value chain.

In the study context, women's limited decision-making power over input types and purchases, combined with inadequate training on safe pesticide use and withdrawal periods, means they often manage crops and post-harvest tasks without being able to ensure that upstream pesticide decisions align with GAP and MRL requirements. This structural disconnect heightens the risk of MRL non-compliance and reinforces the need for targeted capacity-building, and inclusive decision-making on pesticide choices and application practices (34, 35).

Table 4: Sesame value chain phases and food-safety risk points linked to existing studies.

Value-chain phase	Typical practices/actors	Key food-safety risk points	Citations
Pre-production & input supply	Seed, fertiliser, pesticide access; advisory services	Choice of active ingredients; quality of inputs	34
Pre-harvest production	Planting, weeding, pesticide/fertiliser application	Wrong product, dose, or timing; contaminated irrigation	34
Harvest & immediate post-harvest	Cutting, stacking, stalk drying, threshing	Soil/manure contact; dust contamination; delayed drying	34, 35
Post-harvest drying, cleaning & storage	Sun-drying, winnowing, sorting, bagging, and storage	<i>Salmonella</i> contamination; mycotoxins; pests; poor moisture management	34, 35
Marketing, aggregation & export processing	Bulking, transport, cleaning, grading, packaging	Cross-contamination; mixing compliant and non-compliant lots	34, 35

3.5 Gendered Division of Labour and Differentiated Roles

Sesame production activities in the study community revealed a "complementary division of labour" in which women and men perform specific tasks based on their abilities and preferences, rather than the exclusive gender ownership of crop tasks. Roles are gendered, with women providing the bulk of labor in most time- and quality-sensitive tasks. They are heavily engaged in land preparation, planting, intensive weeding, routine field care, harvesting, drying, cleaning, sorting and retail trading. These activities place women at the centre of pre- and post-harvest quality control, even though they often operate on smaller plots and with fewer productive assets.

Men dominate tasks perceived as heavy, risky, or capital-intensive, including land clearing, ploughing (where mechanization exists, e.g., power tillers), seed selection, commercial farming management, bulk transportation, bulk trading, and negotiations with large buyers and exporters. Men more often control decisions about chemical purchases, input selection and marketing strategies, even when women have done much of the labor that determines quality outcomes. The proportion of males and females is almost equal in the study context, with respondents citing a 60:40 ratio of men's and women's involvement. As observed elsewhere, sesame production in the Udei community is marked by monocropping (lack of crop rotation), a practice that compromises soil health and increases vulnerability to pests and diseases. The production capacity of male farmers ranges from one hectare to 20 hectares of land, depending on their years of farming experience and access to land. Production capacity of women-managed plots ranges from one acre to 20 hectares. In some north-central states such as Bauchi, Kano and Jigawa, planting is done twice during the rainy and dry seasons, but in Udei and most rural sesame farming communities in Benue State, dry-season sesame planting between July and August is preferred to ensure quality, reduce production drudgery, reduce weeding, speed drying and shorten the storage period. Women's involvement in sesame production begins with land clearing for smaller plots of one acre, using family labor, while employing labor (mainly men) for larger plots up to 10 hectares. Planting is done by broadcasting, and

weeding is done by hand or with smaller-grade sprayers. After harvesting, women assume near-exclusive responsibility for post-harvest handling, which includes sundrying and threshing (e.g., drying on bare ground), cleaning, sorting, and bagging to sell in local markets or to local buying agents (LBAs/aggregators). While men are involved in bulk trading and aggregation for companies in major cities such as Makurdi, Kano, and Lagos for exporting processed sesame, mobility restrictions affect and limit women's sesame aggregation to the communities they reside in, surrounding communities, neighboring states, and markets.

While both men and women contribute labor across all pre-harvest, harvest, and post-harvest activities within the sesame value chain, women's involvement in accessing and reaching the most profitable market spaces (e.g., direct company supply) is limited. This limitation is driven by systemic barriers, including mobility norms and means, persisting insecurities, limited access to productive agricultural resources and capital to finance the business, and restrictive social norms concerning reproductive roles, which exclude and reduce their participation in company-organized training that targets more men Local Buying Agents (LBAs). This disparity fundamentally limits the equitable accrual of benefits for women.

Table 5 synthesizes the actors, roles, and gender participation across the sesame value chain stages.

Value Chain Stage	Key Actors	Roles and Responsibilities	Gender Participation	Comment
I. Input Supply	Agro-dealers	Seed and agrochemical suppliers	M+ W-	Often male-owned/ managed, women handle sales/labour
II. Production	Smallholder farmers (< 10 ha)	Sesame producer, land preparation, planting, weeding, harvesting,	M+ W+ M+ W- M+ W+ M+ W+ M+ W+	Men for heavy labour –land preparation, ploughing; Women for planting, weeding and harvesting
	Commercial/investor farmers (> 10 ha)	Sesame producer (large scale)	M+ W-	
	Transporters	Transporting harvest	M+ W-	
III. Post-Harvest activities	Sun-drying	Bundling Sesame	M- W+	The harvested sesame stalks are bundled and left to dry in the sun in the field or in a well-ventilated area for one to two weeks. This reduces the moisture content to a safe level to prevent mold growth and rancidity of the oil during storage
	Threshing	Manually threshing by beating the dried stalks on a tarpaulin or concrete floor	M- W+	Once the plants and pods are thoroughly dry and brittle, they are threshed to separate the seeds from the capsules/pods,
	Winnowing/cleaning	The threshed material contains seeds, chaff, dust, and other foreign matter. Winnowing using a sieve to separate the debris, sand, leaving the clean seeds	M- W+	
	Storage	The dry, clean seeds are packaged (e.g., in clean, new bags) and placed on pallets, then stored in a well-ventilated facility to protect them from moisture, insects, and rodents.	M- W+	

IV. Marketing (Primary)	Primary traders	Sesame trading to (LBAs/collectors) from producers	M+ W+	Men dominate trading and buying; Women trade more than buy
	Local Buying Agents (LBAs)	Collecting, buying from smallholder farmers	M+ W-	Often men collect in bulk to be sold to companies; women may collect small quantities to resell on market days in local markets
	Retailers	Distributing and retailing to consumers	M- W+	women dominate local/ rural retailing
	Wholesalers	Buying from local collectors/ smallholders, bulk trading, and distributing	M+ W-	
V. Company/ Industrial Processing	Processors	Cleaning, dehulling, oil extraction, sorting - (quality, size, and color), labelling, branding	M+ W+	Men-dominated management/heavy machinery; Women-dominated cleaning/sorting/dehulling labour, to ensure a uniform, high-quality product, especially for export
	Exporters (OLAMS)	Buying from LBAs/ wholesalers, cleaning, rebagging, exporting	M+	High capital/formal sector
VI. Consumption	Urban and Rural Consumers	Consuming as oil, paste, stew, or other foods	M- W+	Women dominate the local market and often manage household food purchase and preparation

Key: M+ - Many/High Men Involvement; W+ - Many/High Women Involvement; M- Few/Low Men Involvement; W- Few/Low Women Involvement.

The gender-disaggregated analysis of the sesame value chain reveals a pattern of horizontal segregation, with men and women concentrated at different stages of the chain. Fieldwork (FGDs, KIs) shows that women are focused on pre- and post-harvest tasks (weeding, harvesting, drying, cleaning, small-scale trading). At the same time, men dominate land clearing, mechanized work, bulk aggregation, transport, and negotiations with exporters. This horizontal segregation is consistent with corroborating evidence that women have strong sesame experience but weaker access to land and production factors (5, 14). Root causes include customary norms on "heavy" versus "light" work, male control of assets and markets, and extension programmes targeted at male heads of household (5, 14). This benefits men through control of higher-margin nodes (bulk trade, export contracts) and strategic decisions, while constraining women to labor-intensive, low-paid segments where their contributions are often invisible and under remunerated. In Benue, this pattern is particularly pronounced for sesame, but it echoes findings from other Nigerian and African value chains (5, 6, 7, 9, 11), suggesting that it is not unique to this state.

The project should deliberately link women's roles in quality-critical tasks to higher-value opportunities (e.g., certified quality clubs/agripreneur, women-led aggregation cells, and premiums for clean sesame) and involve women directly in buyer dialogues and contract negotiations. Embedding these measures into project activities, such as training women as lead farmers, supporting women's groups to bulk and brand sesame using simple colored sacks or labels, and including women in export company sessions, would increase women's income share and bargaining power along the chain.

The fieldwork reveals that the essential phases of sesame production management (weeding), harvesting, post-harvest sun-drying, and storage (mostly by wholesalers) are the core determinants of sanitary and phytosanitary (SPS) compliance. The prevalent use of non-certified herbicides for weed control, the use of non-recommended practices for accelerated drying, and excessive pesticide use for storage directly compromise maximum residue level (MRL) compliance and overall food safety.

Strategic efforts must target men and, especially, women farmers, small-scale processors, and retailers with training for interested actors on organic farming, appropriate pesticide application and recommended use, the use of pest-resistant storage bags, non-harmful indigenous preservatives to ensure MRL compliance, and pesticide

reduction. The project intervention must enhance women's equitable access to opportunities by ensuring that training is decentralized and delivered with cultural sensitivity to their reproductive roles, mobility, time burdens/poverty, and financial constraints. This deliberate approach is not merely an equity measure; it is a vital necessity to reach and benefit women and men actors as SPS change agents, thereby maximizing quality compliance and ensuring that all contributors secure equitable benefits from sesame's commercial success.

3.6 Storage Practices, SPS Knowledge Gap and Pesticide Residue Awareness

Storage behavior and perceptions of responsibility for chemical use are strongly gendered. Women farmers reported that they do not typically store sesame with pesticides because sesame is "sold quickly" due to ready markets. However, they acknowledged using storage pills/tablets (e.g. phostoxin-type products) when storage is necessary. In practice, chemical storage and pesticide-based preservation are typically viewed as the domain of wholesale buyers or traders. Women view themselves as responsible for producing a clean, saleable product rather than managing long-term storage with chemicals. At the same time, women traders possess rich indigenous preservation knowledge, including the use of onions, bitter (neem) leaves, chilli pepper, orange peels and activated charcoal to protect stored grains. Yet this knowledge is applied primarily to beans/cowpea, not to sesame (benniseed). This disconnect indicates both an untapped reservoir of low-risk, locally accepted techniques and a lack of technical guidance on how to adapt these methods safely and effectively to sesame.

The project can communicate to interested partners, collaboration opportunity with research institutes like NSPRI, women's groups, extension agents, and food safety experts to test, document, and validate the use of such methods for sesame, and to integrate them with hermetic technologies. Integrating these findings into training curricula and demonstration plots and recognizing women as knowledge holders would reduce reliance on hazardous fumigants, lower costs, and increase women's status as SPS innovators.

Women's labor-intensive weeding and postharvest roles drive pesticide choices, but women lack safe, affordable alternatives.

Women repeatedly identified weeding as a major burden and reported that slow natural drying and insect damage in storage push households toward "*quick action*" chemicals, even when harmful. Field observations confirmed widespread on-ground and floor sun-drying practices, including direct spreading of sesame on bare soil or rough concrete, heavy foot traffic, and unprotected handling. Women, who are aware of the need for cleanliness, repeatedly cited a lack of capital as the key barrier to adopting even basic hygiene and safety improvements, such as tarpaulins, raised drying mats, Personal Protective Equipment (PPE), or hermetic (PICS) bags. The result is a pattern in which women know what "better" would look like but cannot afford the minimum infrastructure required for SPS-compliant drying and storage, such as tarpaulins, drying mats, and PICS bags.

FGDs and KIs confirm that both men and women have low awareness of MRLs, banned products, and proper application. Root causes include collapsed extension services, the absence of tailored training for women, the high cost of compliant products, and weak regulation and enforcement. This creates a situation in which farmers resort to unsafe herbicides for artificial drying and to tablets like phostoxin, not only out of ignorance (often without understanding their health or export market implications) but also because safer solutions are inaccessible or unaffordable. Viable alternatives identified through fieldwork include labor-saving weed management options (using appropriate herbicides safely, community weeding groups, and power tillers), safer storage practices (proper drying, raised platforms, and hermetic/PICS bags), and the adaptation of indigenous preservation methods (e.g., activated charcoal and neem leaf) to sesame. Regulatory changes, such as banning harmful agrochemicals, will protect farmers and consumers only if they are informed early and communicated clearly through trained local extension agents, risk communicators, agro dealer networks, radio announcements, women and men lead farmers and cooperatives, and if practical substitutes are simultaneously offered.

Project activities should therefore: (i) train women and men lead farmers as risk communicators to disseminate simple "traffic light" labelling and protocols on banned versus acceptable products; (ii) train agro-dealers and cooperatives leaders to cascade updates; (iii) promote hermetic storage, organic practices and improved access to drying infrastructure; and (iv) introduce safe-use herbicide/IPM packages that directly address weeding drudgery for sesame and similar crops. The expected impact is reduced exposure to highly hazardous products, improved compliance with export standards, and reduced physical strain for women.

3.7. Access to and Use of Traceability Systems



The assessment revealed a gap in the application of modern quality assurance mechanisms among actors in rural communities, aggregation sites, and sesame markets. Awareness of formal traceability systems, including associated concepts such as digital record-keeping, certification access, and supply chain tracking, is non-existent among both farmers and processors at the farm-gate level. The only rudimentary traceability measures observed are informal and localised to market aggregation and wholesale actors, where branded bags bearing a trader's or marketer's name, or state-approved sacks (such as Benue sacks), are used. Additionally, only a few male marketers maintain basic book records. This complete absence of formal, on-farm and processing traceability, coupled with low digital literacy across primary actors, especially women, implicitly creates a gender and compliance gap. Since women are heavily involved in quality-critical pre-harvest and post-harvest activities but are excluded from wholesale buying and marketing training from export companies, their contributions are constrained.

Women's SPS and traceability knowledge gaps are large, but their motivation to learn and leverage family literacy is a strong enabling factor.

Across FGDs, women reported never having received SPS-specific training or systematic guidance on food safety, traceability or safe pesticide use, and having no exposure to digital record-keeping or certification processes. Root causes of the knowledge gap include male-biased extension, training held at times or locations that exclude women, and low female literacy. Despite this, women expressed strong eagerness to learn and proposed practical ways to overcome literacy barriers, stating they would share training booklets and devices with educated children or spouses to help them understand and apply new knowledge. Participants agreed, stating that even if they do not initially understand the complex traceability tools, "we will show the training booklets or digital devices to our children and spouses who are educated, and they will teach us and help us to understand better and apply the knowledge gained effectively." This insight suggests high potential for successful knowledge retention, application and transfer.

The project should leverage lead farmer to farmer extension, community-based peer-to-peer learning mechanisms and co-design paired training sessions that invite women to bring their literate sons, daughters, or preferred household members. It should simplify traceability documentation (using icons, color codes, and minimal text) and integrate simple digital tools into existing social networks, such as farmers groups. By embedding this within core training and follow-up, extension, and monitoring, the project can build a community-based support system where women can access help with record-keeping and progressively engage with more formal traceability systems. The expected impact is improved documentation of practices, easier compliance verification and certification, and the gradual closing of the digital and literacy gender gap, ensuring the effective application and retention of knowledge long after the training session concludes.

3.8 Preferred Information channel, training format and timing

The results show that effective capacity development must be firmly grounded in the realities of gendered time use, labor patterns and infrastructural constraints. Technology-dependent channels, such as television, radio, WhatsApp, and social media, were widely regarded as impractical for reaching rural sesame farmers, particularly women. Unreliable electricity, poor network connectivity in rural communities and other remote areas, and low smartphone ownership and use, especially among women, limit the reach and reliability of such media.

Farmers expressed a strong preference for local, face-to-face, practical engagement. Community meetings, farmers' and traders' association gatherings, and group-based demonstration plots were consistently identified as the most trusted and accessible platforms. Women emphasized that capacity building must be practical, hands-on, and immediately relevant to their most pressing challenges: drudgery from weeding, slow and unsafe drying, storage insect damage, and costly or unavailable safe pesticides and herbicides. Training that promotes indigenous methods, sources local materials (such as activated charcoal), and introduces safer, affordable alternatives, such as hermetic bags and Integrated Pest Management (IPM) tools, was considered particularly valuable.

Women's time poverty and mobility constraints require gender-responsive training schedules and formats to achieve real reach.

Time-use mapping highlighted the intensity of women's daily burdens. Women start their day one to one and a half hours earlier than men, performing unpaid domestic work such as cooking, childcare, and collecting water and fuel



before heading to the farm. Throughout the day, they juggle fieldwork with food preparation, childcare, and processing. Their time on the farm is fragmented, with domestic tasks interspersed, leaving little flexibility to attend training held during conventional “work hours.” Men, by contrast, have more continuous farm time in the morning and a clearer midday rest period.

The late afternoon (around 2:00–4:00 p.m.) emerged as the most promising window for training, but even then women’s availability is constrained by returning home, preparing evening meals and caring for children. If training is held in the morning or far from communities, women are either absent or attend at their own expense, reducing both reach and effectiveness. For men, current schedules and locations are less of a barrier and often reinforce their informational advantage. Women indicated that their attendance improves when training is:

1. Scheduled after their peak domestic hours (mid to late afternoon),
2. Organized on days or in periods when farm labor is relatively lighter, and
3. Held at nearby community spaces or association meetings to minimize travel time, trust and safety concerns.

Seasonal calendar analysis further refined these preferences. The sesame production cycle in the project area follows a structured pattern from postharvest handling (January–February) through storage and price watching (late February–March). Land preparation (March–April), early planting (April–May), weeding and first insecticide applications (May–June), early harvest (June–July), and then a main season of land preparation (July), planting (August), intensive weeding and spraying (August–September), flowering and pod formation (September–October), final spraying and maturation (October–November), and peak harvest and drying (November–December).

The period from February to April when postharvest activities are winding down and land preparation is starting— is relatively less intense and was identified as an optimal window for workshops and structured training. Farmers often store sesame from December to May and sell when prices peak between June and July. This creates a critical intervention moment; December to May is the prime period to introduce and support the adoption of safe, non-chemical storage solutions, such as hermetic/PICS bags, and to reinforce good drying and handling practices before products enter longer storage.

Women and men also emphasized that financial inclusion is a prerequisite for adopting new technologies or practices. Without accessible credit, savings schemes or affordable payment mechanisms, training on herbicide safety, IPM, tarpaulins or hermetic storage will have limited impact, as farmers, especially women, cannot afford to act on new knowledge.

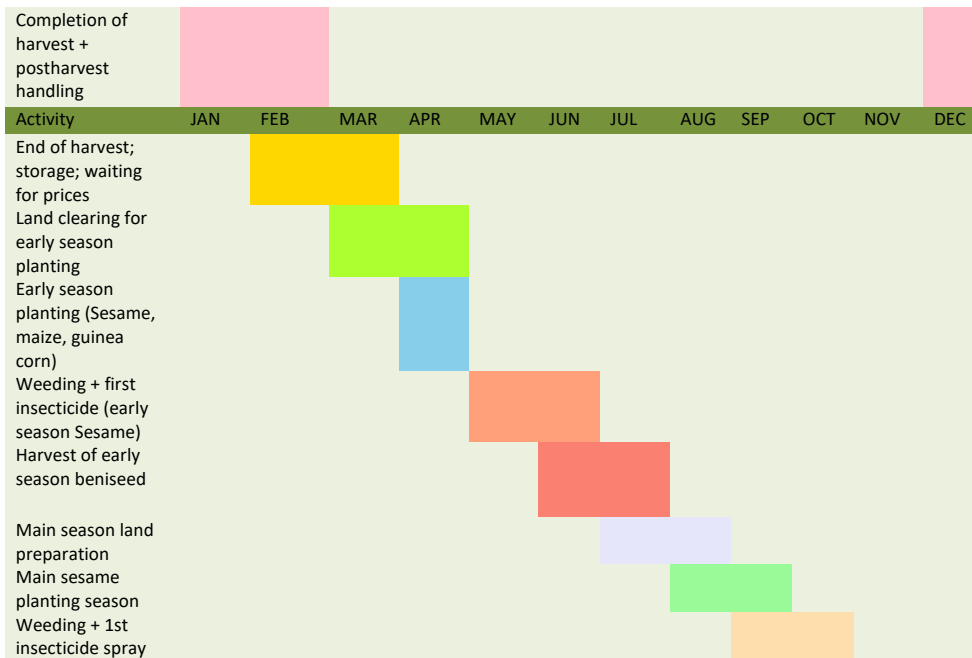
Overall, the results show that to be effective and equitable, capacity building must:

1. Move away from electricity and network-dependent media,
2. Rely on localized, association-based, practical training,
3. Be strongly gender-responsive in scheduling and facilitation, and
4. Be coupled with tangible support for low-cost post-harvest technologies like PICS bag, so that women and men can translate new knowledge into practice.

Range of time /	4:30-6:00	6:00-10:00	10:00-12:00	12:00-14:00	14:00-16:00	16:00-18:00	18:00-20:00	20:00+
Typical Activities – WOMEN	Wake up early; prepare breakfast; fetch water; get children ready; clean.	Travel to farm if possible OR continue domestic work; planting/weeding/harvesting.	Continue farm work (lighter tasks) OR home trade/processing (shelling, fetching water).	Return from farm; prepare lunch; attend to children.	Domestic chores (washing, cleaning), childcare; processing; cooperative meetings.	Final domestic shift: fetch water; prepare evening meal; childcare.	Family dinner, clean-up; may attend women-only cooperative meetings.	Sleep.
Typical Activities – MEN	Wake up; personal hygiene; possibly eat; minimal domestic chores.	Travel to and work on farm: peak physical labour (clearing, spraying, digging, harvesting).	Continue farm work; slow pace as heat increases.	Return from farm; rest due to heat.	Rest, socialize, minor repairs, planning; available for community engagement.	Light duties: supervise labour, check stores, attend formal meetings.	Dinner, listen to radio, socialize, prepare for sleep.	Sleep.
Implications for Access & Training	Women start 1–1.5 hrs earlier with unpaid domestic work — fatigue before farm work.	Women have fragmented farm time; men have uninterrupted farm focus — affects participation.	Heat reduces productivity; women balance mid-morning domestic tasks.	Midday universal rest; women remain active due to domestic duties.	OPTIMAL TRAINING WINDOW — men free; women may be available before evening chores.	Women least available; men have greater mobility and discretionary time.	Radio programs reach men more consistently; women may attend separate groups.	Sleep.

Figure 2: Daily activity Chart of Sesame (Benni Seed) Women and Men Farmers in Benue State

Note: Colors are assigned without a specific pattern and are intended only to enhance clarity



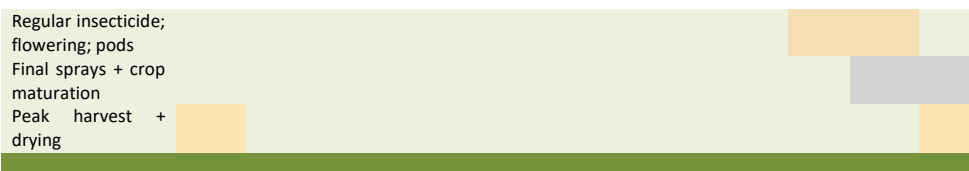


Figure 3: Seasonal calendar for production of sesame (benni seed) in Benue state

Note: Colors are assigned without a specific pattern and are intended only to enhance clarity. Note for Sesame: Women's high labor intensity in sesame occurs during harvesting, threshing and winnowing/cleaning (December=February). Low intensity during land preparation and planting (March–April; September–October). Training should be held at low activity periods (April–May) but not during festive holiday. Generally, avoid Friday afternoons (Muslim prayers in northern states – Kano, Katsina, Jigawa, Zamfara, Borno, Yobe, Gombe, Sokoto, Kebbi, Kaduna, Niger, Bauchi, Taraba, Adamawa). Avoid market days (vary by community – consult local women's groups). Keep sessions less than 3 hours for mixed groups, less than 2 hours for women-only sessions.

Provide transport reimbursement or meeting allowances – proven to increase women's attendance by 40–60%.

3.8.1 Information Channels

Evening radio may reach men more effectively. Reaching women requires physical, women-only sessions or information passed through their existing informal savings/cooperative networks (Sesame Market Women Multi-Purpose Cooperative). The farmers' association was consistently highlighted as the most viable and trusted mechanism for disseminating information. This face-to-face traditional network offers inherent trust, broad reach, and an established structure for peer-to-peer learning. SMS in English is preferred over local language SMS, as some women (or their children) can read English.

Training formats such as demonstration plots were also preferred for its practical and direct observation techniques. Classroom discussion sessions and separate women's sessions are preferred, crucial and non-negotiable. Women explicitly stated they could not speak freely in mixed gatherings. Gender-segregated training is essential for effective learning and feedback from women. The preferences for these training formats underscore that a single, standardized approach is insufficient to ensure equitable participation, especially for women.

Table 6: Preferred training format by men and women sesame value chain actors

Training Format Preference	Rationale and Necessity	Positive Responsive Action
Demonstration Plots	Highly preferred for its practical, hands-on nature, allowing actors to directly observe and practice Good Agronomic Practices (GAP) and Good Handling Practices (GHP) related to SPS compliance.	Considered as the primary delivery modality for technical skills (e.g., proper pesticide application, elevated drying techniques).
Classroom Sessions	Preferred for the open environment it provides for question-and-answer clarification and the transfer of theoretical knowledge (e.g., understanding MRLs and regulatory frameworks).	Incorporated into a multi-day format to facilitate clarification, ideally decentralized to community farmers' associations and informal savings/cooperative groups.
Separate Women's Sessions	Highly Preferred to accommodate women's unique constraints, specifically those related to reproductive roles (e.g., breastfeeding, childcare). This minimizes conflict with domestic duties and fosters an open, understanding, care environment for discussion.	Mandatory component for discussing gender-sensitive topics like resource control, and for conducting practical GHP training without male interference.

Multi-Day Format	Preferred over one-day, rushed sessions (such as mobile training or single field days). Actors recognize that effective behavior change for SPS compliance requires sustained engagement and practice.	Training must be phased and spread over multiple days to ensure absorption, retention, and practical application, as well as post-assessment.
------------------	--	---

These preliminary findings indicate that a high-reach, gender-responsive, and inclusive training approach for the SPS compliance project must be integrated and flexible. Responsiveness to the identified infrastructural limitations by strategically prioritizing farmer associations and community meetings as the primary dissemination format is vital. Furthermore, training delivery must move beyond standardized formats to embrace a mixed-modality approach that utilizes: demonstration plots for practical, hands-on skills transfer, facilitated classroom sessions for technical question and answer and regulatory knowledge and dedicated, separate women's sessions, delivered over multiple, strategically timed days, to ensure equitable access and accommodate reproductive responsibilities.

By adopting this responsive integrated format, the project can overcome digital barriers, leverage trusted community networks, and ensure that both men and women receive the appropriate training support, increasing the likelihood of widespread SPS compliance and delivering equitable empowerment outcomes. Women are catalysts and a better change and social agents who can easily broadcast and create awareness of adherence to SPS and MRL in sesame production and storage to food safety.

3.9 Perceived Livelihood Status, Agency, Benefits and Aspirations

Women see themselves as "high level" compared to non-benniseed farming women, crediting the crop for educating their children and improving their living standards. Income is often pooled with husbands for household decisions (school fees, building, and other investments). Women primarily define benefits as income to meet daily household needs (food, school fees, healthy household members), whereas men define benefits as investment in capital assets (land, houses, cars and equipment). Project impact metrics must go beyond income and track women's qualitative indicators as core benefits.

Aspirations: Women desire direct market access (a closer company) to capture more value. They need financial capital, a power tiller, a threshing machine, drying mat, and effective herbicides and recommended subsidized pesticides. They are eager and open to training and technology if accessible. Men aspire to have a cargo station and airport in the capital city (Makurdi) for direct export and to reduce transportation expenses to Lagos, Kano and other export cities.

3.10 Sesame (Benni-seed) Production Challenges

Non-compliance with Sanitary and Phytosanitary (SPS) measures remains a significant challenge in the Nigerian sesame value chain, manifesting in the widespread use of harmful chemicals, deliberate product adulteration, and inadequate harvest and post-harvest handling practices. Adulteration with stones, sand, and lower-grade seeds has also become common, driven by buying systems that sometimes reward weight over quality. We observed that these behaviors are rooted in economic desperation and structural constraints rather than mere negligence. They reflect what actors must do to survive in a value chain where quality standards are poorly enforced and where accessing correct inputs, information, or support is difficult.

The root causes of these practices lie in deep systemic failures and resource deficits that have eroded the enabling environment for compliance. The public agricultural extension service, once responsible for delivering technical knowledge to rural farmers, is ineffective. As the state-level director admitted,

If I tell you that we are very close to the farmers now, I am not being entirely truthful; we simply do not have the workers or the resources to reach them consistently.

Insecurity and recurrent farmer–herder conflicts further destabilize production, prompting rushed harvesting and the misuse of chemicals as farmers prioritize safety over best practices. It is particularly challenging for women farmers, who often have less time for farming due to their combined domestic and farming responsibilities. Knowledge gaps persist, as many farmers struggle to distinguish between pesticides and herbicides. Limited access to safe storage, quality inputs, and organic treatment compounds the problem. Market structures intensify these pressures, as dominant buyers dictate prices and volumes, leaving farmers little choice but to cut corners. In the words of a major off-taker,



Farmers want quick action, something that dries quickly, without considering the dangers, but they also know that if they do not deliver quantity, they will lose the buyer entirely and their money.

This distorted incentive environment encourages non-compliance by making faster, cheaper, and riskier practices more rewarding than those driven by quality.

These underlying failures have far-reaching consequences for producers, consumers, and the national economy. Immediate effects include contaminated products with residue levels far above allowable limits and physically impure grains that are rejected by processors and exporters. Over time, these rejections have led to the loss of high-value export markets in Europe, Japan, and the US, depressed domestic prices for all Nigerian sesame due to its poor reputation, and reduced investment in processing and value addition (36). The health implications are equally severe, with consumers exposed to chemical residues. Farmers themselves face poisoning from improper handling, while local ecosystems absorb the environmental cost. Ultimately, these dynamics trap rural producers in a cycle of low quality and low prices, perpetuating poverty and keeping the sector informal and unattractive to sustainable investment. Addressing non-compliance, therefore, requires much more than training; it demands confronting the systemic, institutional, and market failures that currently make compliance both difficult and economically irrational.

Women's willingness to act as SPS and traceability change agents is an underused asset that can benefit both genders and the wider value chain.

Women see sesame as central to their livelihood and household wellbeing and are keen to adopt practices that safeguard family health, income and reputation. Desk research confirms that when women participate meaningfully in production decisions and receive targeted support, responsible production, nutrition and sustainability outcomes improve for the entire family (37). Root causes of their underutilization include low recognition of women as "farmers," a lack of tailored extension, and a male-centric design of interventions. By training women as lead farmers, peer educators and record-keeping focal persons within associations, the project can unlock their potential to diffuse good practices rapidly through social networks and across generations. Embedding women facilitators in demonstration plots, involving them in participatory technology testing, and highlighting women SPS champions in community events will encourage both men and women to take food safety more seriously. Expected impacts include faster adoption of safer methods, better household level compliance with SPS requirements, and stronger social acceptance of women's leadership in agriculture. All stakeholders from producers to field aggregators need orientation on the importance of SPS compliance and adherence to food storage safety.

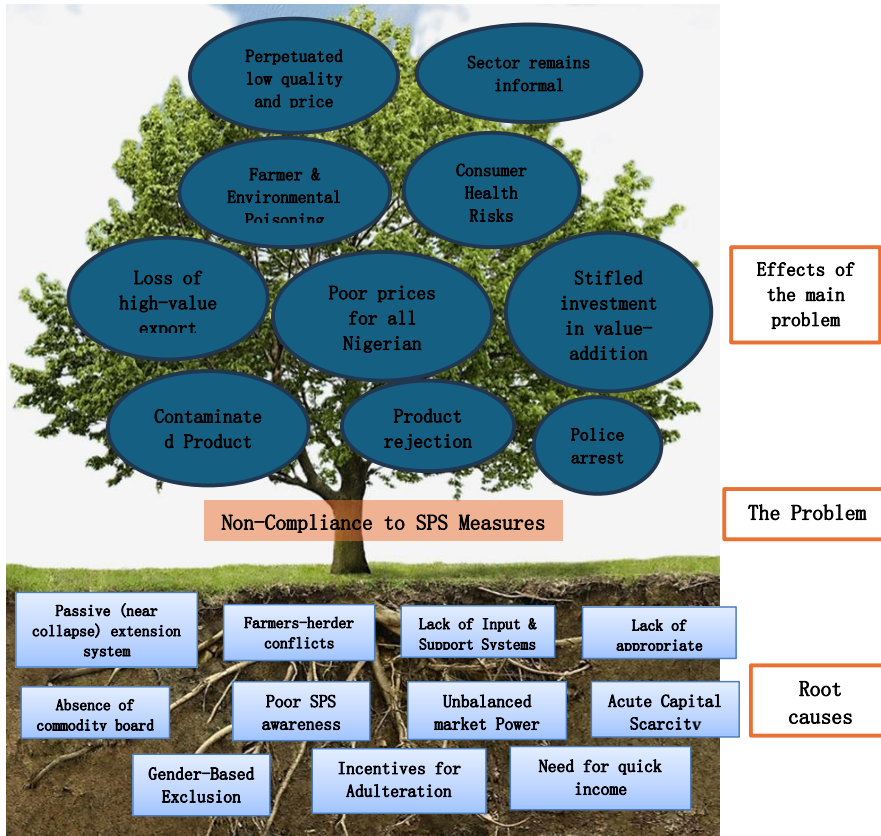


Figure 4: Problem tree showing causes and effects of non-compliance to sesame seed

4.0 DISCUSSION OF RESULTS USING THE RBET FRAMEWORK

4.1 Reach - Gendered access to information means women are systematically under-reached by current extension and market communication systems.

Men are more likely to attend mixed-gender meetings, travel to distant markets, own phones and be invited to export-company training. In contrast, women's mobility, time burden, time poverty and low phone ownership severely constrain their access. This pattern mirrors findings that extension and ICT-based information flows often privilege men unless a deliberately gender-responsive and targeted approach is adopted. As a result, men gain earlier knowledge of price changes, regulatory updates and technology options, reinforcing their control over decisions. To address this, the project should:

- (i) base outreach in local farmer, retail and wholesale trader associations;
- (ii) guarantee women-only training sessions at the community level; and
- (iii) combine face-to-face formats with simple SMS follow-ups. Implementing these measures will extend reach to women who were previously excluded and ensure both genders receive timely, actionable SPS information.

4.2 Benefit - Benefits from the sesame value chain currently accrue more to men in monetary terms, while women's benefits remain indirect and limited to the community level

Horizontal segregation and control over marketing mean that men capture most of the direct financial gains from sesame, while women benefit indirectly through improved household consumption, schooling, and housing. This aligns with broader evidence that men's preferences focus on capital accumulation, whereas women prioritize day-to-day welfare (14). To ensure equitable benefits, the project should explicitly design interventions that recognize and reward women's quality-critical labor, for example, through premiums for clean, traceable sesame payable to women's groups, and by ensuring that women co-sign contracts or aggregation agreements. Tracking benefits using gender-responsive indicators that reflect women's priorities, such as reduced drudgery, safer working conditions, and more regular income, will help ensure that interventions genuinely improve women's lives.

4.3 Empower- Low control over resources and agency undermines women's ability to act on SPS knowledge, while men's empowerment is largely tied to market and input control.

Women have limited access to land, credit, inputs and training, which affects their ability to take responsibility for many SPS-sensitive tasks without the appropriate knowledge, tools or authority to change them. For men, empowerment challenges lie more in the volatility of export markets, buyer price pressure and insecurity.

The project could strengthen women's empowerment by:

- (i) training them on how to access and apply for agricultural grants and sharing success stories of savings and credit schemes created by women;
- (ii) training them in business, negotiation and record-keeping; and
- (iii) supporting joint or independent land-use agreements where feasible;
- (iv) involving them in the design and evaluation of technologies and training content.
- (v) For men and women, empowerment includes improving transparency in buyer relationships and enabling them to shift from hazardous practices to compliant options without income loss. Implementing gender-responsive field schools, demonstration plots, farmer-to-farmer visits, and participatory technology evaluations, as successfully used in sesame programmes elsewhere (12), will deepen skills and agency for both genders.

4.4 Transform- Transformative change requires altering the incentive and norm structures that currently make unsafe practices and women's marginalisation rational responses.

Currently, markets prioritize quantity over quality, regulations are weakly enforced, and traditional gender norms often cast men as decision-makers and women as unpaid carers. Evidence from other contexts suggests that integrating gender into programme design and value-chain governance early on leads to higher adoption and impact (2, 5, 11, 16). To transform the system, the project should:

1. Work with buyers and regulators to align price incentives and contract terms with quality and SPS compliance, including joint penalties for adulteration.
2. Institutionalize gender-responsive extension approaches, ensuring women's systematic inclusion in field evaluations, technology testing and training of trainers (12).
3. Use community dialogues to challenge norms that limit women's voice and to promote shared responsibility for safe pesticide use and storage.
4. Advocate for sustainable, gender-sensitive traceability models that combine low-tech record-keeping with progressive digitalization, following lessons from other agri-food chains (12).

Embedding these elements into project activities will gradually shift norms and incentives, so that SPS-compliant, gender-equitable practices become the logical and rewarded choice rather than the exception.

5.0 FOOD SAFETY POLICIES REVIEW, ANALYSIS AND SUPPORT FOR WOMEN IN SESAME AND COWPEA VALUE CHAINS IN NIGERIA

This review examines the policy landscape governing food safety and gender inclusion in Nigeria's sesame and cowpea sectors, with specific attention to states where these value chains are concentrated, such as Benue, Nasarawa, Kano, Jigawa, Kebbi, Kogi, and other northern producing states, as well as Oyo and Ondo States in the southwest. The review applied the Gender in Agricultural Policies Analysis (GAPo) assessment indicators, ranging from recognition of women's roles to inclusion of transformative measures addressing discriminatory norms, to thirteen Nigerian food safety and agricultural policies. In addition, the review synthesizes recent literature to explain the extent to which existing policies address gendered constraints and support women's participation in SPS-compliant value chains and equitable benefit accrual. These policies include the National Food Safety and Quality Bill 2022, National Policy on Food Safety and Its Implementation Strategy (NPFSSIS) 2014, Revised National Policy on Food Safety and Quality 2024, NSPRI Food Safety Policy (NSPRI-FSP) 2024–2030, National Policy on the Environment (Revised) 2016 (NPE), Agriculture Promotion Policy (APP) 2015–2020, Economic Recovery and Growth Plan (ERGP), National Agricultural Seed Policy (NASP), Nigeria Digital Agriculture Strategy (NDAS) 2020–2030, National Agricultural Extension Policy (NEP) 2017, National Agricultural Technology and Innovation Policy (NATIP) 2022–2027, National Food and Nutrition Policy (NFNP) 2016, and National Gender Policy in Agriculture (NGPA) 2025–2030.

Food safety policy in Nigeria is fragmented, implemented by multiple ministries, and struggles with coordination, funding, and enforcement. The NPFSSIS 2014 is described as a "master road map" but its implementation has been slow and challenged by institutional overlaps and weak capacity (Okoruwa, 2021). Sectoral policies, such as the Agriculture Promotion Policy, the National Food and Nutrition Policy, and the National Policy on the Environment, incorporated only limited sections on food safety and health rather than comprehensive coverage (Okoruwa, 2021). On the farming side, unregulated pesticide and fertilizer use, poor sanitation, and weak enforcement of standards lead to unsafe food, underscoring the need for stronger regulation and promotion of Good Agricultural Practices (GAP) and Integrated Pest Management (IPM) across Nigerian agriculture (Usman, 2024).

From a gender perspective, several Nigerian and African studies highlight that women are central to agricultural production and value chains but face systematic constraints in access to land, inputs, training, and markets, which limit their ability to benefit from value chain upgrading and food safety compliance. Ashagidigbi (2022) finds low levels of empowerment in Nigeria, especially among women, and shows that improving women's control over income, group membership, and workloads is associated with better household food security, while gender-blind policies risk leaving women both disempowered and food-insecure. A similar study corroborates that women's empowerment in agriculture, together with more secure land tenure and property rights, improves household food security, and calls for policies that explicitly increase women's access to productive resources and extension services (Kehinde, 2021).

Mkandawire (2021) reviews international food system frameworks and concludes that many policies mention women but do not systematically integrate gender considerations across all components of the food system, leading to under-recognition of women's roles and persistent inequalities, and argues for a gender lens that cuts across production, processing, distribution, consumption, and the broader enabling environment.

Studies of corporate social responsibility programmes in the Niger Delta show that when initiatives explicitly integrate gender and support women's roles in agricultural value chains, they can promote more equitable value chain outcomes and strengthen women's contributions to food safety and nutrition security (Nwanguma, 2025; Uduji, 2023; Uduji, 2022). These studies suggest that without explicit gender analysis, sex-disaggregated data, measurable gender indicators, and targeted actions, policies on food safety, agriculture, seeds, or digital agriculture are likely, at best, to be gender-accommodating and, often, gender-blind. To move towards gender-responsive and gender-transformative policy in Nigeria's sesame and cowpea value chains, policy frameworks would need to:

- Define clear objectives for reaching and benefiting women and men along specific value chains, using sex-disaggregated baseline data (Mkandawire, 2021; Nchanji, 2024).
- Include indicators that track not only women's participation but also their empowerment, control over income, decision-making, and leadership participation in producer groups, and cooperatives (Nchanji, 2024; Kehinde, 2021; Ashagidigbi, 2022).

- Mandate and resource gender-sensitive extension and capacity building on food safety — covering GAP, IPM, safe pesticide use, and hygienic processing — tailored to women's roles in production, storage, and processing (Usman, 2024; Lawali, 2024; Chipeta, 2024).
- Address structural barriers, including land tenure, access to credit, time burdens, and social norms, that currently limit women's ability to comply with food safety standards or to engage in higher-value nodes of sesame and cowpea value chains (Kehinde, 2021; Anugwa, 2022).

5.1 Policy and Programme Review — Support to Sesame and Cowpea Value Chains in Nigeria

Nigeria has adopted a succession of agricultural and food safety policies since 2011 that have progressively elevated sesame and cowpea to priority status for domestic food security and export earnings. A GAPo assessment of thirteen major policy instruments — using 32 gender indicators across land, extension, financial services, markets, value chains, research, and technology — reveals a stark polarization: while the newest generation of agricultural policies demonstrates genuinely transformative gender ambitions, the food safety policies that most directly govern sesame and cowpea production, processing, and export remain almost entirely gender-blind. Reviewed across policy cycles, there is a discernible trajectory from gender-blind (ATA, 2011–2015) to increasingly gender-aware framing (APP, 2016–2020; NATIP, 2022–2027), though the overall pattern is one of incrementally stronger policy language unaccompanied by commensurate implementation (see Table 3 for a full comparative review of policy and programme scope, support categories, gender dimensions, and implementation outcomes). The review draws on federal policy documents, World Bank analytical work, IITA project evaluations, and secondary literature.

A critical systemic finding across all programmes is the persistent gap between policy design and ground-level implementation on gender. While Nigeria's National Gender Policy in Agriculture (2016) is among the most explicit agricultural gender policy instruments in West Africa, mandating gender training for all intervening organizations, sex-disaggregated data, and gender-responsive budgeting, its provisions have not been operationalized through state-level Agricultural Development Programmes (ADPs), extension service staffing, or programme monitoring systems for sesame and cowpea specifically. The underlying reasons are structural and mutually reinforcing: the non-availability of female extension personnel, lack of transport facilities for female staff, absence of sex-disaggregated data for planning, exclusion of women from programme-level decision-making, and women's limited access to land-based collateral, which has locked them out of primary federal credit instruments. Gender commitments embedded in policy documents have not been translated into dedicated budget lines, staffing norms, or performance indicators at state or programme level. The NGPA itself acknowledges that without reliable sex-disaggregated data, implementation of its provisions is fundamentally constrained, producing a situation in which gender commitments remain formally inscribed but institutionally unresourced and operationally invisible at programme delivery level.

This policy gap has direct operational consequences. Women dominate post-harvest handling, drying, cleaning, sorting, processing, and local trade in both value chains, the precise activities that determine SPS compliance, food safety outcomes, and export quality, yet the policy frameworks governing those activities fail to recognize, support, or resource women's roles. The following review presents the GAPo findings, assesses each policy's specific relevance to sesame and cowpea, and identifies the implications and entry points for this project.

5.2 Gender in Agricultural Policy Assessment (GAPo): Summary of Findings

Table 7 presents the GAPo scoring results across thirteen policies, ranked from lowest to highest gender integration. Scores are expressed as the number of gender indicators addressed out of 32. The colour-coded level classification follows the GAPo grading framework: Level 1 (gender-blind) through Level 5 (gender-transformative).

Table 7: GAPo scoring results across thirteen policies, ranked from lowest to highest gender integration

Policy / Programme	GAPo Score (out of 32)	Level	Gender Integration Category	Relevance to Sesame and Cowpea Value Chains
National Food Safety and Quality Bill (2022)	0 (0%)	Level 1	No integration — gender-blind	Directly governs sesame and cowpea food safety standards; complete absence of gender provisions means women as primary food handlers are invisible in regulatory framework

National Policy on Food Safety and Its Implementation Strategy — NPFSIS (2014)	1 (3%)	Level 1	No integration — gender-blind	Governs sesame and cowpea SPS compliance; treats food safety as a purely technical domain despite women dominating post-harvest handling and processing in both value chains
Revised NPFSIS (2024)	1 (3%)	Level 1	Minimal recognition, no measures	2024 revision fails to incorporate any new gender provisions despite evidence that women are primary actors determining SPS compliance outcomes
NSPRI Food Safety Policy 2024–2030	1 (3%)	Level 1	No integration — gender-blind	NSPRI mandate directly addresses post-harvest storage — where women are primary actors. Fails to recognise women as key users of storage technologies or as determinants of SPS compliance
National Policy on the Environment — NPE (Revised 2016)	3 (9%)	Level 1	No integration — gender-blind	Relevant to sesame chemical use and land degradation; women's weeding burdens increase as soils degrade, but the NPE cannot guide gendered environmental responses
Agriculture Promotion Policy — APP (2015–2020)	6 (18%)	Level 2	Low integration — acknowledges inequalities, no specific measures	Sesame and cowpea are explicitly prioritised for export; they mention gender equality as a cross-cutting objective, but lack specific measures. Women's cleaning/sorting for MRL compliance unaddressed
Economic Recovery and Growth Plan — ERGP	8 (25%)	Level 2	Low integration — acknowledges without measures	ERGP's emphasis on non-oil exports aligns with sesame export goals; women's SPS compliance training reframeable as export-enhancing investment, but policy provides no gender tools
National Agricultural Seed Policy — NASP (Revised 2022)	14 (44%)	Level 3	Moderate — some generic and few specific measures	Improved pest-resistant varieties reduce pesticide dependence in cowpea (critical for SPS) and sesame. Women's access to certified seed constrained by land tenure, mobility, financial barriers
Nigeria Digital Agriculture Strategy — NDAS (2020–2030)	20 (70%)	Level 4	Good gender integration in digital domain	Includes targeted digital literacy; relevant to traceability and market information for sesame/cowpea. Women's low digital literacy and phone access documented as barrier in both value chains
National Agricultural Extension Policy — NEP (2017)	26 (80%)	Level 4	Strong gender integration with transformative elements	Strongest mandate for gender-responsive extension: female extension agents, women's groups as entry points, scheduling flexibility. Only 6–15% of Nigeria's extension workers are women; implementation severely constrained
National Agricultural Technology and Innovation Policy — NATIP (2022–2027)	30 (96%)	Level 4/5	Purposefully tackles inequalities through specific measures	Explicitly prioritises cowpea as target crop; strong gender provisions requiring women's access, control and benefit from technology; SAPZs offer pathway for women from labourers to agripreneurs
National Food and Nutrition Policy — NFNP (2016)	31 (98%)	Level 4/5	Comprehensive gender integration with transformative elements	Legitimises women cowpea processors as nutrition actors; supports gender-equitable market participation; intersectional approach reaches young and migrant women in both value chains
National Gender Policy in Agriculture	32 (100%)	Level 5	Comprehensive gender-	Strongest possible mandate for project gender strategy; emerged from 1,200+

— NGPA (2025–2030)			transformative policy	stakeholder consultations; dedicated budget lines from 2026; explicitly addresses discriminatory social norms, GBV, care responsibilities, intersectionality
--------------------	--	--	-----------------------	--

Source: GAPo analysis of policy documents. Gender Integration Index: High (≥75%): NGPA, NATIP, NEP, NFNP; Moderate (40–74%): NDAS; Low (10–39%): ERGP, NASP, APP; Minimal (<10%): NPFSIS 2014, Revised NPFSIS 2024, NPE, NSPRI-FSP; None: Food Safety Bill 2022.

Four overarching findings emerge from the GAPo analysis with direct implications for how this project engages the policy environment:

- **The policies most relevant to sesame and cowpea food safety are the least gender-responsive.** The National Food Safety and Quality Bill (2022), the NPFSIS (2014 and 2024 revision), and the NSPRI Food Safety Policy (2024–2030) all score at Level 1, with zero to one gender indicator addressed. These are the very instruments that govern MRL compliance, post-harvest handling standards, and SPS certification — activities dominated by women. The food safety system is thus structurally misaligned with the people who actually do the work it seeks to regulate.
- **The policies with the strongest gender provisions are the newest and least implemented.** The NGPA (2025–2030, Level 5), NATIP (2022–2027, Level 4/5), and NFNP (2016, Level 4/5) offer strong — in the NGPA's case, transformative — gender mandates. However, all suffer from the same systemic weakness documented across the Nigerian agricultural policy landscape: weak accountability mechanisms, under-resourced gender desks, and the absence of sex-disaggregated monitoring data for sesame or cowpea specifically.
- **The extension policy provides the strongest actionable mandate for this project.** The National Agricultural Extension Policy (NEP, 2017) scores 26 and provides an explicit legislative basis for recruiting female extension agents, designing gender-sensitive materials, scheduling extension visits around women's time constraints, and using women's groups as primary extension entry points. Despite only 6–15% of Nigeria's extension workers being women, the NEP gives this project the policy authority to advocate for and train lead farmers and agro-delaers as risk communicators to complement the under-resourced extension-ADPs on gender-responsive extension delivery. This is a legislated requirement, not a project preference.
- **The NGPA (2025–2030) is the most important new policy development for this project.** Gazetted following an unprecedented year-long consultative process involving more than 1,200 stakeholders across six geopolitical zones, it is Nigeria's first comprehensive gender-transformative agricultural policy. It introduces dedicated budget lines from 2026 onward, explicitly addresses discriminatory social norms, gender-based violence, care responsibilities, and intersectionality, and scores a perfect 32 on the GAPo framework. This project should formally align its gender strategy with NGPA provisions and document how its activities such as gender analysis and sex-diaggregated data collection contribute to NGPA stated objective on data and implementation at state and community level.

5.3 Policy-by-Policy Analysis: Implications for the Sesame and Cowpea Value Chains

Food Safety Policies: Gender-Blind Frameworks Governing Women's Work

The NPFSIS (2014) and its 2024 revision focus on establishing an Integrated Food Safety Management System using a risk-based HACCP approach. However, both treat food safety as a purely technical domain, making no reference to the gendered division of labour that determines food safety outcomes in practice. Women in Benue and Nasarawa States dominate post-harvest drying, cleaning, sorting, and storage of sesame and cowpea — the precise activities through which mycotoxin contamination, pesticide residue accumulation, and foreign matter enter the commodity chain. Yet neither instrument provides gender-responsive guidance for these actors. The NSPRI Food Safety Policy (2024–2030), despite its specific mandate for post-harvest issues, similarly fails to recognize women as primary users of storage technologies or as the key actors whose practices determine SPS compliance. This is particularly consequential for cowpea, where women's storage decisions — including the use and overuse of chemical pesticides in response to weevil pressure — directly determine whether export shipments meet EU MRL standards.

Key GAPo gaps in food safety policies relevant to sesame and cowpea:

- *Indicator 1:* No recognition of women's roles as primary food handlers, processors, and preparers most

exposed to food safety risks

- *Indicator 5:* No requirement for sex- and gender-disaggregated data in food safety monitoring
- *Indicator 22:* No acknowledgement of gendered participation in markets where unsafe products circulate

Project entry points: This project can communicate evidence and expand training / workshops to relevant institutions such as NAFDAC, NSPRI, to communicate risk, advocate for policy reform and explain how women's food safety practices are constrained by lack of resources (tarpaulins, PICS bags, clean drying surfaces) and how providing these resources improves SPS compliance outcomes.

Agriculture Promotion Policy (APP, 2015–2020): Acknowledging Without Acting

The APP (Level 2, 6) aimed to build a high-quality brand for Nigerian agricultural exports and identified sesame and cowpea as priority commodities. It recognized gender equality as a cross-cutting objective but provided no specific measures, budget lines, or indicators. The four value chains receiving the largest APP budget allocations had the lowest women's participation rates (World Bank, 2023). For sesame, where women dominate cleaning and sorting — activities critical to meeting MRL standards — the APP's quality branding agenda was operationally dependent on women's labor but offered no targeted support to women. The Gender Policy in Agriculture (2016), issued concurrently with the APP, mandated FMARD to ensure equal budgeting and planning for women farmers, but gender mainstreaming was absent from APP budgetary architecture, and sesame and cowpea extension services remained male-dominated throughout the policy period.

Project entry points: The project should position women's SPS compliance training as an implementation of the APP's quality brand objective, making visible the contributions the policy acknowledged in principle but never supported in practice. Project evidence on how gender gaps in food safety information undermine export competitiveness can generate pressure for more specific gender provisions in successor frameworks.

National Food and Nutrition Policy (NFNP, 2016): Strong Mandate for Cowpea Interventions

The NFNP (Level 4/5, 31) provides a strong policy mandate for gender-responsive food systems work. For the cowpea value chain specifically, where women's processing and marketing activities directly affect household nutrition, the NFNP legitimizes this project's efforts to train women processors on safe storage, advocate for women's inclusion in value chain upgrading, and design training schedules that accommodate women's multiple care responsibilities. The NFNP's intersectional approach also supports targeted outreach to young women and migrant women farmers, who face compounded barriers in both sesame and cowpea value chains.

National Agricultural Extension Policy (NEP, 2017): The Strongest Project Mandate

The NEP (Level 4, 26) provides the most immediately actionable policy mandate for this project's training, communication and advisory activities. It explicitly recognizes that women face specific constraints — mobility restrictions, time poverty, socio-cultural norms — limiting their access to extension services, and legislates for female extension agent recruitment, gender-sensitive training materials, scheduling flexibility, and women's groups as extension entry points. However, implementation remains severely constrained: currently only 6–15% of Nigeria's extension workers are women, and in many rural sesame and cowpea communities, socio-cultural factors prevent women from interacting with male extension agents, meaning they miss out on climate-smart agriculture training, SPS compliance information, and mechanization support. Low coverage for women is compounded by the structure of the ADP system, estimated at one extension worker per 3,000–5,000 farmers nationally, with outreach patterns that structurally favor male farmers. Interactions occur in spaces women cannot easily access; training schedules ignore women's domestic labor burdens; and cultural norms in northern Nigerian communities — where purdah and gender-segregated public life are prevalent — make it socially unacceptable for male agents to engage women farmers directly. The result is that compliance-critical knowledge on pesticide use, drying standards, and post-harvest hygiene never reaches the actors whose practices determine whether sesame meets MRL and microbiological export thresholds. Conversely, where female extension agents are deployed, evidence from Sub-Saharan Africa consistently shows higher rates of technology adoption and behavior change among women farmers, because female agents can access homesteads and engage women in gender-appropriate settings (Abegunde et al., 2022; Lecoutere et al., 2020).

Project entry points: The NEP provides legislative backing for the project to complement the state ADPs in Benue and Nasarawa efforts by training women lead farmers as risk communicators to improve SPS compliance and to advocate for the deployment of female extension agents to sesame and cowpea LGAs, and for the institutionalization of gender-responsive extension scheduling. This project can co-implement differentiated training approaches by geography. In northern states (Jigawa, Kano, Katsina, Zamfara), SPS compliance training



on IPM, MRL-compliant pesticide handling, and post-harvest hygiene can be delivered and decentralized exclusively by trained women risk communicators in women-only settings, running Tuesday to Thursday, 8:00–11:00am, over a five-day cycle with a follow-up refresher at week six. Trainers must be female, Hausa-speaking, locally embedded, and familiar with Islamic gender norms, with priority LGAs being Hadejia, Ringim, and Jahun (Jigawa) and Bunkure and Tudun Wada (Kano). In Middle Belt states (Nasarawa, Benue, Kogi, Taraba), training on GAP, Good Hygiene and Manufacturing Practices, and post-harvest handling can be delivered in mixed-gender groups provided women constitute a minimum of 60% of participants, running Monday to Wednesday, 8:00am–12:00pm, over a four-day block with a trainer farm visit within three to four weeks. Trainers must have experience with mixed-gender smallholder groups, fluency in Tiv, Igala, or Eggon, and prior SPS or food safety programming exposure, with priority LGAs being Lafia, Doma, and Obi (Nasarawa) and Otukpo and Oju (Benue).

NATIP (2022–2027) and NDAS (2020–2030): Technology Policy with Strong Gender Provisions

The National Agricultural Technology and Innovation Policy (NATIP, Level 4/5, 30) is Nigeria's principal framework for agricultural modernization. It explicitly identifies cowpea as a priority crop and requires that all technology promotion consider women's access, control, and benefit. Its Special Agro-Industrial Processing Zones (SAPZs) offer a concrete mechanism for women's transition from low-income processors to agripreneurs with access to cold chain logistics, packaging, and marketing infrastructure. The project should use NATIP to advocate for women cowpea farmers' inclusion in aggregator training programmes and for the co-design of traceability systems that accommodate low literacy levels.

The Nigeria Digital Agriculture Strategy (NDAS, Level 4, 20) recognizes the gendered digital divide and includes targeted digital literacy provisions. Given that sesame and cowpea actors particularly women demonstrate low digital literacy and a preference for face-to-face communication, NDAS provisions can be applied to design simple, accessible protocols and digital tools: color-coded sacks, basic SMS price alerts, and pictorial record-keeping, as gender-appropriate first steps toward traceability rather than technology-intensive solutions that replicate existing exclusions.

National Gender Policy in Agriculture (NGPA, 2025–2030): The Overarching Framework

The NGPA (Level 5, 32) is Nigeria's most significant recent policy development for this project. Emerging from a year-long consultative process with over 1,200 stakeholders across six geopolitical zones, it is the first comprehensively gender-transformative agricultural policy instrument Nigeria has produced. It explicitly addresses discriminatory social norms, gender-based violence, care responsibilities, and intersectional dimensions including age, disability, ethnicity, and marital status. Critically, it introduces dedicated budget lines for gender activities in agricultural programmes from 2026 onward — addressing the chronic under-resourcing that has undermined implementation of earlier policies.

Project entry points: This project should formally align its gender strategy with NGPA commitments and document how its activities contribute to NGPA implementation at national, state, and community levels. The NGPA's requirement for sex- and gender-disaggregated data provides a mandate for strengthening the project's base line and M&E systems. Project evidence should be fed back to FMAFS's Gender Unit as briefs with specific highlighted actions.

National Agricultural Seed Policy (NASP, Revised 2022) and NSPRI-FSP: Partial Recognition

The NASP (Level 3, 14/32) is particularly relevant because improved, pest-resistant cowpea varieties directly reduce pesticide dependence — a core SPS concern. For sesame, improved varieties can reduce MRL non-compliance through reduced pesticide requirements. However, women's access to certified seed is constrained by land tenure, mobility, and financial barriers that NASP's generic measures do not adequately address. The project should advocate for NASP implementation guidelines that include specific targets for women's access to improved sesame and cowpea varieties, and document how women's use of improved varieties affects pesticide use patterns and SPS compliance.

The NSPRI-FSP (Level 1) presents an immediate advocacy opportunity: partnering with NSPRI to pilot gender-responsive dissemination of hermetic storage technologies (PICS bags) using women's groups as entry points, and documenting women's adoption rates and food safety outcomes to generate evidence and impact stories for similar interventions by other interested partners, projects and programmes.

5.4 Federal and State-Level Gender-Responsive Initiatives in Sesame and Cowpea Producing



States

Beyond the formal policy framework, a number of federal and state-level initiatives have specifically targeted gender inclusion in sesame and cowpea value chains. These provide both models for project design and potential partnership opportunities.

Federal Level: The Sovereign AgroTrade System (SAS) and NWAPDI

The Federal Ministry of Agriculture and Food Security, in partnership with the Nigerian Women for Agricultural Progressive and Development Initiative (NWAPDI), has launched the Sovereign AgroTrade System (SAS), a digital agricultural marketplace designed to empower women and youth. The platform integrates four tools: AgriXchange Marketplace (direct trading and online auctions), NWAPDI Grow (micro-loans, cooperative financing, savings platforms, and mobile payments), AgriCert (quality certification and traceability), and FarmAssure (data-driven farm management). The AgriCert and NWAPDI Grow components are directly relevant to sesame and cowpea value chain actors, offering a potential pathway to quality certification and financial inclusion for women's cooperatives in Benue and Nasarawa.

Benue State: IFAD Value Chain Development Programme (VCDP)

Benue State has been a focal area for IFAD's Value Chain Development Programme (VCDP), which has targeted women producers, processors, and marketers in staple value chains. The VCDP demonstrates the potential of value chain programmes to strengthen women's income, skills, and access to extension services in Benue, and provides an institutional partnership precedent for this project. The VCDP's experience of working with women's groups in Benue — including its approach to group formation, savings mobilization, and market linkage — offers directly transferable lessons for sesame and cowpea activities.

Nasarawa State: NADP and the FSSS Gender Analysis

The Nasarawa Agricultural Development Programme (NADP) has implemented gender-sensitive extension approaches, though coverage remains limited. Nasarawa's inclusion in the Food Systems and Seed Security (FSSS) gender analysis, covering ten northern states, has generated evidence on women's exclusion from seed trials and extension services, and produced recommendations for gender-responsive variety testing protocols directly relevant to this project. The FSSS findings can be cited as existing evidence to accelerate NADP's adoption of gender-responsive extension practices in cowpea and sesame LGAs.

Jigawa and Kebbi States: WACOT Organic Sesame Initiative

In Jigawa and Kebbi States — two of the most significant sesame-producing states in the north — WACOT Limited is implementing an organic sesame initiative supported by a EUR 1.26 million DEG Impulse grant. The programme targets 3,500 smallholder sesame farmers through training in organic production, agroforestry practices, weather alert systems, and financial inclusion support, backed by 100% offtake agreements guaranteeing premium prices for certified harvests. This business-led model demonstrates that private sector partnerships can simultaneously advance gender inclusion and improve SPS compliance. For this project, the WACOT initiative in Jigawa and Kebbi is both a benchmark and a potential collaboration platform for extending gender-responsive sesame support into northern producing states.

Kogi State: Capacity-Building for Women Sesame Producers

Kogi State, an important Middle Belt sesame-producing zone with significant women's value chain participation, offers a model of government-led gender-focused support. The Kogi State Government, through the Ministry of Commerce and Industry in collaboration with NEPC, organised a capacity-building workshop themed '*Empowering Women Sesame Producers for Global Markets Through Good Agricultural Practices (GAP)*', bringing together stakeholders to explore strategies for quality, safety, and sustainability in women's sesame farming. This initiative demonstrates both the political will at state level and a replicable modality — government-convened, multi-stakeholder, women-targeted, GAP-focused — that could be adapted for activities in Benue and Nasarawa.

Kano State (and Wider North): Dawanau and the Limits of Market-Level Gender Engagement

Kano's Dawanau market is the largest cowpea trading hub in West Africa and a critical aggregation point for sesame from northern producing states. Women are present in large numbers as retail traders in Dawanau but are rarely reached by formal extension or SPS compliance training, which is directed at male aggregators and export-focused traders. No state-level gender-specific initiative for women sesame or cowpea traders in Kano has been identified through desk research, representing both a gap and an opportunity. Engaging the Kano ADP gender desk and Dawanau market women's trade associations — even through remote key informant interviews, would provide valuable data on women's market-level constraints and could identify entry points for future project engagement.



6.0 CONCLUSION

Gendered roles in the sesame value chain in Nigeria create horizontal segregation of tasks and inequalities, with women central to quality but marginal in access and agency over productive resources, and men advantaged in markets and decision-making.

Horizontal segregation positions women in labor-intensive, quality-critical production and post-harvest activities, while men dominate capital-intensive operations, chemical decisions, traceability interfaces and lucrative marketing. Combined with women's heavier total workload, limited financial inclusion and restricted access to training, this arrangement systematically limits women's ability to benefit from sesame upgrading, even though their labor is essential to meeting food-safety and export standards.

Unsafe pesticide and storage practices, weak traceability and weak extension services are not simply knowledge problems but rational responses within a distorted system. This leads farmers to resort to hazardous chemicals and rudimentary storage methods because they face intense pressure to deliver quantity quickly in a context of insecurity, poor infrastructure, and markets that undervalue quality. Low awareness of MRLs and banned products, minimal PPE use and widespread ground drying reflect not only information gaps but also entrenched financial and infrastructural constraints. Women's indigenous knowledge, motivation and willingness to use family literacy for learning represent a major, currently under-used asset for shifting practices towards safer, more sustainable methods.

The GAPo analysis reveals policies that recognize gender inequalities rarely include specific measures, budget lines, or accountability mechanisms to address them. Policies with strong gender provisions (NFNP, NEP, NATIP, NGPA, NDAS) provide mandates but require operationalization. Policies without gender provisions (NPFSIS, NPE, Food Safety Bill) create gaps that the project must navigate.

Nigeria has strong gender-responsive policies (NGPA, NEP, NATIP) but these coexist with gender-blind food safety policies (NPFSIS, NSPRI-FSP) that fail to recognise women as primary food safety actors. Implementation gap remains critical. Even policies with strong gender provisions suffer from inadequate resources, weak enforcement, and lack of accountability mechanisms. The NGPA's dedicated budget lines from 2026 offer hope but require sustained advocacy.

The GAPo analysis reveals that while Nigeria has made progress in integrating gender into agricultural and food safety policies, significant gaps remain—particularly in the policies most directly relevant to SPS compliance in sesame and cowpea value chains. The policies that should guide food safety regulation (NPFSIS, Food Safety Bill, NSPRI-FSP) are among the weakest on gender, while the policies with strong gender provisions (NEP, NATIP, NGPA) are not adequately implemented at community level.

For the project, this means operating in a policy environment that provides mandates for gender-responsive approaches (through NEP, NATIP, NGPA) but lacks the specific food safety guidance needed for sesame and cowpea. The project must therefore: Leverage strong policies to justify gender-responsive approaches to partners and stakeholders using project evidence to strengthen SPS compliance and improve food safety.

The sesame and cowpea reports provide the evidence base. The GAPo analysis provides the policy map. The project's implementation provides the opportunity to demonstrate what gender-responsive SPS compliance looks like in practice—and to use that demonstration to model, communicate and influence policy at national level.

State-level variation requires targeted approaches: Gender dynamics and support mechanisms vary significantly across Benue, Nasarawa, Kogi, and Oyo States, requiring context-specific interventions rather than one-size-fits-all approaches.

Digital inclusion offers promise and peril: Digital platforms like SAS and NATIP's Digital Farmer Registry could transform women's access to markets and finance, but risk reinforcing exclusion if not designed with gender-responsive principles.

Recommendations - For Policy Reform



- Communicate briefs on gender issues, perspectives and evidence into gender desk of the relevant agencies, for recognize and inclusion of women farmers, traders as primary food safety actors and inform implementation of specific measures addressing their constraints.

For Programme Implementation

- Scale gender-responsive extension: Train more women lead farmers/traders as risk communicators and compliance champions to complement the under-resourced extension agents; mandate women-only training sessions; schedule activities at times accommodating women's multiple roles; use demonstration plots and community-based delivery.
- Promote women's access to hermetic storage: Partner with NSPRI and private sector to test gender-responsive dissemination of PICS bags through women's groups; document adoption and impact stories.
- Co-develop inclusive traceability systems: Support the establishment of a community of practice of relevant stakeholders and institutions that can co-create and pilot simple, low-tech traceability tools (color-coded sacks, basic record-keeping) accessible to women and men with limited digital literacy; link to SAS digital platforms progressively.
- Link women's groups to premium markets: Facilitate direct linkages through community level fairs where women's producer groups and buyers/aggregators can connect and sell low-residue sesame and cowpea at profitable prices; support women-led aggregation.
- In northern sesame-producing states, SPS compliance training on IPM, MRL-compliant pesticide handling, and post-harvest hygiene must be delivered exclusively by female trainers in female-only settings. Sessions should run Tuesday to Thursday, 8:00–11:00am (three hours maximum), before domestic labor peaks, over a five-day cycle with a follow-up refresher at week six. Trainers must be female, Hausa-speaking, locally embedded, and familiar with Islamic gender norms. Materials must be pictorial and non-literacy dependent.
- In Middle Belt states, training on GAP, Good Hygiene and Manufacturing Practices, and post-harvest handling can be delivered in gender disaggregated settings. Sessions should run Monday to Wednesday, 8:00am–12:00pm (four hours), over a four-day block combining classroom instruction with on-site practical demonstrations, followed by a trainer farm visit within three to four weeks. Trainers must have experience with smallholder groups, fluency in Tiv, Igala, or Eggon, and prior SPS or food safety programming exposure.

For Research and Monitoring

- Strengthen sex- and gender-disaggregated data: Require sex- and gender disaggregated data collection across all interventions; track gender-differentiated outcomes (income allocation, control over benefits, time burden reduction).
- Document and validate indigenous knowledge: Partner with women's groups to document indigenous pest control methods (neem, charcoal, botanicals); test and validate for sesame and cowpea applications.

Addressing identified issues and challenges requires an integrated, gender-responsive approach that links knowledge, incentives, finance and norms.

The evidence indicates that standalone training or technology promotion will be insufficient. The project must ensure that women and men are equitably reached through appropriate channels and schedules, that benefits reflect the priorities of both women and men, that women gain empowerment in resources and decision-making, and that underlying structures, market incentives, extension practices, and gender norms are progressively transformed.

If the project operationalizes these insights through targeted and gender-responsive training, communication research and policy briefs, support for basic SPS infrastructure, and redesigned farmer and buyer relationships, the expected impacts could include safer production, reduced health and environmental risks, more reliable access

to high-value markets, and a more equitable distribution of income and decision-making power between women and men. In doing so, the project will not only strengthen SPS compliance in the sesame sector in Nigeria but also contribute to broader goals of gender equality, sustainable food systems, and resilient rural livelihoods.

Mainstreaming these evidence-based insights can ensure that project interventions facilitate women's equitable participation and benefit from training to improve their livelihoods.

7.0 LESSONS LEARNED

7.1 Challenges

The non-availability of safe and suitable accommodation near the communities visited resulted in a daily drive of approximately two to three hours during the study's execution.

7.2 Best Practices

The team professionalism approach, characterized by respectful and horizontal communication, and hospitality, resulted in the easy divulgence of information by the stakeholders interviewed.

Co-planning of the activities along with identifying contact persons to the communities and markets and the export company office facilitated easy mobilization and progressive data collection in the communities, markets, and company visits.

7.3 The next phase of the project should address identified gaps

The Data Gap: Few policies require sex-disaggregated data collection or gender analysis in M&E systems. Without data, gender gaps remain invisible.

1. The project has documented the gender analysis and value chain development of sesame and cowpea in Nigeria, findings are currently informing a communication campaign and trainings. Project next steps should continue to track sex-disaggregated participation in all training activities; measure gender-differentiated outcomes; document women's control over benefits; communicate this data as briefs to demonstrate the value of sex-disaggregated data. Specifically, this data should be shared with: the Federal Ministry of Agriculture and Food Security (FMAFS) Gender Unit, which is responsible for NGPA (2025–2030) implementation and requires sex-disaggregated value chain evidence for its national reporting framework; NAFDAC and NSPRI, whose food safety policies are due for performance review and where project data on women's exclusion from SPS compliance support can directly inform revision processes; state ADPs in Benue, Nasarawa, Jigawa, and Kogi, where evidence on gender gaps in extension reach can justify reallocation of staffing toward women-majority post-harvest communities; and WTO/STDF Project implementing partners, who are currently designing SPS compliance training without sex-disaggregated targeting and inclusion.

The Extension Challenge: The NEP provides a strong gender-responsive framework, but extension services on the ground are collapsed and under-resourced (as documented in both reports). Farmers report receiving no formal training; information comes from agro-dealers and peers. Project can address under-resourced extension challenge and complement effort by training women and men lead farmers as risk communicators and champions or models for SPS compliance.

2. The project should document its training approach and protocols—inclusion of community-based, farmer, processors and marketers' associations in sessions. This model for how gender-responsive lead farmers to farmer extension and COPs of stakeholders can work should be communicated as success stories. Priority communities and associations to include in COPs and project activities are: in Benue State, women's farmer and processor groups in Otukpo, Oju, Agatu, and Makurdi LGAs, and women's cooperatives affiliated with the IFAD VCDP programme; in Nasarawa State, women's groups in Lafia, Doma, Obi, and Keana LGAs and women marketers associations in Lafia central market; in Jigawa State, women's sesame producer groups in Hadejia, Ringim, and Jahun LGAs and female members of the WACOT organic sesame farmer network; in Kogi State, women's sesame producer cooperatives in Lokoja, Kabba-Bunu, and Ijumu LGAs; and in Kano State, women retail traders and processors at Dawanau market, engaged through the Kano ADP gender desk and existing women's trade associations.

As an example of a gender-responsive extension model to share with state ADPs, the project's SPS compliance training approach combines five elements: (i) female community facilitators recruited from within target LGAs and trained as local food safety advisers and risk communicator experts in local languages; (ii) training scheduled around women's labour cycles — Tuesday to Thursday, 8:00–11:00am

in northern states and Monday to Wednesday, 8:00am–12:00pm in Middle Belt states; (iii) venues selected for women's accessibility — processing centres and cooperative storage facilities rather than ADP offices; (iv) pictorial, local-language materials on pesticide selection, drying standards, and PICS bag use; and (v) women's farmer, processor, and marketer associations used as primary entry points rather than individual farmer targeting. This model should be packaged as a technical note and shared formally with Benue, Nasarawa, and Jigawa ADPs and with FMAFS's extension directorate.

3. **The Intersectional Opportunity:** Policies increasingly recognize intersectionality (NFNP, NEP, NATIP, NGPA). Use evidence from the sesame and cowpea studies to inform the development of a gender integration strategy and action plans document that advocate for intersectional approaches in policy implementation. An intersectional approach in policy implementation means disaggregating not only by sex but by the variables such as age, literacy, land tenure, location, and marital status, that determine which women are actually reached by any given intervention. For sesame SPS compliance, this matters because the women most responsible for post-harvest practices that cause MRL non-compliance are disproportionately older, low-literacy, land-insecure women in remote northern LGAs: precisely those least reached by gender-neutral programmes. A Gender Integration Strategy and Action Plan (GISAP) is a concise operational document — typically 15 to 25 pages — that translates gender analysis findings into time-bound, costed actions with assigned responsibilities and measurable indicators. It is distinct from a gender policy (which sets principles) and a gender analysis report (which diagnoses problems). Addressed to the project's implementing team, state ADPs, and STDF partners, its purpose is to direct training resources, female extension agent deployment, and PICS bag distribution toward the most excluded women, and to demonstrate through evidence how this targeting improves SPS compliance outcomes. The GISAP should be developed as a next-phase deliverable, drawing on the sesame and cowpea studies and GAPo findings, and submitted to FMAFS's Gender Unit as a contribution to NGPA implementation planning.
4. **Policy Reform Window**
Communicate evidence from the sesame and cowpea studies in training and workshops to broaden knowledge of COP members that can inform the food safety polices reform, advocating for specific gender-responsive provisions that address documented barriers to women's access to IPM trainings, compliance to SPS measures.

A. Actions for Sesame Value Chain

Policy Gap	Evidence from Sesame Report	Recommended Action	Target Policy
No recognition of women's role in food safety and quality-critical tasks	Women dominate cleaning, sorting, winnowing activities determining SPS compliance	Advocate for NSPRI-FSP to include women as primary targets for post-harvest training	NSPRI-FSP 2024-30
Weak gender measures in extension	Women cannot attend training; mobility constraints, norm and time poverty	Use NEP mandate to institutionalize women-only or women inclusive SPS training at state level, decentralized community level trainings. Integrate quota mechanism	NEP 2017
No gender in food safety monitoring	Women's practices (drying on ground, handling) affect Salmonella risk	Advocate for sex- and gender disaggregated data in food safety surveillance under new Council	Food Safety Bill implementation

Digital gender gap	Women have lower smartphone ownership, digital literacy, prefer face-to-face	Use NDAS gender provisions to design accessible traceability tools	NDAS 2020-30
--------------------	--	--	--------------

B. Actions for Cowpea Value Chain

Policy Gap	Evidence from Cowpea Report	Recommended Action	Target Policy
No attention to "double-dosing" crisis	Men apply chemicals at harvest; traders reapply unknowingly	Advocate for NPFSIS revision to include value chain coordination in agrochemical safety	Revised NPFSIS 2024
No recognition of women's indigenous knowledge	Women use neem, charcoal for storage but lack guidance	Advocate for, collaborate and support NSPRI to document and validate and disseminate indigenous methods	NSPRI-FSP 2024-30
Weak market inclusion	Women confined to local retail; men access export channels	Use NATIP value chain provisions to link women's groups to premium markets	NATIP 2022-27

C. Cross-Cutting Policy Actions

Action	Policy Lever	Project Contribution
Establish inclusive and gender-responsive SPS training as standard practice	NEP 2017, NATIP 2022-27	Document and disseminate training model from project
Integrate sex and gender data into food safety M&E systems	Food Safety Bill implementation	Share sex-disaggregated data with National Food Safety Council
Promote women's access to modern (hermetic) storage and post-harvest technologies	NSPRI-FSP 2024-30, NATIP 2022-27	Pilot women-group based distribution and trainings; document results
Link women's groups to financial services for SPS investments	NGPA 2025-30, ERGP	Partner with microfinance institutions; track women's access

REFERENCES

1. Chemonics International Inc (2002). *Overview of the Nigerian Sesame Industry*. A paper prepared for The United States Agency for International Development (USAID)/Nigeria RAISE IQC Contract No. PCE-I-00-99-00003-00 Task Order No. 812. Washington, DC: Chemonics International Inc.
2. Dossa KF, Enete AA, Miassi YE, Omotayo AO. Economic analysis of sesame (*Sesamum indicum* L.) production in Northern Benin. *Frontiers in Sustainable Food Systems*. 2023. <https://www.frontiersin.org/articles/10.3389/fsufs.2022.1015122/full>
3. Oyedepo EO, Evbuomwan GO. Effects of Sesame Production on Economic Growth in Nigeria (1981–2021). *Journal of Agriculture and Environment*. 2025. <https://www.ajol.info/index.php/jagrenv>
4. Usman MB, Maharazu I, Alabi O, Oladele O, Aluwong J. Dynamics and competitiveness of Nigeria's sesame production in international trade: Vector error correction method. *Mediterranean Agricultural Sciences*. 2024;37(2).
5. Galadima SA, Isa P. Value chain analysis of sesame in Bade and Jakusko Local Government Areas of Yobe State, Nigeria. *Journal of Humanities and Social Studies*. 2020.
6. Gani M, Tunwari BA, Musa G. Sesame (*Sesamum indicum* L.) baseline survey in Taraba State, Nigeria. *Greener Journal of Agricultural Sciences*. 2023;13(1):1–11.
7. Musa AU, Sani MH, Idi S. Socio-economic characteristics and marketing channel of sesame farmers' willingness to trade through intermediaries in Bauchi State, Nigeria. *Nigerian Journal of Agriculture and Agricultural Technology*. 2023;3(1).
8. Sadiq M, Singh IP, Ahmad M. Sesame as a potential cash crop: an alternative source of foreign exchange earnings for Nigeria. *Journal of Oilseed Research*. 2020.
9. Yakubu Z, Yusuf SH. Problems facing sesame production: A case study of Hadejia Local Government, Jigawa State, Nigeria. *International Journal of Agriculture, Environment and Bioresearch*. 2020;5(1).
10. Teklu DH, Shimelis H, Tesfaye A, Abady S. Appraisal of the sesame production opportunities and constraints, and farmer-preferred varieties and traits, in Eastern and Southwestern Ethiopia. *Sustainability*. 2021;13(20):11346. <https://doi.org/10.3390/su132011346>
11. Katanga Y, Haruna U. Assessment of value chain governance and preference along sesame value chain in North-Western Nigeria. *International Journal of Agricultural Research*. 2022;17(1):1–10.
12. Myint D, Gilani SA, Kawase M, Watanabe KN. Sustainable sesame (*Sesamum indicum* L.) production through improved technology: An overview of production, challenges, and opportunities in Myanmar. *Sustainability*. 2020;12(10):4005. <https://doi.org/10.3390/su12104005>
13. Victor AO, Onyeukwu PE. Agricultural commodity export and Nigeria's Gross Domestic Product between 2009 and 2018. *International Journal of Innovation and Economic Development*. 2022;8(1):18–31. <https://doi.org/10.18775/ijied.1849-7551-7020.2015.81.2002>
14. Lawali S, Boureima S, Idi S, et al. A gender-responsive breeding approach to the intensification of sesame (*Sesamum indicum* L.) production in the Maradi region of Niger. *Frontiers in Sociology*. 2024;9:1368590. <https://www.frontiersin.org/articles/10.3389/fsoc.2024.1368590/full>
15. Mustapha A. Profitability of sesame production in some selected Local Government Areas of Katsina State, Nigeria. *Arid-Zone Journal of Basic & Applied Research*. 2022;10(2):1–8.

16. Eunice Y, Opaluwa HI, Olufemi M, Gbadamosi O. Analysis of sesame production among indigenous and non-indigenous farmers in Yagba East, Kogi State, Nigeria. *American International Journal of Agricultural Studies*. 2023;7(2).
17. Dossa K, Diouf D, Wang L, et al. The emerging oilseed crop *Sesamum indicum* enters the “omics” era. *Frontiers in Plant Science*. 2017;8:1154. <https://doi.org/10.3389/fpls.2017.01154>
18. Girma A. Performance of sesame (*Sesamum indicum* L.) under different supplementary irrigation and nitrogen fertilizer levels in Humera, Northern Ethiopia. *Modern Concepts & Developments in Agronomy*. 2019;4(3).
19. Junaidu M, Abdullahi BS, Ibrahim UG, Nekabari BD. Contribution of sesame production to the livelihood of farmers in Dutsin-Ma LGA, Katsina State, Nigeria. *International Journal of Agricultural Economics*. 2022;7(1):1–9. <https://doi.org/10.11648/j.ijae.20220701.11>
20. Alegbejo MD, Iwo GA, Abo ME, Idowu AA. Sesame: A potential industrial and export oilseed crop in Nigeria. *Journal of Sustainable Agriculture*. 2003;23(1):59–76. https://doi.org/10.1300/J064v23n01_06
21. MAIMUNA AA, Ndagi I, Mohammed U, Baba KC. Effect of IFAD Value Chain Development Programme on women empowerment in Benue and Niger State, Nigeria. *International Journal of Financial Research and Business Development*. 2025.
22. Asare-Nuamah P, Anafo D, Beuchelt T, Akurugu CA. A systematic review of gender in participatory and social learning research in agriculture and land management in Africa. *Frontiers in Sustainable Food Systems*. 2025.
23. Malhotra S, Mantri S, Gupta N, et al. Value chain interventions for improving women’s economic empowerment: a mixed-methods systematic review and meta-analysis. *Campbell Systematic Reviews*. 2024;20(2):e1343. <https://doi.org/10.1002/cl2.1343>
24. Oduol J, Mithöfer D, Place F, et al. Women’s participation in high value agricultural commodity chains in Kenya: strategies for closing the gender gap. *Journal of Rural Studies*. 2017;50:228–239. <https://doi.org/10.1016/j.jrurstud.2017.01.005>
25. Pyburn R, Slavchevska V, Kruijssen F. Gender dynamics in agrifood value chains: advances in research and practice over the last decade. *Global Food Security*. 2023;39:100679. <https://doi.org/10.1016/j.gfs.2023.100679>
26. Prithika C, Anjugam M, Sivasankari B. Deciphering the crux of women’s empowerment in agricultural value chains – a scoping review. *Outlook on Agriculture*. 2024. <https://doi.org/10.1177/00307270241276739>
27. Nwanguma FC, Nwaogu N, Nwankwo AS, et al. Mainstreaming gender issues in the agriculture value chain. *Wah Academia Journal of Social Sciences*. 2025.
28. Kini J. Gender-aware inclusive value chain: a theoretical perspective. *Current Research in Environmental Sustainability*. 2022;4:100167.
29. Nwafor SC, Agba SA, Ndubuisi PO, Ugbem-Onah C. Sesame production in Benue State: a cost–benefit analysis. *Journal of Economics and Sustainable Development*. 2022;13(10): <https://doi.org/10.7176/JESD/13-10-09>
30. Essien J, Biam CK, Asogwa BC. Appraisal of the investment viability of sesame enterprise among smallholder farmers in Benue State, Nigeria. *Journal of Agripreneurship and Sustainable Development*. 2020;3(2).

31. Fadairo, O., Olajuyigbe, S., Osayomi, T., Adelakun, O., Olaniyan, O., Olutegbe, S., & Adeleke, O. (2021). Climate Change, Rural Livelihoods and Ecosystem Nexus: Forest Communities in Agro-ecological zones of Nigeria. Problem tree ref
32. [Chambers, R. \(1994\). Participatory rural appraisal \(PRA\): Analysis of experience. World Development, 22\(9\), 1253–1268.](#)
33. [Marimo, P., Shelton, C., Caron, C., Crichton, R., Madalla, N., Shimwela, M., Swennen, R., van den Bergh, I., & Kibooga, C. \(2021\). Gender-disaggregated seasonal and daily calendars of farmers in Uganda and Tanzania. International Development, Community, and Environment, 355.](#)
34. Usman, M., Razzaq, M., Khan, R., Rehman, M., Ali, M., Gull, S., Yousef, A., Adnan, M., Ercişli, S., & Golokhvast, K. Factors Affecting Postharvest Losses of Sesame (*Sesamum indicum* L.) and Their Mitigation Strategies. *Agronomy*. 2022 <https://doi.org/10.3390/agronomy12102470>.
35. Anyogu, A., Somorin, Y., Oladipo, A., & Raheem, S. Food safety issues associated with sesame seed value chains: Current status and future perspectives. *Heliyon*. 2024; 10. <https://doi.org/10.1016/j.heliyon.2024.e36347>.
36. Olubunmi O. Alawode (2025): Trend and Implications of Nigerian Crop Produce Rejection by Destination Countries (2012-2022), *International Journal of Business & Law Research* 13(2):8-17, April-June, 2025. doi:10.5281/zenodo.15175415
37. Ogbari, M., Folorunso, F., Simon-Ilogho, B., Adebayo, O., Olanrewaju, K., Efebudu, J., & Omoregbe, M. Social Empowerment and Its Effect on Poverty Alleviation for Sustainable Development among Women Entrepreneurs in the Nigerian Agricultural Sector. *Sustainability*. 2024. <https://doi.org/10.3390/su16062225>
38. Adagba, M. A. Socio-Economic Characterisation of Sesame Value Chain in Nigeria. STDF Project 172, co-financed by NEPC and STDF, implemented by NEPC, and supervised by ITC, 2014. Annex to Expanding Export of Sesame Seed and Sheanut/Butter through Improved SPS Capacity Building for Public and Private Sector https://standardsfacility.org/sites/default/files/PG_172_Annex_C- Socio-eco_characterisation_of_sesame_seed_value_chain_in_Nigeria.pdf.
39. Adeyeye, A.O.A. (2023). Agricultural value chain optimisation in a turbulent economy: A study of smallholder farmers in Nigeria (PhD thesis). De Montfort University. Available at: <https://hdl.handle.net/2086/23571> [Accessed 20 February 2026].
40. Agosto & Co. (2025). 2025 Cashew and Sesame Industry Report. Available at: <https://www.agustoresearch.com/report/2025-cashew-and-sesame-industry-report/> [Accessed 20 February 2026].
41. BroadGrain Commodities. (2025). SIMSICA® Sesame Seeds Nigeria. Available at: <https://broadgrain.com/products/sesame-seeds-3-types-9899-and-99-9/> [Accessed 20 February 2026].
42. Daily Trust. (2025). Sesame: N5bn Doma AgroCity To Empower Over 1,000 Farmers. Available at: <https://dailytrust.com/sesame-n5bn-doma-agrocity-to-empower-over-1000-farmers/> [Accessed 20 February 2026].
43. Federal Ministry of Information and National Orientation. (2025). Benue Moves To The Frontline In Non Oil Export: To Boost Sesame And Soya Bean Production For Global Trade. Available at: <https://fmino.gov.ng/benue-moves-to-the-frontline-in-non-oil-export-to-boost-sesame-and-soya-bean-production-for-global-trade/> [Accessed 20 February 2026].

44. Gombella Integrated Services. (2026). Countries That Import Sesame from Nigeria. Available at: <https://gombella.com/countries-that-import-sesame-from-nigeria/> [Accessed 20 February 2026].
45. Jang, S. (2022). Where Are the Main Producing Regions of Nigerian Sesame Seeds? Tridge. Available at: <https://www.tridge.com/ko/market-guides/posts/how-are-sesame-seed-graded> [Accessed 20 February 2026].
46. Oladele, A.O., Aluwong, J., Maharazu, I., Alabi, O.O., Kareem, H., & Ocheni, A. (2025). Analysis of Production Efficiency Among Sesame (*Sesamum indicum*) Farmers in North West, Nigeria: A Stochastic Production Efficiency Frontier Approach. *Tekirdağ Ziraat Fakültesi Dergisi*, 22(3), 704–712. Available at: <https://dergipark.org.tr/tr/download/article-cite-file/1478666/type/2> [Accessed 20 February 2026].
47. Punch Newspapers. (2025). Ebonyi Sesame farmers lament lack of improved seeds, infrastructure. Available at: <https://punchng.com/ebonyi-sesame-farmers-lament-lack-of-improved-seeds-infrastructure/> [Accessed 20 February 2026].
48. Raw Materials Research and Development Council. (2025). RMRDC and NEPC Collaborate to Boost Raw Materials Cluster Development. *Raw Materials 360*. Available at: <https://360.rmrdc.gov.ng/rmrdc-and-nepc-collaborate-to-boost-raw-materials-cluster-development/> [Accessed 20 February 2026].
49. Udousung, I. J., Umoh, C. E., & Akpan, S. B. (2025). Factors influencing the adoption of traditional and orthodox methods of pests control among vegetable farmers in Akwa Ibom State, Nigeria. *Global Journal of Agricultural Research*, 13 (1). <https://eajournals.org/gjar/vol13-issue-1-2025/factors-influencing-the-adoption-of-traditional-and-orthodox-methods-of-pests-control-among-vegetable-farmers-in-akwa-ibom-state-nigeria/>
50. Heinrich Böll Stiftung Nigeria. (2024). Organic pest control and soil health manual: Indigenous knowledge and sustainable agriculture in Nigeria. Abuja: Heinrich Böll Stiftung Nigeria. <https://ng.boell.org/en/2025/09/05/organic-pest-control-and-soil-health-manual>

Policies Reviewed

1. Federal Ministry of Health (FMoH). National Policy on Food Safety and Its Implementation Strategy (NPFSS). Abuja (Nigeria): FMoH; 2014. <https://policyvault.africa/wp-content/uploads/policy/NGA66.pdf>
2. Federal Ministry of Health (FMoH). National Food Safety and Quality Bill. Abuja (Nigeria): FMoH; 2022. <https://nass.gov.ng/documents/billdownload/11055.pdf>
3. Federal Ministry of Health and Social Welfare (FMoHSW). (2024). Revised National Policy on Food Safety and Quality and its Implementation Plan (NPFSSQIP). Abuja, Nigeria: Federal Ministry of Health and Social Welfare.
4. Nigerian Stored Products Research Institute (NSPRI). NSPRI Food Safety Policy (NSPRI-FSP) 2024–2030. Ilorin (Nigeria): NSPRI; 2024. <https://www.nspri.gov.ng/NSPRIFOODSAFETYPOLICY.pdf>
5. Federal Ministry of Environment (FMEEnv). National Policy on the Environment (Revised). Abuja (Nigeria): FMEEnv; 2016. <https://nesrea.gov.ng/policies-guidelines/#:~:text=A.,carrying%20capacity%20of%20the%20environment>.
6. Federal Ministry of Agriculture and Rural Development (FMARD). Agriculture Promotion Policy (APP) 2016–2020. Abuja (Nigeria): FMARD; 2016. https://nssp.ifpri.info/files/2017/12/2016-Nigeria-Agric-Sector-Policy-Roadmap_June-15-2016_Final.pdf



7. Federal Government of Nigeria. (2017). Economic Recovery and Growth Plan (ERGP) 2017–2020. Abuja, Nigeria: Ministry of Budget and National Planning. <https://demo2.acresal.gov.ng/policy/economy/economic-recovery-and-growth-plan/#:~:text=The%20Economic%20Recovery%20and%20Growth,the%20nation's%20most%20priceless%20assets>
8. National Agricultural Seeds Council (NASC), (2023). National Agricultural Seed Policy. Abuja, Nigeria: NASC. <https://seedcouncil.gov.ng/uploads/2020/02/STRATEGIC-PLAN-NASC-FINAL-APPROVED.pdf>
[National Agricultural Seed Policy \(NASP\) 2023](#)
9. Federal Ministry of Agriculture and Rural Development (FMARD). (2020). Nigeria Digital Agriculture Strategy (NDAS) 2020–2030. Abuja, Nigeria: FMARD. https://nitda.gov.ng/wp-content/uploads/2020/11/Digital-Agriculture-Strategy-NDAS-In-Review_Clean.pdf
10. FMARD [Federal Ministry of Agriculture and Rural Development]. 2017. National Agricultural Extension Policy (NEP). Abuja, Nigeria: FMARD. https://rescar.org/storage/dossier_file_etudePublication/nigeria-national-agricultural-extension-policy-1710259119.pdf
11. FMARD. National Agricultural Technology and Innovation Policy (NATIP) 2022–2027. Abuja (Nigeria): FMARD; 2022. <https://agriculture.gov.ng/wp-content/uploads/2024/06/National-Agricultural-Technology-and-Innovation-Policy-NATIP-2022-2027.pdf>
12. Ministry of Budget and National Planning (2016) National Policy on Food and Nutrition in Nigeria. <http://ngfrepository.org.ng:8080/jspui/handle/123456789/3151>
13. Federal Ministry of Agriculture and Food Security (FMAFS). (2025). National Gender Policy in Agriculture and Strategic Plan of Action 2025–2030. Abuja: FMAFS.

ANNEX A: List of participants interviewed.

WOMEN – SESAME VALUE CHAIN

Women Sesame Farmers/Processors FGD conducted at Udei Community on 6 December 2025

1	Saka	Victoria	Woman	Above 35	Sesame Farmers Association	NG	FGD	UDEI
2	Ilyom	Mungwahan	Woman	Above 35	Sesame Farmers Association	NG	FGD	UDEI
3	Akoodo	Patricia	Woman	Above 35	Sesame Farmers Association	NG	FGD	UDEI
4	Iorfa	Bridget	Woman	Above 35	Sesame Farmers Association	NG	FGD	UDEI
5	Mayange	Francisca	Woman	Above 35	Sesame Farmers Association	NG	FGD	UDEI
6	Tom	Hellen	Woman	35	Sesame Farmers Association	NG	FGD	UDEI
7	Judith	Amine	Woman	25–34	Sesame Farmers Association	NG	FGD	UDEI
8	Scolastica	Adi	Woman	Above 35	Sesame Farmers Association	NG	FGD	UDEI
9	Dorcas	Thomas	Woman	Below 24	Sesame Farmers Association	NG	FGD	UDEI
10	Janet	Kaan	Woman	25–34	Sesame Farmers Association	NG	FGD	UDEI
11	Homga	Merga	Woman	Above 35	Sesame Farmers Association	NG	FGD	UDEI
12	Saaraka	Gloria	Woman	Above 35	Sesame Farmers Association	NG	FGD	UDEI
13	Orogbo	Monica	Woman	Above 35	Sesame Farmers Association	NG	FGD	UDEI

Women Sesame Trade FGD conducted at Udei Community on 6 December 2025

SN	First Name	Last Name	Gender	Age	VC category	Country	Guide/	Location
							Tool	
1	Ihiom	Ladia	Woman	44	Sesame Trader	NG	FGD	Daudu
2	Kyabo	Hanna	Woman	30	Sesame Trader	NG	FGD	Daudu
3	Agon	Mary	Woman	39	Sesame Trader	NG	FGD	Daudu
4	Swende	Felicia	Woman	42	Sesame Trader	NG	FGD	Daudu
5	Asom	Mmlumuis	Woman	41	Sesame Trader	NG	FGD	Daudu
6	Terkula	Comfort	Woman	30	Sesame Trader	NG	FGD	Daudu
7	Nor	Ladia	Woman	45	Sesame Trader	NG	FGD	Daudu
8	Injar	Joy	Woman	30	Sesame Trader	NG	FGD	Daudu
9	Terngu	Dorcas	Woman	26	Sesame Trader	NG	FGD	Daudu
10	Akpe	Regina	Woman	50	Sesame Trader	NG	FGD	Daudu
11	Tyo	Magdaline	Woman	20	Sesame Trader	NG	FGD	Daudu
12	Sega	Grace	Woman	25	Sesame Trader	NG	FGD	Daudu
13	Comfort	Tedis	Woman	45	Sesame Trader	NG	FGD	Kadarku

MEN – SESAME VALUE CHAIN

Men Sesame Farmer FGD conducted at Udei Community on 6 December 2025

SN	First Name	Last Name	Gender	Age	VC Category	Country	Guide/ Tool	Location
1	Chahul	Ferdinand	Man	Above 35	Sesame Farmers Association	NG	FGD	UDEI
2	Ilyurr	Sebastine	Man	Above 35	Sesame Farmers Association	NG	FGD	UDEI
3	Ugbeagh	Linus	Man	Above 35	Sesame Farmers Association	NG	FGD	UDEI
4	Dedooku	Aondofa	Man	Above 35	Sesame Farmers Association	NG	FGD	UDEI
5	Shawon	Jacob	Man	35	Sesame Farmers Association	NG	FGD	UDEI
6	Mnyam	Nicodemus	Man	Above 35	Sesame Farmers Association	NG	FGD	UDEI
7	Nule	Pius	Man	Above 35	Sesame Farmers Association	NG	FGD	UDEI
8	Agabi	Robert	Man	Above 35	Sesame Farmers Association	NG	FGD	UDEI
9	Akoobo	Terhemba	Man	Above 35	Sesame Farmers Association	NG	FGD	UDEI
10	Nyigwa	Raphael	Man	Above 35	Sesame Farmers Association	NG	FGD	UDEI
11	Akwa	Edward	Man	Above 35	Sesame Farmers Association	NG	FGD	UDEI
12	Atsenge	Jude	Man	34	Sesame Farmers Association	NG	FGD	UDEI
13	Jimmy	Nyigwa	Man	Above 35	Sesame Farmers Association	NG	FGD	UDEI
14	Akpor	Joseph	Man	Above 35	Sesame Farmers Association	NG	FGD	UDEI

Men Sesame Trader FGD conducted at Kadarku Community on 6 December 2025

SN	First Name	Last Name	Gender	Age	VC Category	Country	Guide/ Tool	Location
1	Joseph	Moses	Man	45	Sesame Trader	NG	FGD	Kadarku
2	Emmanuel	Terwsas	Man	40	Sesame Trader	NG	FGD	Kadarku
3	Stephen	Solomon	Man	42	Sesame Trader	NG	FGD	Kadarku
4	Terzunuwe	Najime	Man	52	Sesame Trader	NG	FGD	Kadarku
5	Ahon	Clifford	Man	30	Sesame Trader	NG	FGD	Kadarku
6	Yussuf	Musa	Man	37	Sesame Trader	NG	FGD	Kadarku
7	Aliu	Seidu	Man	35	Sesame Trader	NG	FGD	Kadarku
8	Uyo	Philip	Man	49	Sesame Trader	NG	FGD	Kadarku
9	Ayuba	Esson	Man	42	Sesame Trader	NG	FGD	Kadarku
10	Mathias	Akaa	Man	56	Sesame Trader	NG	FGD	Kadarku
11	Tarkaa	Alfred	Man	27	Sesame Trader	NG	FGD	Kadarku
12	Felix	Joshua	Man	20	Sesame Trader	NG	FGD	Kadarku

KII PARTICIPANTS

SN	First Name	Last Name	Gender	Age	VC Category	Country	Tool	Training Topic
1	Peter	Ochigbo	M	66	Cowpea Lead Farmer	NG	KII	Ugbokolo community
2	Zarki	Thomas Aloba	M	Above 35	Sesame Farmer/ LBA	NG	KII	Udei
3	Bahago	Okamuoga	M	49	Sesame Aggregator	NG	KII	Lafia
4	Samuel	Aisever	M	31	Agro dealer	NG	KII	Makurdi
5	Ismail	Abubakar	M		Sesame Breeder	NG	KII	Phone call
6	Bernard	Shawa	M	Above 35	Community leader	NG	KII	IGBAM
7	Dooga	Daniel	M	Above 35	Sesame Farmers Association	NG	KII	UDEI
8	Iortyom	Benedict	F	Above 35	Sesame Farmers Association	NG	KII	UDEI
9	Venda	TV	F	48	Sesame Trader	NG	KII	Makurdi
10	Ameh	Perosh Peter	M	44	Sesame Trader	NG	KII	Makurdi
11	Bernabas	Akpophol	M	49	Extension Officer	NG	KII	Makurdi
12	Dr Veronica		F	58	Director of Extension Services	NG	KII	Makurdi
13	Poopola	Abosede	F	60	Cowpea Researcher	NG	KII	Phone call
14	Stanley	Una	M	57	Extension Officer	NG	KII	Otukpo



ANNEX B: Data collection tools

FOCUS GROUP DISCUSSION CHECKLIST

Cowpea and Sesame Farmers/Processors Actors

Target Respondents: Men, and Women, Sesame and Cowpea Value Chain Actors

Opening Session/Remark

Purpose of Discussion:

Good morning/afternoon, everyone. Thank you for agreeing to discuss with us today. We are here to discuss the involvement of men and women in cowpea and sesame production, their awareness of pesticide regulations and SPS protocols, the availability of pesticide- and SPS-compliant cowpea and sesame seeds in the market, communication channels, training needs, and knowledge support for cowpea and sesame production practices. We will also identify agricultural innovations and support that reduce pesticide use, as well as barriers to women's involvement in pesticide regulation, training, SPS compliance, and export market opportunities. The aim is to explore how we can collaboratively develop solutions to help women access training and information on pesticide regulation and SPS compliance, leverage market opportunities, and benefit equitably from cowpea and sesame for food, income, or both.

Your participation today is voluntary. As an essential member of your community and a contributor to the cowpea and sesame value chain, we hope you feel comfortable speaking openly and honestly. If you prefer not to, please let me know, and I will ensure that your name is not associated with any information or views you share.

Of course, you are free not to answer any question or to withdraw from this discussion at any time. However, we would greatly appreciate your input on this profile of cowpea and sesame farming activities in your community, as your knowledge and perspectives are highly valuable to us. We cannot guarantee that you or your community will directly benefit from this study, but the information provided will help improve gender-sensitive and equitable benefits for all participants in agricultural livelihoods, research, and development activities within and outside our country.

Do you have any questions before we begin?

Verbal Consent for Participation

Ask the following consent questions before the start of the focus group discussion:

1. Do you agree to take part in this discussion about cowpea-sesame production, processing and marketing? "A verbal consent of Yes or No would be okay"
2. "This discussion will be audio recorded to enable the research team to transcribe and analyze your responses. Do you agree to be audio recorded during this interview? If at any point in this discussion you decide not to be recorded, you are free to say so."

Note: If a participant does not consent to being recorded, they can still participate but turn off the audio recorder while speaking.

SECTION A THEMATIC QUESTIONS BY OBJECTIVE

1. Objective 1: Examine the current production, processing, storage, and marketing practices and emerging changes among male and female cowpea and sesame actors.

1. Can you describe the most common cowpea/sesame varieties grown here and the typical yield for large-scale vs. small farms?
2. What are the significant differences in technology adoption (e.g., mechanised planting, modern storage) between male and female actors?
3. Which value chain segment (production, processing, marketing) offers the highest profit margin in these communities, and who dominates that segment?

Table 1: Value Chain Profit Analysis (Flip Chart 1)

Value Chain Segment	Estimated Profit Margin	Dominant Gender	
Production			
Processing			
Marketing			

- A. What are the constraints impacting product quality before it reaches the consumer?
- B. Have you noticed any changes in cowpea/sesame production over time? How has cowpea/sesame production changed for you and in this community in the last 5-10 years?
- C. Do the identified changes affect men and women actors differently? How? And why?
- D. Which node of the cowpea/sesame mainly was affected? Why?
- E. Who/What drives the change? **For the facilitator: Probe these aspects: research/extension/market/govt. prog/policy, climate challenges, insecurities, conflicts, curfews etc.**
- F. What do you foresee or anticipate in the next 5-10 years in cowpea/sesame
- I: production ii: processing iii: and marketing? And why?
- G. How will farmers/ processors/ marketers cope with these changes? (Would the occurrence affect men/women, youths/adults differently?)
- H. What immediate actions did your community take as a group to address these changes, if any? Who took the action?
- I. Are there any changes you would like to make but are not able to now? If yes, what change(s) would you like to make? Why are you not able to make this (these) change(s)?

2. OBJECTIVE 2: Gender Sensitive Value Chain Mapping (GSVCM) of cowpea and sesame activities

1. What activities do men and women carry out (solely or jointly) in the cowpea/sesame production to marketing in this community?

The purpose of this question is to understand and learn about all the cowpea-sesame production, processing, or trading-related tasks men and women engage in, who does the tasks, and the purpose of engaging in these tasks. **[For the facilitator: Use a flipchart to capture the activities one after the other. Draw a table with columns.]**

Table 2: Gender Roles, and Participation (Flip chart 2)

Activity / Task	Who participates?(YW, AW, YM, AM – indicate extent using 10 stones)	Why are these HH/community members involved (and not others)?	Purpose of the activity (respondent's viewpoint)	Critical production/management practices(cowpea/sesame)	Key challenges in executing the activity	Decision-maker(s) & women's contribution(production, processing, storage, marketing – and why?)
Land preparation, planting, weeding, harvesting					Biggest challenges during pest management, processing,	Who decides on roles? Is the decision individual or joint, and why?

				storage, and sales	
Purchase of seeds, fertilisers, pesticides, and other inputs					Who decides what to buy and when? How do women influence these decisions?
Input application (fertilisers, pesticides, herbicides)					Who controls timing, dosage, and method of application?
Cleaning, shelling, milling, and other processing activities					Who decides how and when processing occurs? Why?
Storage of cowpea/sesame				Storage-related challenges (pests, moisture, duration)	Who determines the storage duration and method (bulk, bagged, or household)?
Marketing and sales location				Market access and price challenges	Where is the product sold (local market, roadside, distant buyer), and who decides? Why?
Buyers and market relationships				Trust, pricing, and negotiation challenges	Who negotiates sales and chooses buyers? Why?
Use of income and expenditure decisions				Financial constraints	Who decides how income is spent? How do women participate in these decisions?

*1=Owner; 2=Partner; 3=Contract; 4=Lease; 5=Employee/labourer; Key: YW=young women; AW=adult women; YM=young men; AM=adult men

For the facilitator: Buyers-Male/Female traders who come to the village, male/female youths, children, small/medium-scale industry owners etc

Probe- Are there any tasks in the value chain (e.g., distant trading, bulk storage) that women would like to do but currently cannot? Why?

1. Describe the key and diverse roles women play in cowpea and sesame production, processing and marketing in this community.
2. Who holds the ultimate authority over land use and crop income in this community?
3. What cultural or community beliefs or formal/informal laws limit women's participation in certain aspects of cowpea/sesame high-value chain activities, training, new interventions/projects etc.?
4. How has the involvement of women in agricultural projects and associations/cooperatives changed their decision-making power?

Daily Activity Clock Methodology: Using a 24-hour timeline, we will map and detail a typical workday, specifying the start time, duration, and sequence of the main activities performed by men (M) and women (W) in your community including farm labour, domestic chores, processing, and marketing. Based on this schedule, what is the most accessible and conflict-free time window for all actors to attend a technical training session?

Seasonal Activity Calendar Methodology: Mapping the twelve months of the year, please identify the critical periods for the sesame/cowpea production and marketing cycle (e.g., land preparation, planting, harvest, storage) alongside significant non-farming events (e.g., lean season, festivals, peak market price). Probe: Which specific months is the most suitable time to deliver a training?

C. Objective 3: Awareness of Pesticide Regulations, SPS protocols, and Market Availability.

1a. What do you know about regulations regarding the use of pesticides and chemicals on cowpea/sesame during production or storage for pest and disease management and food product safety?

1b. What are the current channels (if any) for dissemination of information on pesticide regulations to farmers, especially women? (Probe for: government organizations like extension agents, direct contact, radio, television, social media – Facebook, WhatsApp, etc.).

Table 3: Information Channel Effectiveness Ranking (Flip Chart 3)

Information Channel	Reach to Men (1-5)	Reach to Women (1-5)	Effectiveness (1-5)	Ranking
Extension agents				
Radio				
Television				
Social media (Facebook)				
WhatsApp groups				
Community meetings				
Farmer associations				
Input suppliers				
Other: _____				

Rating Scale: 1 = Very Poor, 2 = Poor, 3 = Moderate, 4 = Good, 5 = Very Good

1c. How effective are the current channels for disseminating information on pesticide regulations to farmers, especially women? (Facilitator leads discussants into ranking the channels)

2. Have you ever heard of SPS protocols (Sanitary and Phytosanitary) or quality standards required by export markets? What are they?

3. When you buy pesticides or seeds, or sell, are you given information about safe handling, dosage, and withdrawal periods or trained?

4. Where do you source your seeds? Inputs? Are there pest-resistant certified seeds easily available in your local market? Or Storage sacks such as PICS bag (*Purdue Improved Crop Storage, which refers to a type of triple-layer, hermetic bag used to protect stored grains from insects, moisture, and other pests*)

5. (For Women): Are there any barriers (e.g., time, location) that prevent you from attending training sessions on pesticide use/application, food safety or quality standards? Or getting and applying information on pesticide use/application, food safety or quality standards?

6. Have you ever considered selling excess cowpea or sesame to other countries, close or far from Nigeria?

D. Objective 4: Access to and Use of Traceability Systems/Information

1. Do you keep written or (digital) records of your farm inputs, expenses, or sales?

2. How comfortable are you using mobile phones to record data?

3. What is your understanding of a 'traceability system' and perception on certification in SPS procedures for cowpea and sesame production?

4. Describe the traceability system currently used for cowpea/sesame moving from your community to major markets in Benue and to major markets outside Benue (domestic/export).

Table 4: Traceability System Assessment (Flip Chart 4)

Aspect	Current Practice	Gender Gap (M vs F)	Major Challenge
Record-keeping			
Digital tools usage			
Documentation			
Product labeling			
Market certification			
Organic, SPS certification			
Others			

1. Have you or your co-operative ever sought certification (e.g., Global GAP, Organic) for cowpea/sesame product? (If no, why not? –vice-versa)
2. What are the biggest hurdles preventing smallholder value chain actors, particularly women, from fully participating in traceable product marketing chains?
3. What is the digital literacy baseline you have observed among your male vs. female members?
4. (For Women): Are there social or financial reasons why men are more likely than women to interact with buyers who require certified/traceable products?

E. Objective 5: Current Livelihood Status, aspirations, and perceived benefits.

1. Describe how income from cowpea/sesame contributes to your household expenses – food, utilities.
2. How would you assess your overall living condition level compared to others living in your community? And why? *Note: responses could include 'lower level', 'medium level', or 'higher level'.
3. What is your biggest livelihood aspiration related to your involvement in this value chain?
4. What does "benefit" from cowpea/sesame activities mean to you and/or to women specifically? (Probe: Is it income or something else like status, knowledge, or control)

5. In your assessment, what is the average change in livelihood status (income, assets) between a dedicated cowpea/sesame actor and a non-actor in your community/association/market? How does gender influence this difference?

6. What are the non-financial benefits (e.g., social capital, respect) that women gain from participating in the cowpea/sesame value chain? How does this vary for men and women?

(For Women): If you had more control over the income, what is the first thing you would invest in to improve your life or your livelihood?

(For Men): How do you think your wife or female co-workers define success or benefit from your livelihood?

1. What specific support or interventions exist to help women realize their long-term aspirations related to their cowpea/sesame farming/business?

Table 5: Livelihood Benefits Analysis (Flip Chart 5)

Type of Benefit	Impact Level (High/Medium/Low)	
	Men	Women
Financial Benefits		
Income increase		
Asset accumulation		
Loan acquisition/repayment		
Non-Financial Benefits		
Social capital		
Community respect		
Decision-making power		
Network expansion		
Skills development		

E. Objective 6 and 7 (Combined): Examine barriers and enabling factors for women's involvement in pesticide regulations and SPS compliance.

Gender based constraints and opportunities (at each node)

1. Think about attending a training on pesticide use/application for safety and SPS compliance. What stops you from attending (e.g., lack of time, distance, cost, male permission)?
2. What are the biggest difficulties women face when trying to meet production of high-quality standards (SPS) cowpea/sesame seeds?
3. Do you feel comfortable asking questions about chemical use or regulations in mixed-gender training sessions? Why or why not?
4. Do you think that women in this community have the same opportunities as men to manage a cowpea/sesame farm, control income from product sales, and participate in training within and outside the community? Why or why not?

Referring to the highlighted challenges during the gender-sensitive value chain mapping, probe on the severity.

VC NODE (Adapting the Problem Tree Analysis)	Low	Medium	Severe	Extremely severe
Constraint 1				
Source/root causes				
outcome				
Constraint 1				
Source/root causes				
outcome				
Constraint 1				
Source/root causes				
outcome				
Constraint 1				
Source/root causes				
outcome				

5. What would make it easier for women in your community to access and use information on SPS compliance? (Probe: Timing, location, delivery format, etc.)

Table 7: Barriers and Enablers Matrix (Flip Chart 7)

Category	Barriers for Women	Enabling Factors	Priority Actions
Policy/Legal			
Cultural/Social			
Economic/Financial			
Technological			
Knowledge/Skills			

6. What role can women's groups, cooperatives, or female extension agents play in increasing compliance? What specific resources (financial, technological, human, digital) could be mobilised to develop solutions that encourage women's adherence to pesticide regulations?
7. What is the most effective training delivery format (e.g., radio, demonstration plots, and separate women's sessions) for this community

Table 8: Training Delivery Preferences (Flip Chart 8)

Training Format	Men's Preference (1-5)	Women's Preference (1-5)	Accessibility for Women	Recommendation
Radio programs				
TV programs				
Demonstration plots				
Classroom sessions				

Separate women's sessions				
Mobile training units				
Peer-to-peer learning				
WhatsApp/SMS				
Field days				

Rating Scale: 1 = Not Preferred, 2 = Slightly Preferred, 3 = Moderately Preferred, 4 = Preferred, 5 = Highly Preferred

8. What kind of training, community, infrastructure, support, motivation or resources would help you shift to safer farming practices?

Table 9: WOMEN'S ACCESS TO SUPPORT SERVICES OR RESOURCES (WITHIN A DECADE)

VC NODE	Never	Seldom	Always
ACCESS TO MARKET			
*Location of the market			
Number of times access markets a week, month, year			
INPUT SUPPLIES			
Access to chemical stores/regulatory agents			
Attend training on the use of storage chemicals or related technology			
*FINANCIAL SERVICES			
Access to credit			
Largest amount collected			
Source			
EXTENSION SERVICE			
Government			
NGO			
Private			
ASSOCIATION			
Membership (Y/N)			
Ease of attendance (Y/N)			
Leadership position (Y/N)			
Benefits			

*location code: within community, sell to aggregator, rural market, take to urban markets, regulated market, and export market; *Source code: Commercial bank, MFB, Cooperatives, Moneylenders, friends and family

10. Are there any other interventions, resources and support services that you think can help to improve SPS compliance? Across gender and different social segments, involved in the cowpea/sesame value chain in this community?

11. If we had one intervention to enhance women's benefits in the cowpea/sesame value chain, what should it be? (Probe: Credit, land rights, processing technology, training).

12. What support do you need from whom to ensure women have equitable access to training, resources, and markets?

13. What is the best way to ensure women are represented and involved in decisions about the SPS activities in the community?

14. What role can male leaders/partners play in actively supporting women's involvement in SPS compliance and training?

Table 10: Success Indicators Framework (Flip Chart 10)

Indicator Category	Specific Indicator	Measurement Method	Target for Women
Economic			
Income level			
Control over income			
Asset ownership			
Social			
Decision-making power			
Community respect			
Association membership			
Capacity			
Knowledge/skills gained			
Reduced workload			
Technology adoption			
Compliance			
SPS adherence			
Pesticide regulation compliance			
Traceability participation			

Closing Exercise – Participant-Facilitator Interview Session (Horizontal Communication)

This session promotes reciprocal dialogue and transparency by inviting participants to ask the facilitators questions. This technique mirrors the participatory video approach (both front- and behind-the-camera techniques) but is adapted for a group setting, eliminating the need for video recording.

The research team would open the floor for the participants to ask questions about the study or anything else they are curious about. Participants will be reassured that there are no right or wrong questions and that all inquiries are welcome.

- Facilitators will give the respondents 5-10 minutes to think and write down questions they would like to ask the facilitators.
- They would be encouraged to ask questions about the purpose of the research, what they have learned so far, how the findings might benefit the community and about the researchers.
- The facilitators should answer openly, honestly, and respectfully, sharing both study goals and personal reflections. *Hint: The note-taker will also capture this interview for later review.*
- The facilitator will summarise any key points raised during the Q&A and highlight how they connect with the discussion topics.
- Facilitators will ask participants whether hearing from them changed their views on any of the issues discussed.
- Thank participants for their questions and engagement.

CLOSING REMARKS: Thank you very much for your time and valuable insights. Your contribution will significantly help in designing interventions that promote gender equity and sustainable development in the cowpea and sesame value chains.



FOCUS GROUP DISCUSSION GUIDE (Cowpea and Sesame Marketers)

OPENING SESSION

Good (morning/afternoon). Thank you for joining this discussion. We are here to discuss how cowpea and sesame marketers handle product quality, food safety, and compliance with sanitary and phytosanitary (SPS) standards. We want to understand your awareness of these standards, the challenges you face, and how men and women marketers can better access training and market opportunities.

Your participation is voluntary and confidential. Your insights are valuable for improving support to marketers like you. The discussion will take approximately 60-90 minutes and will be audio recorded with your permission.

Any questions before we begin?

VERBAL CONSENT

1. Do you agree to participate in this discussion? Yes No
2. Do you agree with audio recording? Yes No

SECTION A: PARTICIPANT PROFILE

Table 1: Basic Information

SECTION B: THEMATIC QUESTIONS

OBJECTIVE 1: Marketing Practices and Quality Management

- What are the primary sources of cowpea/sesame you purchase for resale? (Probe: direct from farmers, aggregators, processors)
- How do you assess product quality before purchasing? What quality indicators do you look for?
- What storage and handling practices do you use to maintain product quality?
- What are the major quality problems you encounter with cowpea/sesame products? What causes these problems? What are the consequences?
- Who are your main buyers? (Local consumers, institutional buyers, exporters, processors)

OBJECTIVE 2: Gender Dynamics in Marketing

Table 2: Gender Roles in Marketing Activities:

Activity	Men's Role	Women's Role	Joint	Comment
Product sourcing				
Quality assessment				
Price negotiation				
Transportation				
Storage management				
Customer relations				
Income control				



3. What differences exist between male and female marketers in terms of:
 - a. Market access and buyer networks?
 - b. Capital availability?:
 - c. Control over income?:
4. What cultural or social factors limit women's participation in marketing, especially high-value export markets?

OBJECTIVE 3: Awareness of SPS Standards and Pesticide Regulations

- J. Have you heard of SPS (Sanitary and Phytosanitary) standards or food safety
- K. Do buyers ever ask for certified or SPS-compliant products? Which buyers? What do they require?
- L. Do they reject poorly filtered sesame and ones mixed with sand
- M. What do you know about pesticide residue limits in cowpea/sesame? How do you ensure the products you sell are safe and reliable?
- N. What are your current sources of information about food safety and quality standards?

Table 3: Information Sources and Effectiveness

Information Source	Currently Use? (Yes/No)	Effectiveness (1-5)	Accessible to Women? (Yes/No)
Extension agents			
Radio/TV			
WhatsApp/Social media/text message			
Market associations			
Buyers/Exporters			
Government agencies			
Fellow marketers			

Rating: 1=Very Poor, 2=Poor, 3=Moderate, 4=Good, 5=Very Good

OBJECTIVE 4: SPS Compliance Challenges and Barriers

5. What are the biggest challenges you face in meeting quality and safety standards required by: Local buying agent? Export buyers?
6. Specific barriers for women marketers: Do women have equal access to information about SPS requirements? Why or why not? What specific constraints do women face in meeting compliance standards?

Table 4: Barriers to SPS Compliance

2. Have you ever lost business or received lower prices due to quality or safety concerns? Please explain.

OBJECTIVE 5: Traceability and Documentation

9. What records do you keep about the products you sell? (Source, quantity, date, buyer information)
10. Have buyers ever asked for documentation showing where products came from or how they were handled?

11. What challenges do you face in keeping proper records? Do these challenges differ for men and women?
12. What is your experience with digital tools (smartphones, apps) for record-keeping or marketing?

OBJECTIVE 6: Training Needs and Preferences

- A. What training would help you better meet quality and safety standards? (Rank top 3)

Table 5: Training Needs Ranking

Training Topic	Priority (1-5)	Men's Preference	Women's Preference
SPS standards and requirements			
Product quality assessment			
Safe handling and storage			
Pesticide residue management			
Record-keeping/documentation			
Export market requirements			
Certification processes			
Digital marketing tools			

- What training format works best for you?

Table 6: Training Delivery Preferences

Format	Men's Preference (1-5)	Women's Preference (1-5)	Notes
Market-based demonstrations			
Radio/TV programs			
WhatsApp groups			
Separate women's sessions			
Evening/weekend sessions			
Peer learning groups			

Rating: 1=Not Preferred, 5=Highly Preferred

- What time and location constraints do women face in attending training?

OBJECTIVE 7: Market Opportunities and Aspirations

- Are you aware of export opportunities for cowpea/sesame? What prevents you from accessing these markets?
- What support would you need to access higher-value markets that require SPS compliance?
- What are your business aspirations for the next 3-5 years? What would help you achieve them?
- What does "success" or "benefit" mean to you as a marketer? (Probe: income, respect, business growth, control)

OBJECTIVE 8: Recommendations and Priority Actions



- What are the top 4 types of support that would help you comply with SPS standards and access better markets?

Table 7: Priority Support Needs

Priority Rank	Type of Support	Why Important?	Especially Important for Women?
1			
2			
3			
4			

- What existing organizations or groups could help deliver training and support to marketers? (Women's associations, market unions, cooperatives, NGOs)
- How should progress be measured? What indicators show that marketers (especially women) are benefiting?

Table 8: Success Indicators

Indicator	How to Measure	Target for Women
Income increase		
Access to premium markets		
SPS compliance rate		
Training participation		
Business expansion		
Control over income		

CLOSING REMARKS

Thank you for your valuable contributions. Your insights will help design better support for marketers in the cowpea and sesame value chains.

FGD Details:

1. **Date:** _____
2. **Location:** _____
3. **Facilitator:** _____
4. **Note-taker:** _____
5. **Number of Participants:** _____ (Male: _____ Female: _____)
6. **Duration:** _____ minutes

KEY INFORMANT INTERVIEW GUIDE

Cowpea and Sesame Farmers, Processors and Marketing Value Chains Actors in Nigeria



Target Respondents: Community/Association Leader, Agricultural Extension Officer, Key Input Supplier, Lead Farmer (M/F)

OPENING SESSION/REMARK

Purpose of Discussion

Good (morning/afternoon), Sir/Ma. Thank you for agreeing to discuss this with us today. We are here to discuss how men and women are involved in cowpea and sesame production/processing/marketing, their awareness of pesticide regulations, SPS protocols, market availability, pesticide- and SPS-compliant cowpea and sesame seeds, communication sources, training needs, and knowledge support related to cowpea and sesame production and food safety practices.

We will also identify agricultural innovations and support to reduce pesticide use, as well as barriers to women's involvement in pesticide regulations, training, SPS compliance, and export market opportunities. The aim is to explore how we can collaboratively develop solutions to help actors, especially women, to access training and information on pesticide regulation and SPS compliance, leverage market opportunities, and benefit equitably from cowpea and sesame for food, income, or both.

Your participation today is voluntary. As a key leader in your community and a significant contributor to the cowpea and sesame value chain, we hope you feel comfortable speaking openly. If you prefer not to, please let me know, and I will ensure that your name is not linked to any information or views you share.

Of course, you are free not to answer any question or to withdraw from this discussion at any time. However, we would greatly appreciate your input on this profile of cowpea and sesame farming activities in your community/association/market, as your knowledge and perspectives are highly valuable to us. We cannot guarantee that you or your community will directly benefit from this study, but the information gathered will help improve gender-sensitive and equitable benefits for all actors involved in agricultural livelihoods, research, and development activities, both in our country and abroad.

Do you have any questions before we begin?

VERBAL CONSENT FOR PARTICIPATION

Ask the following consent questions before the start of the discussion:

3. Do you agree to take part in this discussion about cowpea-sesame production, processing and marketing?
A verbal consent of Yes or No would be okay
4. This discussion will be audio recorded to enable the research team to transcribe and analyse your responses. Do you agree to be audio recorded during this interview? If at any point in this discussion you decide not to be recorded, you are free to say so.

Note: If a participant does not consent to being recorded, they can still participate but should turn off the audio recorder while speaking.

SECTION A: DEMOGRAPHIC CHARACTERISTICS OF KEY INFORMANTS

Table 1: Basic Information (Flip Chart 1)

Item	Response
1. Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female
2. Age	_____ years
3. Marital Status	<input type="checkbox"/> Single <input type="checkbox"/> Married <input type="checkbox"/> Widowed <input type="checkbox"/> Divorced/Separated
4. Marital Type	<input type="checkbox"/> Polygamy <input type="checkbox"/> Monogamy
5. Household Size	_____ persons
6. Major Area of Specialization/Participation in Cowpea-Sesame Value Chain	<input type="checkbox"/> Production <input type="checkbox"/> Processing <input type="checkbox"/> Marketing

Table 2: Socio-Economic Profile (Flip Chart 2)

Item	Response
7. Education Level	<input type="checkbox"/> No formal <input type="checkbox"/> Primary <input type="checkbox"/> Secondary <input type="checkbox"/> Advanced secondary <input type="checkbox"/> Vocational training <input type="checkbox"/> Certificate <input type="checkbox"/> Diploma <input type="checkbox"/> Degree <input type="checkbox"/> Post-graduate
8. Main Household Income	<input type="checkbox"/> Farming <input type="checkbox"/> Processing <input type="checkbox"/> Trading <input type="checkbox"/> Other (Specify): _____
9. Access to Extension Services	<input type="checkbox"/> Yes <input type="checkbox"/> No
10. Access to Credit	<input type="checkbox"/> Yes <input type="checkbox"/> No

Table 3: Farming Profile (Flip Chart 3)

Item	Response
11. Years of Experience in Cowpea/Sesame Farming/Processing/Trading	_____ years
12. Total Farm Size	
13. Farm Size Under Cowpea/Sesame Cultivation	
14. Main Cowpea/Sesame Varieties Grown	_____

SECTION B: THEMATIC QUESTIONS BY OBJECTIVE

OBJECTIVE 1: Current Production, Processing, Storage, and Marketing Practices

1. Can you describe the most common cowpea/sesame varieties grown here and the typical yield for large-scale vs. small farms?
2. What are the major differences in technology adoption (e.g., mechanized planting, modern storage) between male and female actors?

3. Which value chain segment (production, processing, marketing) offers the highest profit margin in these communities, and who dominates that segment?
4. What are the constraints impacting product quality before it reaches the consumer?

Table 4: Value Chain Profit Analysis (Flip Chart 4)

Value Chain Segment	Estimated Profit Margin	Dominant Gender	Key Success Factors
Production			
Processing			
Marketing			

OBJECTIVE 2: Gender Roles, Participation, and Power Dynamics

1. Describe the key and diverse roles women play in cowpea and sesame production, processing and marketing in this community.
2. Who holds the ultimate authority over land use and crop income in this community?
3. What cultural or community beliefs or formal/informal laws limit women's participation in certain aspects of cowpea/sesame high-value chain activities, trainings, new interventions/projects, etc.?
4. How has the involvement of women in agricultural projects and associations/cooperatives changed their decision-making power?

Table 5: Gender Roles Matrix (Flip Chart 5)

Activity	Men's Role	Women's Role	Joint Role	Decision-Maker
Land preparation				
Planting				
Weeding				
Pest control				
Harvesting				
Processing				
Storage				
Marketing				
Income control				

OBJECTIVE 3: Awareness of Pesticide Regulations, SPS Protocols, and Market Availability

1. What are the current channels (if any) for the dissemination of information on pesticide regulations to farmers, especially women? (*Probe for: government organizations like extension agents, direct contact, radio, television, social media – Facebook, WhatsApp, etc.*)
2. How effective are the current channels for disseminating information on pesticide regulations to farmers, especially women?
(*Facilitator leads discussants into ranking the channels*)
3. What formal mechanisms are in place to ensure the local market sells certified/SPS-compliant cowpea/sesame seed varieties?

4. What role do you play in monitoring residue levels in cowpea or sesame seeds, or in derived food products sold by smallholder farmers/processors in your community?
5. Do you think that women in this community have the same opportunities as men to manage a cowpea/sesame farm, control income from product sales, or participate in training within and outside the community? Why or why not?
6. Are there existing policies or any specific policy documents addressing gender-inclusive awareness creation for SPS/pesticide use?

Table 6: Information Channel Effectiveness Ranking (Flip Chart 6)

Information Channel	Reach to Men (1-5)	Reach to Women (1-5)	Effectiveness (1-5)	Ranking
Extension agents				
Radio				
Television				
Social media (Facebook)				
WhatsApp groups				
Community meetings				
Farmer associations				
Input suppliers				
Other: _____				

Rating Scale: 1 = Very Poor, 2 = Poor, 3 = Moderate, 4 = Good, 5 = Very Good

OBJECTIVE 4: Access to and Use of Traceability Systems

1. Describe the traceability system currently used for cowpea/sesame moving from your community to major markets in Benue and to major markets outside Benue (domestic/export).
2. What are the biggest hurdles preventing smallholder value chain actors, particularly women, from fully participating in traceable product marketing chains?
3. What is the digital literacy baseline you have observed among your male vs. female members?
4. How does your organization/association support farmers/processors/marketers in improving their record-keeping and data submission for traceability?

Table 7: Traceability System Assessment (Flip Chart 7)

Aspect	Current Practice	Gender Gap (M vs F)	Major Challenge
Record-keeping			
Digital tools usage			
Documentation			
Product labeling			
Market certification			
Others			

OBJECTIVE 5: Current Livelihood Status, Aspirations, and Perceived Benefits

1. In your assessment, what is the average change in livelihood status (income, assets) between a dedicated cowpea/sesame actor and a non-actor in your community/association/market? How does gender influence this difference?
2. What are the non-financial benefits (e.g., social capital, respect) that women gain from participating in the cowpea/sesame value chain? How does this vary for men and women?
3. What specific support or interventions exist to help women realize their long-term aspirations related to their cowpea/sesame farming/business?

Table 8: Livelihood Benefits Analysis (Flip Chart 8)

Type of Benefit	Impact Level (High/Medium/Low)	
	Men	Women
Financial Benefits		
Income increase		
Asset accumulation		
Non-Financial Benefits		
Social capital		
Community respect		
Decision-making power		
Network expansion		
Skills development		

OBJECTIVES 6 & 7 (Combined): Barriers and Enabling Factors for Women's Involvement

1. What existing policies/programs/projects have successfully encouraged women's participation in agricultural training in this community/association?
2. Describe some of the key policy or cultural barriers that inhibit women's access to SPS compliance resources.
3. What specific resources (financial, technological, human, digital) could be mobilized to create solutions that will improve women's adherence to pesticide regulations?
4. What is the most effective training delivery format (e.g., radio, demonstration plots, separate women's sessions) that works best for women in this region?

Table 9: Barriers and Enablers Matrix (Flip Chart 9)

Category	Barriers for Women	Enabling Factors	Priority Actions
Policy/Legal			
Cultural/Social			
Economic/Financial			
Technological			
Knowledge/Skills			

Table 10: Training Delivery Preferences (Flip Chart 10)

Training Format	Men's Preference (1-5)	Women's Preference (1-5)	Accessibility for Women	Recommendation
Radio programs				
TV programs				
Demonstration plots				
Classroom sessions				
Separate women's sessions				
Mobile training units				
Peer-to-peer learning				
WhatsApp/SMS				
Field days				

Rating Scale: 1 = Not Preferred, 2 = Slightly Preferred, 3 = Moderately Preferred, 4 = Preferred, 5 = Highly Preferred

OBJECTIVE 8: Actionable Recommendations to Enhance Benefits for Women

1. Based on your experience, what are the top four non-negotiable supports that will encourage actors to adhere to food safety measures and SPS regulations from projects?
2. How can the project structure its training delivery to address the time and mobility constraints faced by women actors?
3. What indicators should be used by the project to measure benefits for women, beyond just increased income (e.g., control over income, reduced workload, increased social status)?
4. What existing institutional partnerships (e.g., women's banks, NGOs) should the project immediately leverage to ensure women's involvement in training?

Table 11: Priority Support Needs Ranking (Flip Chart 11)

Items				

Table 12: Success Indicators Framework (Flip Chart 12)

Indicator Category	Specific Indicator	Measurement Method	Target for Women
Economic			
Income level			
Control over income			
Asset ownership			
Social			
Decision-making power			
Community respect			
Association membership			
Capacity			



Knowledge/skills gained			
Reduced workload			
Technology adoption			
Compliance			
SPS adherence			
Pesticide regulation compliance			
Traceability participation			

CLOSING REMARKS: Thank you very much for your time and valuable insights. Your contribution will significantly help in designing interventions that promote gender equity and sustainable development in the cowpea and sesame value chains.

If you have any questions or additional comments after this interview, please feel free to contact

Interview Details:

- **Date:** _____
- **Location:** _____
- **Interviewer Name:** _____
- **Interviewer Signature:** _____
- **Duration of Interview:** _____ minutes

KEY INFORMANT INTERVIEW GUIDE

Extension Director / Head of Agricultural Extension Services

Project: Gender-Responsive & Market-Compliant Cowpea & Sesame Value Chains

Date:

Interviewer:

Interviewee: Director, Agricultural Extension and Risk Management (Bureau for Agricultural Development and Mechanization)

Duration: 60-75 minutes

Thank you for your time. We are speaking with you today as part of a broader study examining the cowpea and sesame value chains within Benue State. A key objective of this research is to understand institutional perspectives on critical areas, including the state of extension services, gender inclusion, and awareness of pesticide regulations, compliance with Sanitary and Phytosanitary (SPS) standards, and market access pathways. Your insights, drawn from your leadership role, will be invaluable in shaping practical recommendations that aim to strengthen agricultural support systems and foster an environment where all farmers, particularly women, can thrive.

We would like to emphasize that your participation in this interview is voluntary. You have the right to decline to answer any question or to conclude the interview at any point. All information you share will be treated with the strictest confidence. In any reporting or publications, your responses will be anonymized, and no specific comments will be attributed to you personally without your explicit permission.

To ensure we accurately capture and reflect your insights, we would like to request your permission to audio-record this conversation. May we proceed with recording?



3. Yes
4. No

Part B: Interview Questions

Section 1: Background and Institutional Role

- 1.1. Can you describe your professional background and journey to your current role?
1.2. What is the current structure and mandate of the Bureau for Agricultural Development and Mechanization (formerly Benue ADP)?
1.3. How has the integration of mechanization changed the scope and focus of extension services in Benue State?

Section 2: Extension Service Capacity and Challenges

- 2.1. What is the current state of extension agent capacity in Benue State?
2.2. You mentioned profiling 520 new extension agents. What is the strategy for recruitment, training, and deployment?
2.3. What are the main challenges in delivering effective extension services, especially in insecure areas?
2.4. How does the shortage of extension agents affect the flow of information between research institutions and farmers?

Section 3: Focus Crops – Beniseed and Cowpea

- 3.1. What is the importance of beniseed (sesame) and cowpea in Benue State's agricultural portfolio?
3.2. How has insecurity affected the production of these crops, particularly in major producing LGAs?
3.3. Are there specific extension programs or technologies being promoted for beniseed and cowpea?
3.4. How do you connect farmers with improved seed varieties (e.g., Sudan variety for beniseed, IAR varieties for cowpea)?

Section 4: Safe Production, Storage, and Market Compliance

- 4.1. 4.1.1. What practices are promoted to reduce unsafe pesticide use in beniseed and cowpea?
4.2. How are farmers advised on post-harvest handling and storage to minimise chemical contamination?
4.3. What is your approach to promoting SPS (Sanitary and Phytosanitary) compliance among smallholder farmers?
4.4. Are there linkages between your office and export-oriented companies (e.g., Olam) regarding quality standards?

Section 5: Gender Inclusion in Extension and Agriculture

- 5.1. What is the gender breakdown among farmers in Benue State, particularly for beniseed and cowpea?
5.2. How is gender balance considered in the recruitment and deployment of new extension agents?
5.3. What barriers do women face in accessing extension services, training, and market opportunities?
5.4. Are there specific programmes or approaches to ensure women benefit from mechanisation initiatives?

Section 6: Communication Channels and Partnerships

- 6.1. 6.1.1. Which communication channels are most effective for reaching farmers (e.g., radio, traditional rulers, religious centres)? 6.2. How do you collaborate with research institutions (e.g., NCRI, IITA) to develop and disseminate technologies?
6.3. Are there partnerships with private-sector actors or NGOs in the extension space? How are they regulated?
6.4. What type of external support or partnerships would most help revitalise extension services in Benue?

Part C: Closing and Next Steps

7.1 Final Thoughts

- O. Is there anything else you would like to add regarding extension services, beniseed/cowpea value chains, or gender inclusion?
- P. What is your vision for agricultural extension in Benue State over the next five years?

7.2 Follow-Up and Appreciation

- 7. We may follow up for clarification or additional information.
- 8. Thank you for your valuable time and insights.

KEY INFORMANT INTERVIEW GUIDE

AGRO-INPUT DEALERS

Project: Gender-Responsive and Market-Compliant Cowpea and Sesame Value Chains

Target Respondent: Registered Agro-Chemical Dealer / Stockist with minimum 3 years experience

Interview Mode: Face-to-face / In-person

PART A: INTRODUCTION & INFORMED CONSENT

1.1 Interviewer self-introduction, role and project affiliation.

1.2 Purpose of discussion:

We are discussing how men and women are involved in cowpea and sesame production, their awareness of pesticide regulations and safe use, compliance with market standards (including Sanitary and Phytosanitary – SPS – requirements), sources of communication, training needs, and innovations to reduce pesticide risks. We also want to understand barriers that may prevent women from participating fully in training, regulation compliance, and export markets.

1.3 Voluntary participation and confidentiality:

Your participation is voluntary. You can choose not to answer any question or to stop the interview at any time. Your name will not be linked to your responses in any report. While we cannot promise direct benefits, your insights will help shape more inclusive and safe agricultural support programmes.

1.4 Recording permission:

May we audio-record this discussion to ensure we capture your views accurately?

Proceed only after verbal consent.

PART B: CORE DISCUSSION TOPICS

2. CROP FOCUS & BUSINESS PROFILE

(~8 minutes)

2.1 Which crops are most commonly grown by your customers in this area?

2.2 Between cowpea and sesame (beniseed), which one do your customers request inputs for more often? What influences this?

2.3 How long have you operated as an agro-input dealer? What is your professional or educational background in agriculture?

3. PESTICIDE USE PRACTICES FOR COWPEA & SESAME

3.1 Walk me through the season for **sesame**:

5. What products do farmers typically use at planting (e.g., pre-emergence herbicides)?
6. What do you recommend for weed control, and at what growth stage?
7. Do farmers apply insecticides shortly before or during harvest? If yes, how do you advise them?

3.2 For **cowpea**, what are the most common insect/disease problems and what chemicals do you recommend? Is the usage pattern similar to sesame?

3.3 Storage practices:

- What chemicals or methods do farmers or traders use to store these crops after harvest?
- How are these storage chemicals applied (e.g., mixed directly with grain, placed in a rag, as tablets)?
- Who uses storage chemicals more farmers or marketers?
- Are you aware of hermetic storage (e.g., PICS bags)? Why do you think they are not widely used here?

4. INFORMATION SOURCES AND DEALER–FARMER INTERACTION

- 4.1** When a customer comes to your shop, how do they usually request products by name or by describing a problem?
- 4.2** Where do you think farmers get information about what pesticides to use (other farmers, radio, extension agents, you, etc.)?
- 4.3** When recommending a product, do you explain dosage, timing, pre-harvest interval, and safety precautions? Do farmers give you feedback later?
- 4.4** How do you handle a situation where a farmer insists on a product you believe is unsafe or inappropriate?

5. KNOWLEDGE, TRAINING AND SECTOR CHALLENGES

- 5.1** How did you gain your knowledge about pesticides and their correct use?
- 5.2** Do pesticide or seed companies provide you with training or technical updates? If yes, how useful are they?
- 5.3** In your view, what is the general knowledge level among agro-dealers here? Are there many who may give incorrect advice?
- 5.4** What are the biggest challenges in your business?

(If needed, probe on fake/adulterated products)

- a. How do you identify counterfeit products?
- b. How effective are regulators (e.g., NAFDAC, Croplife) in your experience?
- c. What should be done better to control fake agro-inputs?

6. GENDER DYNAMICS IN THE VALUE CHAIN

- 6.1** Who are your main customers for cowpea/sesame inputs—men, women, or both?
- 6.2** Who usually decides which inputs to buy and who applies them on the farm?
- 6.3** Do you notice differences in how men and women seek information or follow usage instructions?
- 6.4** Are there women agro-input dealers in this area? In your experience, do pesticide companies employ women in field or technical roles?
- 6.5** What barriers might prevent women from accessing training, understanding pesticide regulations, or tapping into export market opportunities?

7. INNOVATIONS AND SUPPORT NEEDS

- 7.1** Are you aware of any practices or technologies that help reduce pesticide use or ensure safer storage?
- 7.2** What kind of training or information would be most useful for you as a dealer?



- 7.3 What support do farmers most need to produce safer, market-compliant crops?
7.4 If you could suggest one or two actions for this project to help farmers and dealers, what would they be?

PART C: CLOSING

Is there any other important issue we have not discussed that you feel is relevant?

We may share a summary of findings from all interviews in the future.

Thank you for your time and valuable insights. Your perspective is crucial to this work.

Key Informant Interview Guide for Offtaker/Aggregator

Project: Enhancing Market Compliance, Quality, and Gender Inclusion in Beniseed Value Chains

Location:

Interviewer:

Interviewee Code:

Date:

Duration:

PART A: INTRODUCTION AND CONSENT

Good day, and thank you for taking the time to meet with us. We are from [Organization/Project Name], and we are currently conducting a study on the beniseed (sesame) value chain. Our aim is to better understand the market dynamics, quality considerations, challenges, and opportunities within the sector from the valuable perspective of key actors like yourself.

In this discussion, we hope to learn from your experience as an offtaker or aggregator. We will be covering topics such as your procurement practices, quality standards, market linkages, any training you have received, gender dynamics in the sector, and the challenges you encounter. Your insights are crucial and will help inform future programs and initiatives designed to improve the sector for all participants.

Please note that your participation is entirely voluntary. You are free to choose not to answer any question and may end the conversation at any point without any negative consequences. All information you provide will be handled with strict confidentiality; your name and identity will be kept private, and we will use codes in any reports or documentation. To ensure we accurately capture your views, we would like to request your permission to audio-record our conversation.

Would you be comfortable with us audio-recording this discussion?

B. Yes

C. No

PART B: CORE DISCUSSION TOPICS

Section 1: Business Profile and Experience

- 1.1. How long have you been in the beniseed aggregation business?
- 1.2. What motivated you to enter this business?
- 1.3. What geographic areas do you source from? (e.g., Nasarawa, Benue, Taraba, Plateau, Kogi)
- 1.4. What is your typical annual volume (in bags or tons) and turnover range?

Section 2: Procurement and Quality Assurance (15 minutes)

- 2.1. Describe your process for sourcing beniseed from farmers or local markets.
- 2.2. What quality parameters do you look for when buying? (e.g., color, dryness, purity, variety)

2.3. Probe on adulteration:

- Have you encountered issues with adulteration (e.g., stones, sand, other materials hidden in bags)?
- How do you detect such practices?
- What actions do you take when you discover adulterated produce?

2.4. Probe on drying practices:

- Are you aware of farmers using herbicides or chemicals to speed up drying?
- How can you tell the difference between naturally dried and chemically dried beniseed?
- What is the impact on quality, weight, and marketability?

- 2.5. How do you handle storage before selling to buyers/companies?

Section 3: Market Linkages and Pricing

- 3.1. Who are your main buyers? (e.g., processing companies, exporters, intermediaries)
- 3.2. How are prices determined? Do buyers set fixed prices or is there negotiation?
- 3.3. Have you observed significant price fluctuations over the years? What drives these changes?
- 3.4. What are the payment terms? (e.g., upfront, after delivery, installment)
- 3.5. Are there formal contracts or informal agreements with buyers?
- 3.6. How do export companies communicate their quality requirements to you?

Section 4: Training and Support

- 4.1. Have you received any training from buyers, companies, or government programs?
 - If yes, what did the training cover? (e.g., quality standards, grading, business skills)
 - How useful was it?
- 4.2. Do these programs provide inputs (e.g., seeds, bags) to farmers through you?
- 4.3. Do you train farmers on good practices? If yes, what do you teach them?
- 4.4. How are training participants selected? Do genuine farmers usually benefit, or is there "elite capture"?

Section 5: Gender Dynamics

- 5.1. In your experience, what percentage of beniseed farmers are women? Are there regional differences?
- 5.2. Do women face specific challenges in production or selling their produce?
- 5.3. Are there women aggregators in your network? What is their proportion?
- 5.4. In training programs, are women adequately represented? If not, what barriers exist?
- 5.5. How do household dynamics (e.g., decision-making, control over income) affect women's participation?

Section 6: Challenges and Recommendations

- 6.1. What are the biggest challenges in your business? (e.g., capital access, price volatility, adulteration, insecurity, transportation)
- 6.2. How does insecurity affect sourcing, farmer production, and your operations?
- 6.3. What role should government play in improving the beniseed sector?
- 6.4. What role should private companies (buyers/exporters) play?
- 6.5. If you could suggest three actions to make the beniseed market more profitable and fair for all, what would they be?

PART C: CLOSING

7.1 Final Opportunity

9. Is there any important issue we haven't discussed that you'd like to mention?

7.2 Follow-up Permission



5. May we contact you for clarification or follow-up if needed?

7.3 Gratitude - Thank you sincerely for your time and valuable insight

Annex C: Summary Results Table: Gender Integration in Nigerian Policies (GAPo Indicators)

c	GAPo Indicators	NPFSIS (2014)	APP (2015–20)	NFNP (2016)	NPE (2016)	Food Safety Bill (2022)	ERGP	NEP (2017)	NATIP (2022–27)	NGPA (2025–30)	Revised NPFSIS (2024)	NDAS (2020–30)	NSPRI-FSP (2024–30)	NASP (2022)
1	Recognizes women's roles/challenges	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Gender equality as explicit objective	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes
3	Measures to address gender inequality	No	Yes	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	Partial
4	Promotes women's participation in policy processes	No	No	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	No
5	Promotes sex-disaggregated data	No	No	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	Partial
6	Supports gender capacities in institutions	No	No	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	No
7	Budget lines for gender activities	No	No	Partial	No	No	No	No	Partial	Yes	No	Partial	No	No
8	Gender indicators for M&E	No	No	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	No

9	Mentions national gender mandates	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes
10	Mentions international gender mandates	No	No	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	Yes
11	Has gender-specific agriculture policy	No	No	No	No	No	No	No	No	Yes	No	No	No	No
12	Other gender-related considerations	No	No	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	No
13a	Acknowledges discriminatory social norms	No	No	Yes	No	No	No	Yes	Yes	Yes	No	No	No	Partial
13b	Measures to address discriminatory norms	No	No	Yes	No	No	No	Partial	Yes	Yes	No	No	No	No
14a	Acknowledges gender & climate change	No	No	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No	No
14b	Measures for gender & climate change	No	No	Yes	Partial	No	No	Yes	Yes	Yes	No	No	No	No
15a	Acknowledges gender-based violence (GBV)	No	No	Yes	No	No	No	No	Yes	Yes	No	No	No	No

15b	Measures to address GBV	No	No	Yes	No	No	No	No	Yes	Yes	No	No	No	No
16a	Acknowledges care responsibilities	No	No	Yes	No	No	No	Yes	Yes	Yes	No	No	No	No
16b	Measures to address care responsibilities	No	No	Yes	No	No	No	Yes	Yes	Yes	No	No	No	No
17a	Intersectional approach	No	No	Partial	No	No	No	Yes	Yes	Yes	No	Partial	No	Partial
17b	Intersectional measures	No	No	Partial	No	No	No	Yes	Yes	Yes	No	No	No	No
18a	Acknowledges gender in land	No	No	Yes	Partial	No	No	Yes	Yes	Yes	No	No	No	Yes
18b	Measures for gender in land	No	No	Yes	No	No	No	Yes	Yes	Yes	No	No	No	No
19a	Acknowledges gender in rural organizations	No	No	Yes	No	No	No	Yes	Yes	Yes	No	No	No	Partial
19b	Measures for gender in rural organizations	No	No	Yes	No	No	No	Yes	Yes	Yes	No	No	No	No
20a	Acknowledges gender in financial services	No	No	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes
20b	Measures for gender in financial services	No	No	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	No

21a	Acknowledges gender in rural employment	No	No	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	No	Partial
21b	Measures for gender in rural employment	No	No	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	No
22a	Acknowledges gender in markets/value chains	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	Partial	Partial
22b	Measures for gender in markets/value chains	No	Partial	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	No
23a	Acknowledges gender in ag research/extension/tech	No	No	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	Yes
23b	Measures for gender in ag research/extension/tech	No	No	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	Partial
	Total	1	6	31	3	0	8	26	30	32	1	20	1	14

10.0 PHOTO GALLERY



Field Investigators with Lead farmer (white top) in Udei



Photo session after a KII and Community entry session with community head of Igbam



Men Sesame Farmers FGD in Udei Community, GUMA LGA in Benue State



Men Sesame Farmers Group photo after FGD session in Udei Community, GUMA LGA in Benue State



Women Sesame Farmers FGD session in Udei Community, GUMA LGA in Benue State



Women Sesame farmers group photo after FGD session in Udei Community, GUMA LGA in Benue State



KII with the female lead farmer in Udei Community, GUMA LGA in Benue State



KII with the male lead farmer in Udei Community, GUMA LGA in Benue State



Sun-drying of harvested sesame on the field



A sample of freshly threshed sesame seeds



Women Sesame Traders (Biranda) FGD session in Daudu, GUMA LGA in Benue State



Men Sesame Traders (Biranda) FGD session in Kadarku market in Nasarawa State



Men Sesame Traders (Biranda) FGD session group photo in Kadarku market in Nasarawa State



KII with sesame aggregator Biranda (aggregator/LBA) in Daudu community trained by OLAMS Company in Makurdi, Benue State



KII interview with a male sesame aggregator in Lafia in Nasarawa State



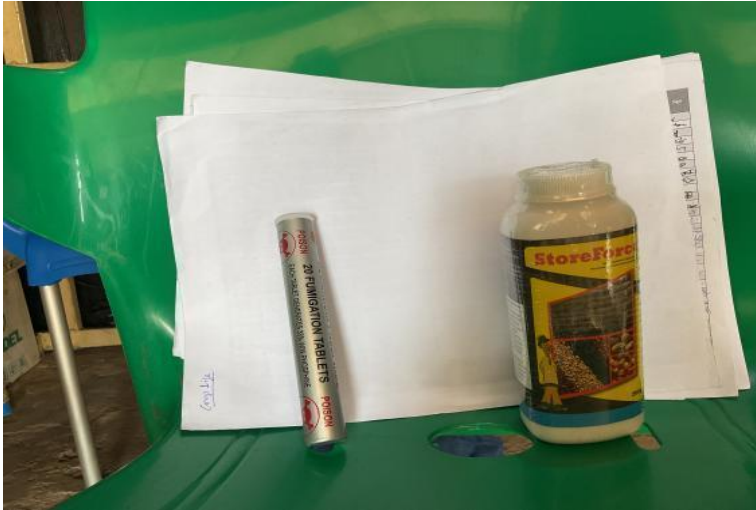
KII interview with agro-dealer in Makurdi in Benue State



A sample of a diseased sesame plant is being shown to the team during a KII session with an agro-dealer and a sesame farmer



Photo session after a KII with an Agro-input dealer in Makurdi



A Picture showing some agrochemicals used in storing sesame seeds



Not so commonly used a sample of PIC bag for chemical-free storage of sesame seed



KII session with the Director of Extension, in Makurdi Office, Benue State



A photo session with the Director of Extension, BNARDA, Makurdi Office, Benue State