Food and Agriculture Organization of the United Nations

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Stakeholder Mapping for Integration of Opportunity Crops into African Food Systems

an analytical report by the Food and Agriculture Organization of the United Nations (FAO) and the Forum for Agricultural Research in Africa (FARA) based on 84 institutional responses collected across Africa and beyond

Explicating Stakeholder Landscape, Capacities, Constraints and Partnership Opportunities

August 2026



Stakeholder Mapping for Integration of Opportunity Crops into African Food Systems

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Editorial note

This report presents findings from an online survey of organizations working on opportunity crops, forgotten foods and neglected and underutilized species (NUS). Eighty-four complete institutional responses were received between 17 April and 5 May 2026. The survey was distributed purposively through institutional and professional networks. The results therefore describe the responding network only and are not statistically representative of all organizations working in this field in Africa. Organization types, countries, activities and budgets are as reported by respondents [and have not been independently verified]. For multiple-response questions, percentages do not sum to 100. Names, email addresses and telephone numbers were excluded from the analysis and from all tables and figures. Any listing in a future stakeholder directory will be subject to verified consent.

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Executive Summary

This report summarizes the findings of a stakeholder-mapping survey, focused on organizations and networks engaged with opportunity crops, forgotten foods, neglected and underutilized species (NUS), and orphan crops in Africa. The survey yielded 84 complete institutional responses collected between 17 April and 5 May 2026. Of these, 73 respondents operated in 15 African countries, while 11 indicated activities outside Africa. The results offer an initial structured overview of the capabilities, priorities, operational constraints, and partnership interests within the surveyed ecosystem.

The mapping indicates a committed yet unevenly developed ecosystem. Research and academic institutions dominate the network, with 67 respondents (79.8%) identifying with this stakeholder category. Universities and research institutes together comprised 52 of the 84 principal organization types. This composition provides the emerging continental platform with a robust knowledge base in agronomy, breeding, seed systems, nutrition, climate resilience, germplasm, and biodiversity. However, there is a notable representation gap among farmer organizations, financial institutions, market actors, and specialized private enterprises.

Operational activities are primarily focused on research, farmer training, and production support. Specifically, 69 organizations conduct research and development, 60 provide farmer training, 47 support crop production, and 45 engage in community mobilization. In contrast, commercial functions are considerably less prevalent: 32 organizations reported processing or manufacturing, 20 are involved in branding and packaging, 12 in retail or marketing, 11 in aggregation, 10 in export promotion, 8 in trading, and 8 in investment or financing. The principal strategic challenge is not solely the generation of knowledge, but also the development of institutional pathways that connect conserved diversity and research outputs to seed supply, processing, consumer demand, procurement, and viable markets.

Financing emerges as the most significant cross-cutting constraint. Seventy-nine respondents (94.0%) identified lack of funding as a barrier, and 63 (75.0%) referenced financing or investment in their open-ended support requests. Of all respondents, 33 reported annual NUS budgets below USD 10,000, while 27 declined to disclose their budget and 6 did not respond. Additional prominent barriers include limited public awareness, insufficient policy support, inadequate value-addition technologies, weak seed systems, underdeveloped extension services, insufficient processing infrastructure, and low private-sector engagement.

There is exceptionally strong demand for coordinated continental action. Seventy-nine respondents (94.0%) indicated a definite willingness to collaborate with an Africa-wide platform or Community of Practice, while the remaining five responded "Maybe." Eighty-one organizations requested inclusion in a stakeholder directory, and all 84 consented to share contact information with potential collaborators. The most frequently requested partnership modalities include research collaboration, capacity development, technology transfer, knowledge sharing, and consumer-awareness campaigns.

Box 1. Key messages

- Build the platform as an action-oriented research-to-market alliance, rather than only an information network.
- Diversify participation by deliberately recruiting farmer organizations, processors, retailers, investors, financial institutions, chefs, procurement agencies and consumer platforms.
- Establish a catalytic financing facility for collaborative research, seed-system development, value addition, market testing and enterprise incubation.
- Develop crop- and value-chain clusters around the most widely reported species while retaining mechanisms for locally important species.
- Connect research evidence to policy, public procurement, school feeding, nutrition programs, climate strategies and national investment plans.
- Create a governed, consent-based directory and knowledge hub with clear data stewardship, updating and partnership-matching functions.

1. Introduction

Africa possesses a rich diversity of indigenous and locally adapted food species that have historically supported nutrition, cultural identity, resilience and rural livelihoods. Many of these species now receive limited attention in formal research, seed systems, extension, procurement, investment and markets. They are variously described as forgotten foods, neglected and underutilized species, orphan crops, indigenous foods or opportunity crops. However, “Opportunity crops” is the latest label impressed by political leaders and technocrats. Their renewed integration into food systems can support dietary diversity, climate adaptation, livelihood diversification and agrobiodiversity conservation.

The stakeholder landscape is fragmented across universities, research institutes, genebanks, government agencies, farmer groups, civil society organizations, processors, enterprises, development partners and continental bodies. Effective transformation therefore requires a clearer understanding of who is working on which species, at what scale, with what capabilities, and under which constraints. This survey was designed to provide that foundation and to assess readiness for an Africa-wide stakeholder directory and Community of Practice.

1.1 Objectives

- Identify and profile organizations working on forgotten foods and NUS.
- Characterize institutional mandates, geographical reach, thematic expertise and commodity portfolios.
- Document activities, comparative capabilities, constraints and support needs.
- Assess interest in collaboration, partnership modalities and inclusion in a continental directory.
- Generate evidence for platform design, policy engagement, research networking and investment development.

2. Survey Methodology

A structured online survey administered through Google Forms was used for the stakeholder-mapping exercise. The questionnaire was purposively distributed through institutional and professional networks encompassing agricultural research organizations, universities, government ministries and agencies, civil-society platforms, private-sector organizations, farmer organizations and other relevant actors within Africa's food-systems landscape. This broad institutional coverage was intended to identify key stakeholder groups and assess their roles, interests, capacities and potential contributions to integrating forgotten foods into food-system transformation processes. Systematic identification and differentiation of actors are central elements of stakeholder analysis (Reed et al., 2009).

The survey generated 84 complete institutional responses between 17 April and 5 May 2026. Seventy-three respondents were headquartered in 15 African countries, while 11 identified their headquarters as outside Africa. The institutional response, not the individual respondent, was treated as the principal unit of analysis.

The questionnaire incorporated closed-ended, multiple-response and open-ended questions. Closed-ended questions generated standardized quantitative information on institutional profiles, geographical reach, operational scale, staffing, budgets and collaboration preferences. Multiple-response questions captured stakeholder categories, actor groups, thematic priorities, forgotten foods and NUS portfolios, organizational activities, constraints and preferred forms of partnership. Open-ended questions enabled respondents to describe their institutional work, comparative advantages, support requirements and priorities for continental action in their own words.

Combining structured and open-response questions facilitated comparison across institutions while providing a more nuanced understanding of stakeholder experiences and perspectives (Braun et al., 2021; Hansen et al., 2023). Online surveys are particularly useful for reaching institutionally and geographically dispersed respondents. However, findings from such surveys must be interpreted with attention to possible network-coverage, self-selection and non-response biases (Thomas et al., 2024; Wu et al., 2022).

Quantitative responses were analyzed using descriptive statistics, principally frequencies and percentages. An exploratory cross-tabulation was also used to examine the distribution of principal organization types across operational levels. For multiple-response questions, each selected option was counted independently. Consequently, percentages for these questions do not sum to 100%.

Because the survey employed purposive, network-based distribution rather than probability sampling, the results were interpreted as indicative patterns within the responding stakeholder network. They should not be regarded as statistically representative estimates of all organizations working on opportunity crops in Africa.

Open-ended responses were analyzed using keyword-assisted thematic coding and interpretive consolidation. Recurring concepts were identified, grouped into broader analytical themes and interpreted in relation to the study objectives. This approach was applied to responses concerning comparative institutional capacities, support requirements and priorities for continental action. Thematic analysis provides a systematic yet flexible approach for identifying patterns of meaning in qualitative information (Braun & Clarke, 2006). In this study, the qualitative findings were used to explain, qualify and provide institutional context for the patterns observed in the quantitative results.

Data cleaning was undertaken before analysis. Staff-size categories entered as "1–5," "6–10" and "11–20" had been automatically converted into calendar dates in the downloaded spreadsheet. These entries were restored to their intended categorical ranges. Missing responses were retained and

reported where relevant. Names, email addresses and telephone numbers were excluded from the statistical analysis and public-facing tables and figures.

The methodology was designed to provide a systems-level understanding of the evolving ecosystem of actors engaged in the conservation, research, development, production, promotion and integration of forgotten foods. Attention was given to institutional diversity, operational mandates, thematic capabilities, systemic barriers and opportunities for collaboration. This orientation recognizes that food systems are complex and interconnected and that their transformation requires collaboration among actors working across research, seed systems, production, processing, markets, nutrition, policy, finance and community knowledge systems.

The approach is consistent with contemporary food-systems research emphasizing inclusive stakeholder participation and context-specific transformative adaptation. Jennings et al. (2024), for example, demonstrate the value of integrating stakeholder knowledge, scientific expertise, participatory scenario development and integrated assessment when exploring pathways towards climate-smart nutrition security in sub-Saharan Africa. Their work highlights the importance of involving government, academia, civil society and agricultural-sector actors in producing policy-relevant food-system scenarios.

Accordingly, the survey was designed to extend beyond compiling a directory of stakeholders. It sought to clarify institutional roles, identify complementarities and coordination gaps, document systemic barriers and reveal opportunities for collective continental action. It also acknowledged the importance of connecting scientific evidence with local and Indigenous knowledge, institutional experience and policy processes when developing credible pathways for mainstreaming forgotten foods into Africa's food systems.

3. Response Coverage and Data Quality

Table 1. Survey coverage

Category	Count	Percent
Complete submissions	84	100.0%
Headquartered in African countries	73	86.9%
Headquarters classified as outside Africa	11	13.1%
African headquarters countries represented	15	17.9%

The percentage for countries represented uses the 84 responses as denominator only for display; the count of countries is the substantive measure.

All 84 records contained the principal analytical fields, including organization type, headquarters, stakeholder categories, thematic areas, crops, activities, operating level, collaboration interest, partnership preferences, constraints, support needs and priorities. Optional information had more missing values: 26 respondents did not list past partners, 22 omitted a website, 14 omitted the year of establishment, 12 omitted an acronym, and 11 omitted either a telephone contact or a description of comparative advantage.

A spreadsheet-formatting anomaly affected the staff-size field: the intended ranges 1–5, 6–10 and 11–20 were automatically interpreted as calendar dates in the downloaded workbook. These values were recoded to their intended categories before analysis. Personally identifiable contact details were not used in the statistical analysis or public-facing figures.

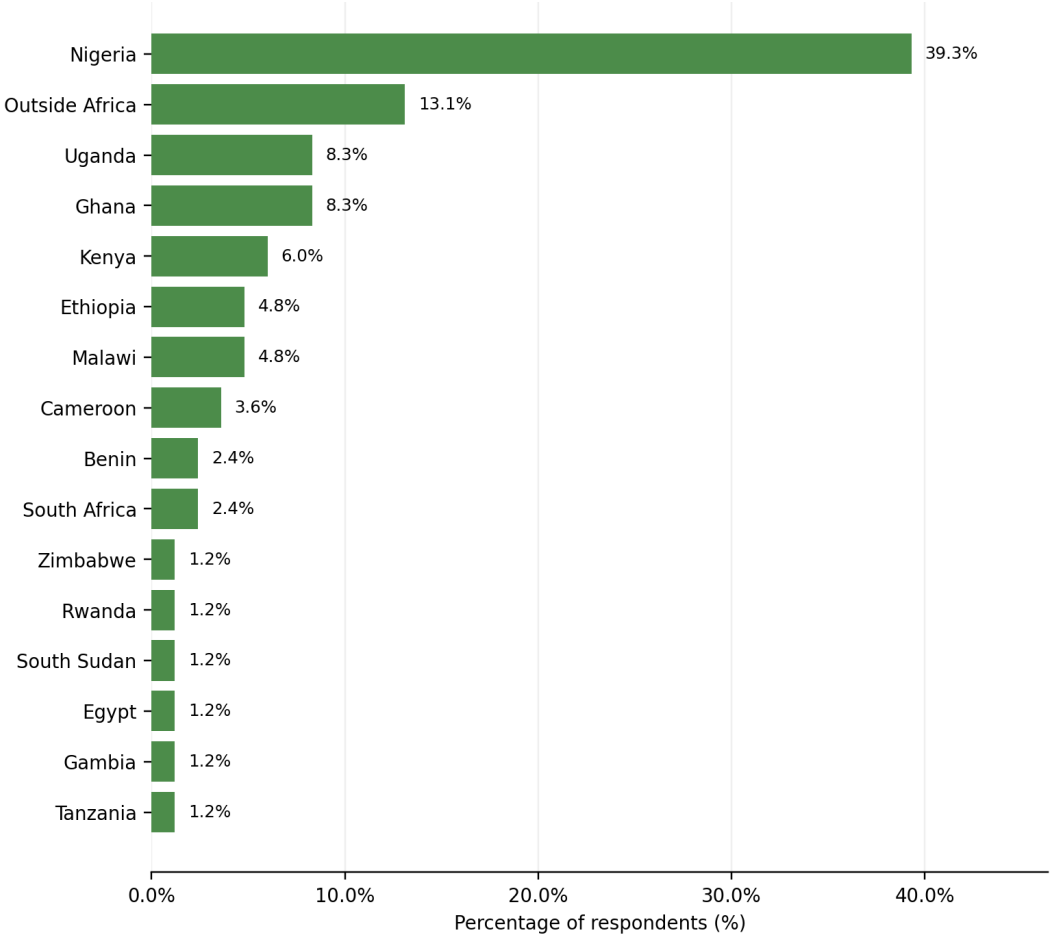


Figure 1. Headquarters distribution of responding organizations

Nigeria accounted for 33 responses (39.3%), followed by 11 responses classified as outside Africa, seven each from Ghana and Uganda, five from Kenya, and four each from Ethiopia and Malawi. Cameroon contributed three responses; Benin and South Africa contributed two each; and Egypt, The Gambia, Rwanda, South Sudan, Tanzania and Zimbabwe contributed one each. This concentration provides strong information on the most represented countries but also emphasizes the need for targeted outreach to underrepresented regions, particularly North, Central and Lusophone Africa.

4. Profile of the Stakeholder Ecosystem

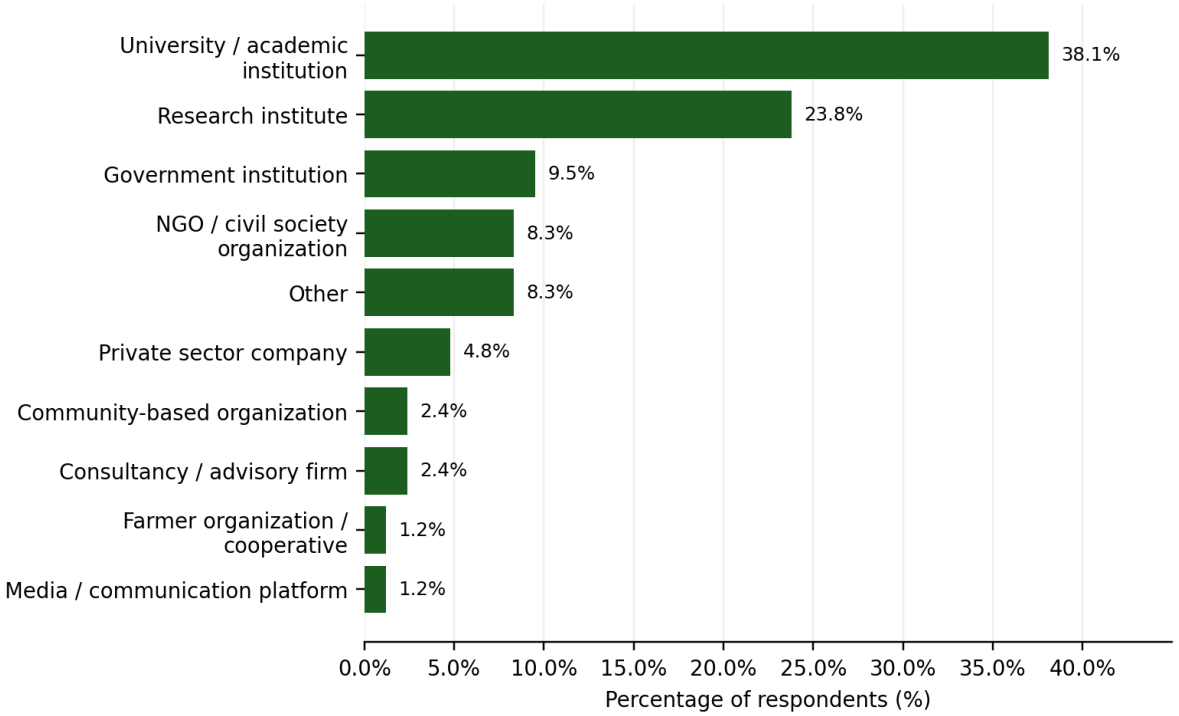


Figure 2. Principal organization types represented in the survey

Table 2. Principal organization type

Category	Count	Percent
University / academic institution	32	38.1%
Research institute	20	23.8%
Government institution	8	9.5%
NGO / civil society organization	7	8.3%
Other	7	8.3%
Private sector company	4	4.8%
Community-based organization	2	2.4%
Consultancy/advisory firm	2	2.4%
Farmer organization / cooperative	1	1.2%
Media/communication platform	1	1.2%

Each respondent selected one principal organization type.

Universities and academic institutions formed the largest principal group, with 32 responses (38.1%), followed by research institutes with 20 (23.8%). Government institutions contributed eight responses, NGOs seven, private companies four, and community-based organizations and consultancies two each. Only one farmer organization or cooperative and one media platform appeared as principal organization types. Seven respondents selected “Other,” indicating hybrid or specialized arrangements not adequately represented by the standard categories.

The broader multiple-response stakeholder classification reinforces the research orientation: 67 respondents identified with Research and Academia, 23 with Government or Policy Institutions, 18 with Farmers and Producer Groups, 16 with Civil Society, and 14 with Private Sector or Agribusiness. Only

two selected Financial Institutions or Investors. The resulting network is well positioned for research coordination but needs purposeful expansion to become a complete food-system coalition.

Table 3. Operating scale

Category	Count	Percent
National level	40	47.6%
Global level	12	14.3%
District / local government level	9	10.7%
Community level	9	10.7%
Multi-country level	6	7.1%
Continental level	4	4.8%
Regional level	4	4.8%

Operating scale reflects the respondent's selected principal level of operation.

Forty organizations (47.6%) operate mainly at national level. Twelve identified a global scope, nine each operate at district/local-government and community levels, six are multi-country organizations, and four each operate regionally and continentally. The combination of local delivery organizations and national or global research actors is valuable, although only eight respondents selected regional or continental operation as their principal scale.

Table 4. Direct staff working on forgotten foods/NUS

Category	Count	Percent
1-5	25	29.8%
6-10	16	19.0%
11-20	14	16.7%
21-50	10	11.9%
More than 100	9	10.7%
51-100	7	8.3%

Three respondents did not answer. Percentages use all 84 respondents as the denominator.

Fifty-five organizations, 65.5% of the full sample, reported 20 or fewer staff directly engaged in NUS work. Twenty-five had only one to five staff, and 16 had six to ten. This confirms that much of the ecosystem operates through small specialist teams, even within large institutions. Nine organizations reported more than 100 staff working in the field, offering potential anchor capacity for collaborative programs.

5. Thematic and Commodity Portfolio

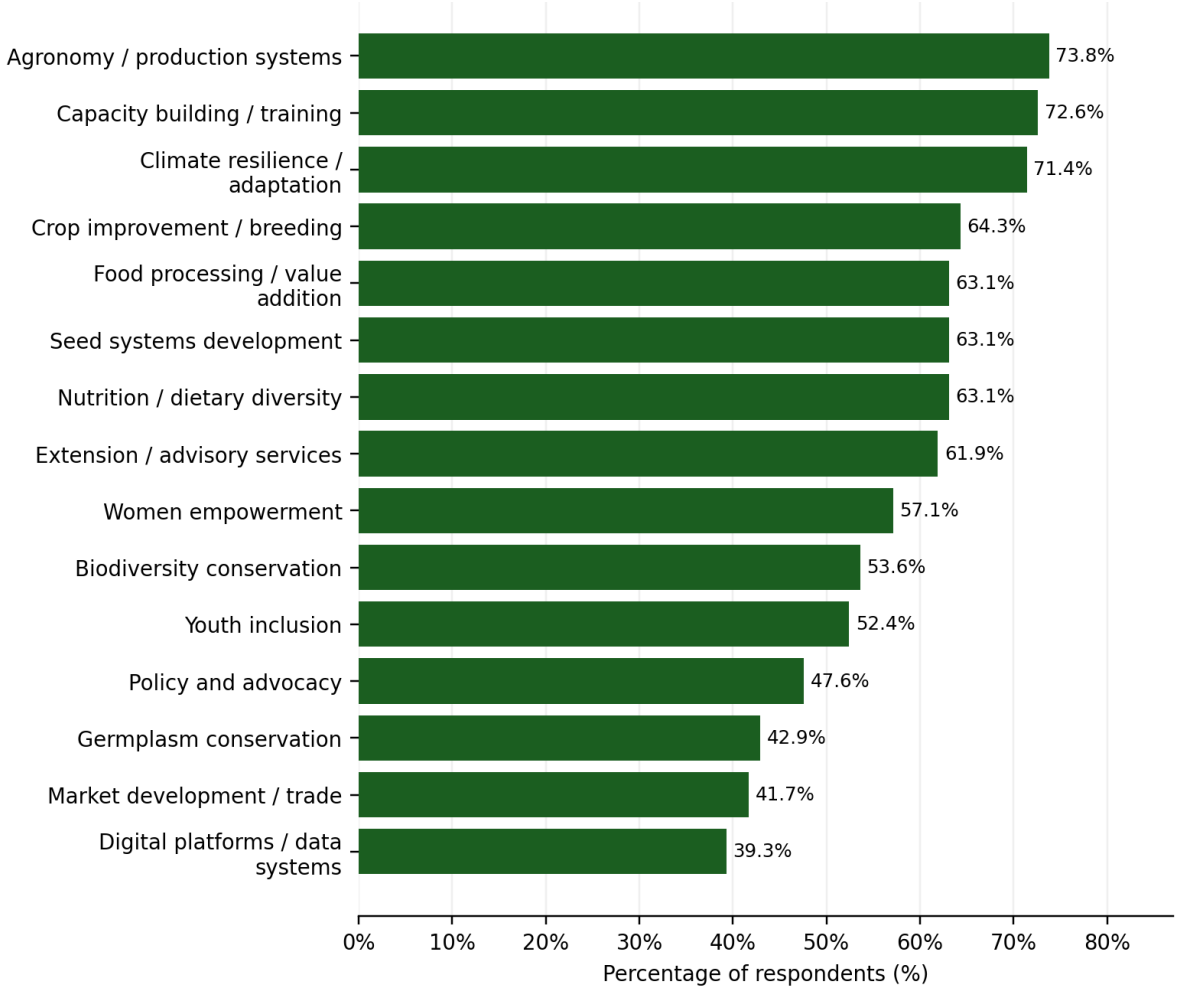


Figure 3. Leading thematic areas of work

Table 5. Leading thematic areas

Category	Count	Percent
Agronomy/production systems	62	73.8%
Capacity building / training	61	72.6%
Climate resilience / adaptation	60	71.4%
Crop improvement / breeding	54	64.3%
Food processing / value addition	53	63.1%
Seed systems development	53	63.1%
Nutrition / dietary diversity	53	63.1%
Extension / advisory services	52	61.9%
Women empowerment	48	57.1%
Biodiversity conservation	45	53.6%
Youth inclusion	44	52.4%
Policy and advocacy	40	47.6%
Germplasm conservation	36	42.9%
Market development / trade	35	41.7%

Digital platforms / data systems	33	39.3%

Multiple responses permitted; percentages do not sum to 100%.

The thematic portfolio is broad and strongly interconnected. Agronomy and production systems led with 62 organizations, followed closely by capacity building and training (61) and climate resilience or adaptation (60). Crop improvement, seed systems, processing, nutrition and extension were each reported by more than 50 organizations. Women's empowerment, biodiversity conservation and youth inclusion were also widely represented.

Comparatively fewer respondents work on finance and investment (11 organizations), school feeding or public procurement (18), genomics (27), mechanization (29), consumer promotion (32) and digital data systems (33). These areas are strategically important because they connect biological and agronomic innovation to scale, demand, investment and institutional uptake.

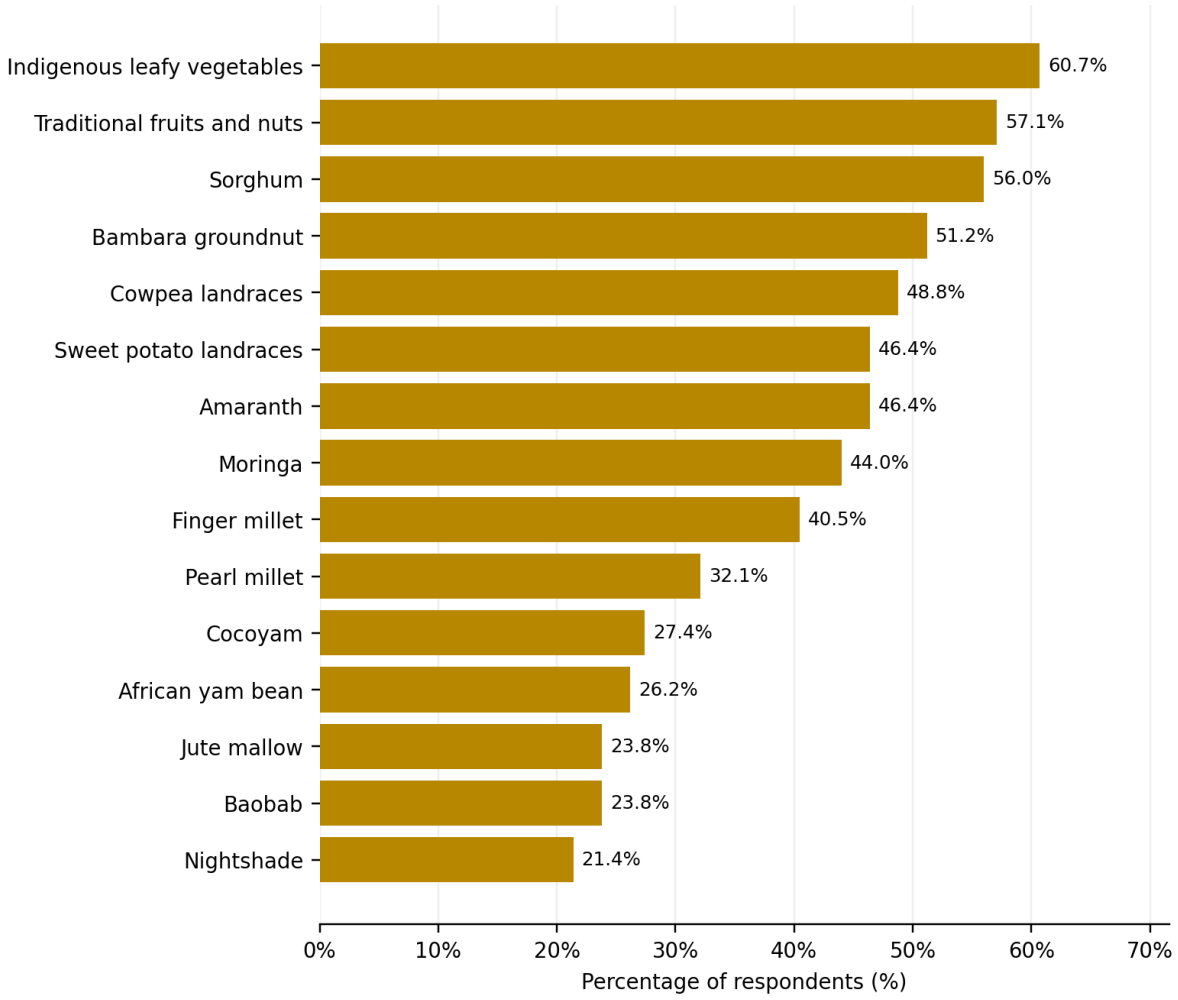


Figure 4. Most frequently reported forgotten foods and NUS

Table 6. Crop and species portfolio

Category	Count	Percent
Indigenous leafy vegetables	51	60.7%
Traditional fruits and nuts	48	57.1%
Sorghum	47	56.0%
Bambara groundnut	43	51.2%
Cowpea landraces	41	48.8%
Sweet potato landraces	39	46.4%
Amaranth	39	46.4%
Moringa	37	44.0%
Finger millet	34	40.5%
Pearl millet	27	32.1%
Cocoyam	23	27.4%
African yam bean	22	26.2%
Jute mallow	20	23.8%
Baobab	20	23.8%
Nightshade	18	21.4%
Other	16	19.0%
Fonio	15	17.9%
Teff	15	17.9%
Taro	15	17.9%
Marama bean	5	6.0%

Multiple responses permitted. "Other" represents additional species entered by respondents.

Indigenous leafy vegetables were the most widely reported category, selected by 51 organizations (60.7%). Traditional fruits and nuts followed with 48 responses, sorghum with 47, Bambara groundnut with 43, cowpea landraces with 41, sweet-potato landraces and amaranth with 39 each, and moringa with 37. The portfolio also includes finger and pearl millet, cocoyam, African yam bean, jute mallow, baobab, nightshade, fonio, teff, taro and marama bean.

The crop distribution supports a clustered approach to continental programming. Widely represented crops can form initial learning and investment clusters, while a flexible "locally important species" window can prevent less common crops from being excluded. The 16 "Other" selections and 41 additional free-text entries demonstrate that the fixed list does not capture Africa's full NUS diversity.

6. Activities and Organizational Capabilities

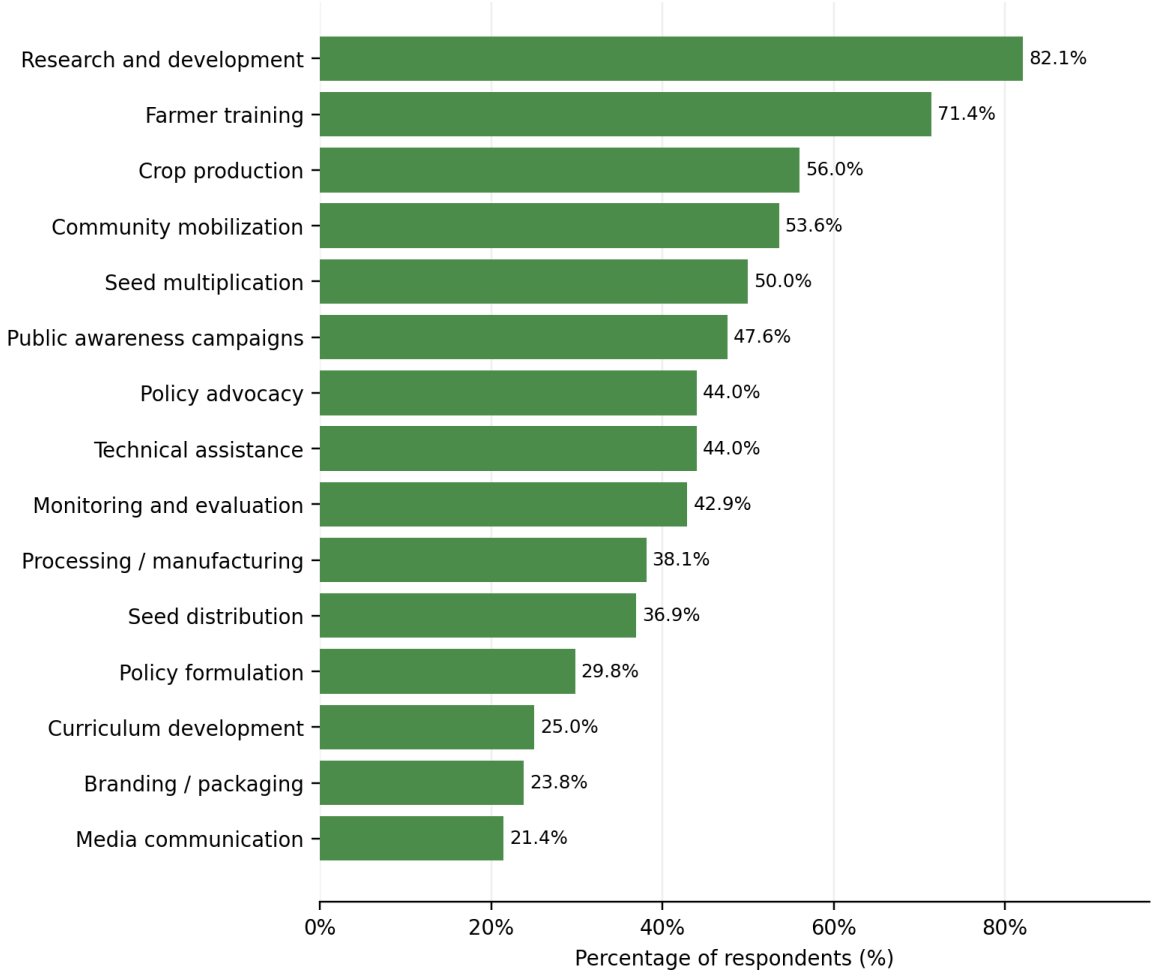


Figure 5. Activities undertaken by responding organizations

Table 7. Reported activities

Category	Count	Percent
Research and development	69	82.1%
Farmer training	60	71.4%
Crop production	47	56.0%
Community mobilization	45	53.6%
Seed multiplication	42	50.0%
Public awareness campaigns	40	47.6%
Policy advocacy	37	44.0%
Technical assistance	37	44.0%
Monitoring and evaluation	36	42.9%
Processing / manufacturing	32	38.1%
Seed distribution	31	36.9%
Policy formulation	25	29.8%
Curriculum development	21	25.0%
Branding / packaging	20	23.8%

Media communication	18	21.4%
Retail / marketing	12	14.3%
Aggregation	11	13.1%
Export promotion	10	11.9%
Trading	8	9.5%
Investment / financing	8	9.5%

Multiple responses permitted.

Research and development dominates organizational activity, reported by 69 respondents (82.1%). Farmer training was reported by 60 organizations, crop production by 47, community mobilization by 45, seed multiplication by 42 and public-awareness campaigns by 40. This combination provides a strong base for participatory research, testing, training and early-stage dissemination.

The decline in participation along the commercial chain is pronounced. Processing and manufacturing were reported by 32 organizations, branding and packaging by 20, retail or marketing by 12, aggregation by 11, export promotion by 10, and trading and investment or financing by only eight each. The continental initiative should therefore prioritize partnerships that connect the established research and farmer-support base to enterprise development, consumer markets and finance.

Table 8. Coded comparative capabilities

Category	Count	Percent
Research and scientific expertise	30	35.7%
Training, extension and capacity development	22	26.2%
Seed, germplasm and biodiversity assets	13	15.5%
Processing and value-addition capability	13	15.5%
Farmer and community networks	12	14.3%
Market, enterprise and value-chain capability	12	14.3%
Policy, advocacy and convening	9	10.7%
Data, digital and communication capability	5	6.0%

Exploratory multiple-theme coding of 73 substantive open-text responses; percentages use all respondents as denominators.

The open responses most frequently emphasized research and scientific expertise, training and extension capability, seed and germplasm assets, processing knowledge, farmer networks and market experience. These assets are distributed rather than concentrated in one institutional category. The platform can add value by assembling complementary capability bundles around specific crops, geographies and outcomes.

7. Constraints and Support Requirements

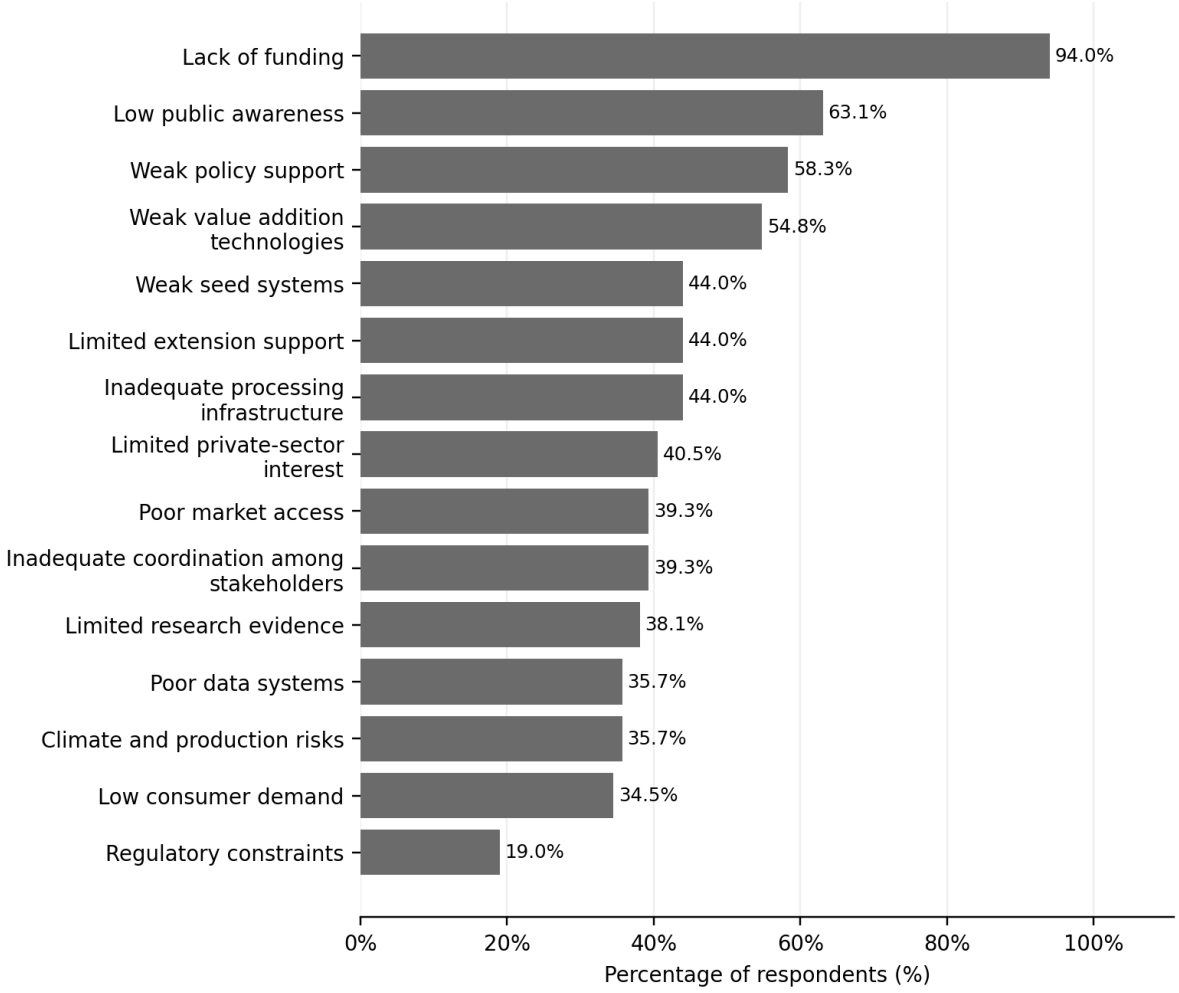


Figure 6. Major constraints affecting organizational work on forgotten foods/NUS

Table 9. Major constraints

Category	Count	Percent
Lack of funding	79	94.0%
Low public awareness	53	63.1%
Weak policy support	49	58.3%
Weak value addition technologies	46	54.8%
Weak seed systems	37	44.0%
Limited extension support	37	44.0%
Inadequate processing infrastructure	37	44.0%
Limited private-sector interest	34	40.5%
Poor market access	33	39.3%
Inadequate coordination among stakeholders	33	39.3%
Limited research evidence	32	38.1%
Poor data systems	30	35.7%
Climate and production risks	30	35.7%
Low consumer demand	29	34.5%

Regulatory constraints	16	19.0%
Other	1	1.2%

Multiple responses permitted. Although the question requested up to five selections, some submissions contained more than five; all recorded selections were retained.

Lack of funding was selected by 79 organizations (94.0%), making it the most universal constraint. Low public awareness followed at 63.1%, weak policy support at 58.3%, and weak value-addition technologies at 54.8%. Weak seed systems, limited extension and inadequate processing infrastructure were each selected by 37 respondents. Poor market access and inadequate coordination were each reported by 33, while limited research evidence was reported by 32.

The constraints form a reinforcing system. Limited finance restricts research, seed multiplication, processing and market development. Weak policy support and public awareness suppress demand and public investment. Poor seed systems and extension limit production volume and reliability. Inadequate processing and market access then weaken enterprise incentives. Effective intervention must therefore combine research, policy, production, processing, demand and finance rather than addressing each constraint in isolation.

Table 10. Coded support requirements

Category	Count	Percent
Financing and investment	63	75.0%
Research, evidence and innovation	22	26.2%
Coordination, platforms and knowledge sharing	22	26.2%
Capacity, extension and farmer support	16	19.0%
Processing and value addition	10	11.9%
Markets and value-chain development	9	10.7%
Seed systems and germplasm	7	8.3%
Climate resilience and sustainable production	6	7.1%
Policy and institutional mainstreaming	5	6.0%
Awareness and consumer demand	4	4.8%
Nutrition and dietary integration	1	1.2%

Exploratory multiple-theme coding of open responses. One response may contribute to several themes.

In open-ended support requests, 63 organizations (75.0%) explicitly referred to funding, investment, grants, credit or resource mobilization. Research and innovation support and coordination or knowledge-sharing mechanisms were each identified in 22 responses. Training and extension support appeared in 16. These responses suggest demand for a platform with both technical-network and resource-mobilization functions.

8. Partnership Demand and Platform Readiness

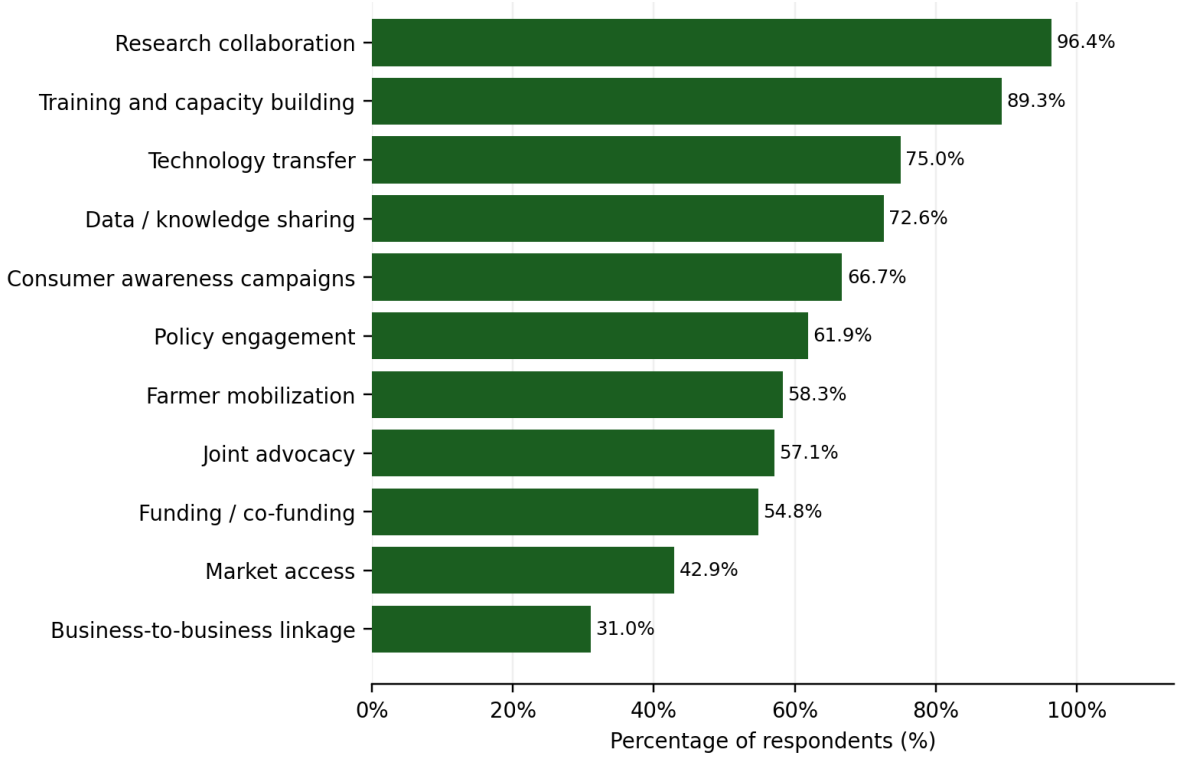


Figure 7. Preferred forms of partnership

Table 11. Partnership interests

Category	Count	Percent
Research collaboration	81	96.4%
Training and capacity building	75	89.3%
Technology transfer	63	75.0%
Data / knowledge sharing	61	72.6%
Consumer awareness campaigns	56	66.7%
Policy engagement	52	61.9%
Farmer mobilization	49	58.3%
Joint advocacy	48	57.1%
Funding / co-funding	46	54.8%
Market access	36	42.9%
Business-to-business linkage	26	31.0%

Multiple responses permitted.

Research collaboration was selected by 81 respondents (96.4%), training and capacity building by 75 (89.3%), technology transfer by 63 (75.0%), and data or knowledge sharing by 61 (72.6%). Consumer-awareness campaigns, policy engagement, farmer mobilization, joint advocacy and funding partnerships also attracted strong interest. Market access and business-to-business linkage were requested less frequently but remain essential to correcting the observed commercialization gap.

Platform readiness is unusually high: 79 respondents said “Yes” to collaboration with an Africa-wide platform and five said “Maybe”; no respondent selected “No.” Eighty-one want directory inclusion and

only three declined. All respondents indicated that their contact information may be shared with potential collaborators. These permissions support development of a governed stakeholder directory, although publication and future use should remain purpose-limited, consent-based and compliant with applicable data-protection requirements.

9. Strategic Interpretation

9.1 A strong knowledge base, but incomplete food-system representation

The survey reveals a substantial knowledge and institutional base for advancing forgotten foods in Africa. Research and academia were represented by 67 respondents, while universities and research institutes constituted 52 of the 84 principal organization types. The responding network therefore possesses considerable capacity for evidence generation, germplasm conservation, crop improvement, agronomic research, training and policy engagement.

However, the network does not yet represent the entire food system in a balanced manner. Farmer organizations, processors, aggregators, retailers, financial institutions, investors, public-procurement bodies and consumer-facing organizations were comparatively less represented. This imbalance matters because food-system transformation depends on coordinated contributions from actors operating from production through processing, distribution and consumption. A recent systematic review found that effective agricultural multi-stakeholder partnerships depend on the complementary participation of public institutions, research bodies, private enterprises, civil society and producer organizations, rather than the predominance of one institutional group (Maryono et al., 2024). Similarly, research on sustainable food-system transformation identifies distinct but interdependent roles for producers, processors, retailers, consumers, researchers and governments.

The literature on neglected and underutilized species reinforces this interpretation. Ndlovu et al. (2024) found that NUS in sub-Saharan Africa remain fragmented across research, development, marketing and policy systems, despite their potential contributions to nutrition, resilience and local livelihoods. Smallholder farmers—particularly women—often conserve these crops, yet their participation in formal research, seed, policy and market systems remains limited. McMullin et al. (2021) likewise conclude that mainstreaming orphan crops requires cross-disciplinary and multi-actor approaches that combine production- and consumption-oriented interventions.

The survey findings therefore indicate that the existing research community should serve as the technical foundation of the initiative, while deliberate recruitment is undertaken to strengthen farmer, enterprise, market, finance, procurement and consumer representation. The objective should not be to reduce the role of research institutions, but to embed their capabilities within a more complete research-to-consumption coalition.

9.2 The principal gap is the research-to-market conversion system

The survey demonstrates strong participation in research and development, farmer training, crop production, seed multiplication and community mobilization. By contrast, substantially fewer organizations reported involvement in aggregation, investment and financing, trading, retail, export promotion, branding and market development. This pattern suggests that the main institutional gap lies between knowledge generation and the establishment of commercially and socially viable value chains.

This interpretation is consistent with research on underutilized crops in sub-Saharan Africa. Ndlovu et al. (2024) report that NUS value chains are generally poorly developed and constrained by informal seed systems, weak markets, limited consumer awareness, policy neglect and inadequate production and processing information. McMullin et al. (2021) similarly demonstrate that mainstreaming orphan crops cannot be achieved through production interventions alone. Effective strategies must consider the interaction between production capacity, consumer demand, food policy, market development and the nutritional qualities of the crops.

Agricultural innovation research also shows that scientific discoveries do not automatically translate into development outcomes. Innovation emerges through interaction among researchers, farmers, businesses, extension organizations, policymakers and markets. Inclusive value-chain development connects technical innovation with market demand, institutional arrangements and benefits for producers and other chain actors. Multi-stakeholder platforms can facilitate such interaction, although their effectiveness depends on meaningful participation, trust, facilitation and the ability to translate jointly generated knowledge into coordinated action (Maryono et al., 2024).

The strategic implication is that future NUS research programmes should incorporate pathways to use and scale from their inception. Crop improvement should be connected to seed multiplication and distribution; agronomic research should consider production economics and market requirements; food-science research should respond to processing, storage and product-quality specifications; and nutrition research should inform consumer communication and institutional procurement. Consumer testing, enterprise development, market intelligence and buyer engagement should therefore be treated as integral components of research-for-development rather than as downstream activities added after research has been completed.

9.3 Financing must be structured around portfolios and partnerships

Financing emerged as the most pervasive constraint in the survey: 79 of the 84 respondents identified lack of funding, and financing was also the dominant theme in open-ended support requests. In addition, 33 respondents reported annual budgets below USD 10,000 for forgotten-food activities. These findings point not only to a shortage of resources, but also to the fragmented and project-based nature of existing investment.

Published evidence supports sustained investment in agricultural research while also demonstrating that funding alone is insufficient if innovation systems and market linkages remain weak. Benefit–cost analysis of agricultural research in the Global South indicates that increased agricultural research and development investment can generate substantial economic, nutrition and food-security benefits (Rosegrant et al., 2023). For forgotten foods, however, investment must extend across the interconnected constraints of research, seed delivery, processing, market development, consumer awareness and supportive policy. McMullin et al. (2021) emphasize that orphan-crop mainstreaming requires coordinated combinations of production- and consumption-oriented interventions rather than reliance on one intervention.

Evidence from natural-resource and biodiversity finance also shows that blended-finance arrangements can distribute risk among public, philanthropic and private actors and increase the scale of investment. Public or philanthropic resources can cover early-stage research, infrastructure and capacity-building costs, while concessional or first-loss capital can reduce the risks faced by private investors. Such mechanisms require transparent eligibility criteria, social and environmental safeguards, credible performance indicators and continuing monitoring (Löfqvist et al., 2023). Although this evidence comes primarily from landscape-restoration finance, its principles are relevant to NUS because these crops combine public benefits, such as biodiversity conservation, nutrition and climate resilience—with potential commercial returns.

A continental financing mechanism should therefore move beyond disconnected small grants toward coordinated investment portfolios. It could combine:

- Competitive research and innovation grants;
- Challenge funds for processing, product development and consumer adoption;
- Seed and planting-material development windows;

- Enterprise incubation and business-development support;
- Concessional or blended-finance instruments for commercially promising value chains; and
- Co-investment arrangements involving governments, development partners, research institutions and businesses.

Crop and value-chain clusters could provide the organizing structure for these portfolios. Rather than financing isolated activities, each cluster could develop an investment pipeline linking germplasm, breeding, seed systems, production, processing, market development, nutrition and policy outcomes. Such an approach would also allow non-commercial public benefits to be financed through grants while activities capable of generating revenue are prepared for enterprise and investment financing.

9.4 Diversity requires continental coordination and local flexibility

The survey recorded a highly diverse crop portfolio encompassing cereals, legumes, roots and tubers, leafy vegetables, trees, fruits and nuts. Indigenous leafy vegetables, traditional fruits and nuts, sorghum, Bambara groundnut, cowpea landraces, sweet-potato landraces, amaranth, moringa and millets were particularly prominent. Respondents also listed numerous species that were not included in the questionnaire's predefined categories.

This diversity is consistent with the literature, which describes NUS as locally adapted crops embedded in distinct ecological, cultural and livelihood systems. A systematic review of 75 studies found that these crops can support agrobiodiversity, dietary diversification, climate resilience, food sovereignty and local livelihoods. The same review cautions that NUS are highly context-specific and are often maintained through local seed systems and Indigenous knowledge, particularly by smallholder and women farmers (Ndlovu et al., 2024). Consequently, a uniform continental crop list or standardized intervention package would risk overlooking locally important species, knowledge and production conditions.

Continental coordination nevertheless has an important role. It can establish common research and evidence standards, facilitate cross-country learning, harmonize selected data and monitoring protocols, mobilize investment and communicate a compelling continental narrative. It can also support crop clusters where several countries share related research, seed, processing or market priorities. However, crop prioritization and implementation pathways should be determined through participatory national and local processes.

The appropriate model is therefore coordinated diversity rather than uniformity. Continental mechanisms should provide common principles, resources and learning infrastructure, while national and community actors retain authority to identify culturally relevant crops, Indigenous knowledge systems, preferred foods, production environments and market pathways. This balance is consistent with the growing recognition that NUS transformation must be context-specific, farmer-inclusive and sensitive to local food cultures (Ndlovu et al., 2024).

9.5 A directory should function as knowledge and partnership infrastructure

The strong interest in an Africa-wide directory—expressed by 81 respondents—creates an opportunity to develop more than a static list of organizations. A conventional directory would establish visibility, but it would have limited value if entries quickly became outdated or could not be searched according to capabilities, crops, countries, services and partnership interests.

The proposed directory should function as a living knowledge and partnership infrastructure. It should enable users to:

- Search for organizations by country, crop, thematic expertise and operational scale;
- Identify research, seed, processing, market, policy and financing capabilities;
- Locate potential consortium and value-chain partners;
- Share collaboration and funding opportunities;
- Connect organizations with complementary capabilities;
- Access selected evidence, technologies and knowledge products; and
- Update institutional profiles periodically.

The FAIR principles provide an appropriate technical foundation. They emphasize that data and metadata should be findable, accessible under clearly defined conditions, interoperable and reusable (Wilkinson et al., 2016). Applied to the stakeholder directory, these principles would support standardized classifications, persistent organizational records, searchable metadata and compatibility with other continental knowledge systems.

FAIR principles alone, however, do not fully address rights, equity and authority over data. Because the directory may include farmer organizations, Indigenous communities and knowledge holders, its governance should also reflect the CARE principles: Collective Benefit, Authority to Control, Responsibility and Ethics. These principles emphasize that data use should generate benefits for the communities represented, respect their authority over information and traditional knowledge, and be guided by responsible and ethical stewardship (Carroll et al., 2020).

Accordingly, directory governance should include institutional verification, explicit consent, purpose limitation, role-based access where necessary, transparent rules for data use and mechanisms for respondents to correct, update or withdraw their information. Public contact details should be limited to information specifically approved for disclosure. Governance should also define responsibility for maintaining the platform, reviewing entries, protecting sensitive information and ensuring that partnership opportunities produce value for contributing organizations and communities.

The strategic value of the directory will therefore lie not in the number of names it contains but in its ability to reduce the cost of finding expertise, form credible partnerships, identify capability gaps, mobilize investment and coordinate action across the African forgotten-foods ecosystem.

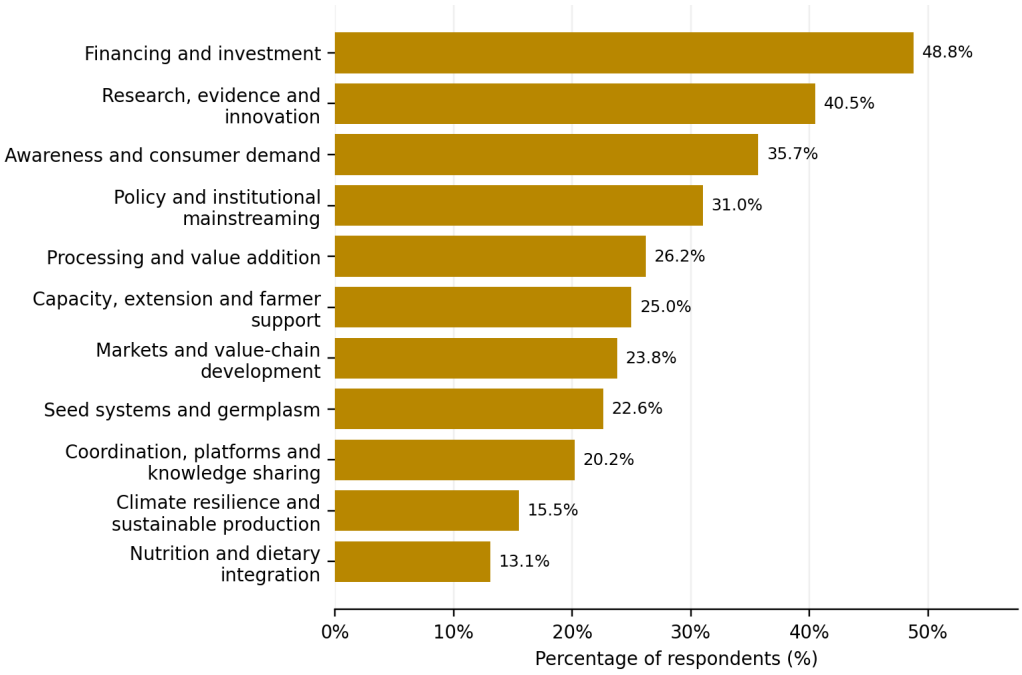


Figure 8. Coded priorities for continental action from open-ended responses

10. Recommendations and Action Matrix

Table 12. Proposed continental action matrix

Strategic action	Key implementation focus	Suggested leadership	Time horizon	Illustrative indicators
1. Strengthen the Africa Community of Practice on forgotten food	Create a light but accountable coordination structure with thematic and crop clusters, national focal points, an annual work programme and clear membership criteria.	Continental platform/FARA and partners	0–12 months	Platform charter; focal points appointed; active membership; annual work plan
2. Build a governed stakeholder directory and knowledge hub to ensure good coordination.	Verify profiles, apply consent-based publication rules, provide searchable filters, and enable members to update capabilities, crops, countries and partnership needs.	Platform secretariat and data partners	0–12 months	Verified profiles; update rate; searches and matches; data-governance protocol
3. Launch a catalytic financing and innovation facility	Fund multi-institutional projects linking research, seed supply, processing, markets and nutrition outcomes; develop blended-finance and enterprise windows.	Development partners, AfDB, investors and platform	6–24 months	Capital mobilized; projects funded; co-finance ratio; enterprises supported
4. Develop crop and value-chain innovation clusters	Start with widely represented portfolios such as leafy vegetables, traditional fruits and nuts, sorghum, Bambara groundnut, cowpea, amaranth and millets, while retaining a local-species window.	Research bodies, private sector and farmer networks	6–36 months	Clusters operating; technologies validated; seed/planting material supplied; products launched
5. Strengthen policy, standards and public procurement	Integrate NUS into national strategies, variety-release and seed rules, dietary guidance, school feeding, public procurement, climate plans and agricultural investment programs.	Governments, AUC/RECs, policy institutes and civil society	12–36 months	Policies revised; procurement pilots; standards developed; budget lines created
6. Build consumer demand and market intelligence	Coordinate evidence-based campaigns, chef and media engagement, product development, nutrition messaging, market studies and buyer linkages.	Businesses, consumer platforms, nutrition actors and media	6–36 months	Consumer reach; buyer agreements; sales/value growth; new products
7. Establish continental evidence and learning framework	Define common indicators and protocols for production, nutrition, climate, biodiversity, gender, youth, market and livelihood outcomes; publish regular progress syntheses.	Universities, NARIs, CGIAR and MEL partners	6–24 months	Indicator framework; datasets shared; learning products; policy uptake

11. Conclusion

The survey demonstrates that Africa already has a sizeable and willing community working on forgotten foods and NUS. The responding network combines research excellence, crop and seed expertise, community engagement, training capacity and a diverse species portfolio. Its members are ready to collaborate and overwhelmingly support a continental directory and platform.

The evidence also shows that the ecosystem is constrained by small specialist teams, limited budgets, weak policy and consumer awareness, fragile seed systems, inadequate processing infrastructure and insufficient market and financing participation. The next phase should therefore focus on converting distributed expertise into coordinated portfolios that connect conservation and research to production, processing, procurement, consumption and viable enterprise.

A well-governed Community of Practice, supported by a dynamic directory, catalytic finance, crop clusters, policy engagement and a common evidence framework, can provide the connective infrastructure required. Its success should ultimately be measured not by the number of organizations listed, but by the partnerships formed, investments mobilized, species mainstreamed, markets developed and benefits delivered to farmers, consumers and African food systems.

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Annex 1: Interpretation Notes

- The unit of analysis is the submitted institutional response. Duplicate organizations may occur where different representatives submitted separately; no records were removed solely on name similarity.
- Percentages use 84 as the denominator unless explicitly stated otherwise. Missing answers therefore remain visible through percentages below 100%.
- Multiple-response questions count every recorded selection. Their percentages should not be added to 100%.
- Open-response themes were generated through keyword-assisted coding and interpretive consolidation. Counts indicate theme mentions, not sentiment, intensity, or causal importance.
- Country distributions describe headquarters, not necessarily the full geographical reach of responding organizations.
- The sample was purposive and network distributed. Results should guide stakeholder engagement and hypothesis formation rather than population inference.
- Contact-sharing consent was recorded in the questionnaire, but directory publication should still apply verification, purpose limitation, access controls and withdrawal procedures.

Annex 2: Questionnaire

Questionnaire for Mapping Stakeholders Working on Opportunity Crops in Africa

SECTION A: Organizational Profile

1. **Name of Organization / Institution**
   (Short Answer)
2. **Acronym (if applicable)**
   (Short Answer)
3. **Type of Organization**
   (Multiple Choice)
   - Government Institution
   - Research Institution / University
   - Farmer Organization / Cooperative
   - Private Sector Company
   - NGO / Civil Society Organization
   - Development Partner / Donor
   - Financial Institution / Investor
   - Regional / Continental Body
   - Media / Consumer Advocacy Platform
   - Other (Specify)
4. **Year Established**
   (Short Answer)
5. **Country of Headquarters**
   (Dropdown)
6. **Countries of Operation in Africa**
   (Checkboxes)
7. **Website / Social Media / Contact Link**
   (Short Answer)

SECTION B: Stakeholder Category Classification

8. **Which stakeholder category best describes your organization?**
   (Check all that apply)
   - Farmers & Producer Groups
   - Research & Academia
   - Government / Policy Institutions
   - Private Sector / Agribusiness
   - Development Partners / Donors
   - Civil Society / NGOs / CBOs
   - Consumers / Market Shapers
   - Regional / Continental Bodies
   - Financial Institutions / Investors

SECTION C: Thematic Area of Engagement

9. **Which areas of Forgotten Foods / NUS work is your organization involved in?**
   (Check all that apply)
   - Germplasm Conservation / Gene Banks
   - Crop Breeding / Genetics
   - Agronomy / Production Systems
   - Seed Systems Development
   - Mechanization / Production Technologies
   - Food Processing / Product Development

- Nutrition / Dietary Research
- Market Development / Trade
- Policy / Advocacy
- Capacity Building / Extension
- Consumer Awareness / Promotion
- Investment / Finance
- Digital Advisory / Data Systems
- Youth / Gender Inclusion
- Other (Specify)

SECTION D: Commodity Focus

10. **Which Forgotten Foods / NUS does your organization work on?**
    (Checkbox Grid / Multiple Short Answers)
    - Examples:
    - Bambara Groundnut
    - Fonio
    - Finger Millet
    - Sorghum
    - African Yam Bean
    - Taro / Cocoyam
    - Amaranth
    - Jute Mallow
    - Baobab
    - Moringa
    - Indigenous Leafy Vegetables
    - Others (Specify)

SECTION E: Nature of Activities

11. **What specific role does your organization play?**
    (Check all that apply)
    - Research & Development
    - Seed Production / Distribution
    - Farmer Training / Extension
    - Production / Cultivation
    - Aggregation / Trading
    - Processing / Manufacturing
    - Retail / Distribution
    - Financing / Investment
    - Policy Development
    - Advocacy / Campaigning
    - Capacity Building / Education
    - Media / Communication

SECTION F: Capacity and Scale

12. **Approximate Number of Staff Working on NUS/Forgotten Foods**
    (Multiple Choice)
    - 1–5
    - 6–20
    - 21–50
    - 51–100
    - 100+

13. **Estimated Annual Budget for NUS/Forgotten Foods Activities (USD)**
(Multiple Choice)
- <$10,000
- $10,000–50,000
- $50,001–250,000
- $250,001–1M
- $1M
- Prefer not to say

SECTION G: Partnerships and Collaboration

14. Are you interested in collaborating under an Africa Forgotten Foods Platform/CoP?
- Yes
- No
- Maybe

14. **What type of partnerships are you seeking?**
(Check all that apply)
- Research Collaboration
- Funding / Investment
- Technology Transfer
- Market Linkages
- Policy Engagement
- Capacity Building
- Product Development
- Advocacy Partnerships

SECTION H: Challenges and Needs

15. **What are your top three constraints in advancing Forgotten Foods?**
(Checkboxes)
- Lack of Funding
- Weak Policy Support
- Limited Research Capacity
- Poor Seed Systems
- Low Consumer Awareness
- Weak Markets
- Limited Processing Technology
- Poor Coordination Among Stakeholders
- Inadequate Data / Evidence
- Other (Specify)

SECTION I: Strategic Insights

16. **What priority interventions are needed to accelerate Forgotten Foods in Africa?**
(Long Answer)

17. **Would you like to be featured in an Africa Forgotten Foods Stakeholder Directory?**
- Yes
- No