Mid-Term External Review Q1 2024 of Consumption of Resilient Orphan Crop Products for Healthier Diets (CROPS4HD) (Project Reference 7F- 10457.01.03) for the period 1 July 2021 - 30 June 2025

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Summary

Led by Professor Jay Cummins, an external mid-term review of the CROPS4HD project was conducted from January to March 2024. The CROPS4HD project has made steady progress during its first 2.5 years of implementation. The review process has demonstrated a high level of project delivery activities amongst consortium partners and project delivery team members.

The review adopted a highly engaging approach to engaging key project stakeholders in the evaluation tools, that centred around the “Shared Solutions Workshops” that were conducted in both Chad and India. The level of engagement and participation by project team members and farmers was outstanding and is reflective of the high level of commitment and enthusiasm held amongst both project delivery team members and the organisations that they represent. The PUSH-PULL-POLICY framework represents an innovative approach adopted as the project’s framework and is well supported by all project stakeholders. A range of specific constraints have impacted the ability of the project to realise its full potential and impact and are described in further detail in this report. Such identified constraints can largely be addressed through the range of recommendations provided. This will help to ensure that the project can fully achieve the intended impacts.

As the project continues to mature, changes in the specific focus of the project will continue to evolve, from the ground up. It is expected that increased influence by progressive farmers and value-chain entrepreneurs will help drive the adoption and innovation processes. This will be supported through a greater focus on policy interventions that provide increased support to the push-pull components of the project. Project delivery staff will need to keep pace with the new opportunities and demands of the project, and help facilitate the process.

A “scorecard analysis” presented in this report provided a summary response to each of the OECD DAC review criteria. Pleasingly, the project has satisfied all of the specified criteria. Some areas however have under-performed in comparison to others, and these have been identified with recommended responses provided to address such limitations. The scorecard provides an overall assessment of the achievements to date for the CROPS4HD project, and so should be viewed as a guiding tool for project success to date.

Recommendations provided in this report provide specific “actions” that need to be considered for implementation to remediate some specific issues identified through the review process. There is a “bright future” for the project as it moves forward to implementing activities associated with the second half of the current phase I. As the planning moves towards a phase 2 tranche, it will be critical for the project to adopt the following principles;

1. Continue on the pathway of ensuring push-pull-policy components are fully integrated with an increased focus on policy intervention support on the ground.
2. Ensure that country-specific out-scaling strategies have been fully designed and capable of forging strong sustainable partnerships with farmer groups and associations.
3. Undertake a skills and capability audit and in turn comprehensive training and capacity building program for all project delivery partners for each country.
4. Provide a focus on building the leadership and communication capabilities of senior project leaders and managers to help enable them to take on a greater advocacy role driven by newly appointed national project coordinators.
5. Ensure that the integrity of NUS crops, farmer variety selection and integration of agroecological practices that are based on sound scientific research principles continue, together with an expanded network of international research partners.
6. For each country, ensure that specific strategies relating to communication and engagement with stakeholders and benefactors are planned and streamlined.
7. For each country, prioritise the establishment of stronger partnerships with existing government initiatives, and ensure that targeted policy interventions sympathetic to NUS crop development, seed bank enterprises and NUS products are undertaken.

Contents

1. Purpose of the mid-term review of CROPS4HD

The purpose of conducting an independent mid-term review (MTR) of the CROPS4HD (Consumption of Resilient Orphan Crops and Products for Healthier Diets) was to assess and validate the achievements of the project (to date) against the overall project objectives and expected impacts. Outcomes from the MTR were to also develop a series of recommendations to provide strategic and operational steering as the project moves forward into the next phase of implementation and delivery.

2. Project methodology overview

The methodology adopted for the MTR was based on adopting a participatory-driven approach to assessing and reviewing the CROPS4HD project's performance, impacts and outcomes. The methodology followed a four-phase approach;

1. Preliminary phase; project briefings with SDC, review of project design and reporting documentation and undertaking survey questionnaires targeting (1) partnering organisations engaged in the delivery of project activities and (2) project delivery team members from partnering organisations.

2. Consultation phase; Shared Solutions Workshops in Chad and India attended by key stakeholders associated with the management, implementation and engagement (as actors) of the CROPS4HD project together with selected project site visits. Additional discussions were held with the respective country teams, as well as a representative group of policy team members. The consultation phase provided the opportunity to gather first-hand evidence relating to the experiences, achievements and impacts associated with project activities.

3. Analysis and synthesis phase; the analysis of the information was based on adopting a "scorecard approach" to assess project performance against each of the 6 DAC OECD criteria framework.
   Commentary was provided in relation to (1) the synergetic and complimentary effects of the three components push, pull and policy; (2) identification of specific gaps in the scope of the work conducted to date; (3) specific constraints that were not originally anticipated and/or any specific critical issues that have evolved since the project commenced and (4) opportunities for steering the project back on course if required (through appropriate interventions). Emerging themes then helped categorise project recommendations across a matrix for the project.

4. Reporting and presentation; completion of the report and presentation of findings.

3. Project participant survey result summary

Project constraints highlighted included limited resources, communication, limited time, unreliable rainfall, farm scale and policy linkages. Resolving constraints could be achieved through rationalising the number of activities, provision of additional training, increased travel support, improving market integration, increased collaboration and improved communication between project delivery partners.

Skills gained by participants included participatory research skills, understanding of NUS production and marketing systems, PMCA, communication and project management skills. Training needs identified related to monitoring and evaluation, project management, data analysis (relating to field

trials), communication skills, agroecological (AE) farming principles (and systems), GIS and entrepreneurship.

Suggested changes to the implementation of the project included the need to increase the farmer focus; increase financial resources for project delivery activities (transportation to sites and scientific resources); inclusion of livestock into the AE approaches, a re-enforced focus on NUS crops; a balanced approach to staff inputs (to reduce pressure) and increased delivery of farmer field schools.

Strengths included use of a systems approach, the integration of the push-pull-policy approach, a focus on producers and gender and AE approaches.

Weaknesses included current market opportunities for NUS and AE crops (at the early stages of development), inability to respond to climate change; the complexity of the project; inequity in budget allocations, a dominating focus on NUS crops; delivery partner skills and project leadership.

4. Organisational survey summary results

Organisational respondents held positive attitudes relating to the ability to demonstrate positive contributions to practice change, and contribution to project achievements; empowerment of women through project engagement; achieving sound communication between partners, supporting farmers in accessing nutritionally diverse foods through the project; improvements in staff skills and having a clear understanding or project deliverables.

All organisational representatives clearly articulated the range of benefits that project stakeholders (representing the different categories of actors along the value chains and push-pull-policy continuum) had gained through their project engagement. This demonstrates the understanding of the roles that each actor category play in the project, as well as the opportunity to adopt a market segmentation approach for targeted project interventions.

In terms of identifying project delivery constraints, respondents identified a large number of issues that were categorised based on aligning them to environmental, social institutional, economic and political themes. These are summarised;

1. Environmental constraints highlighted included low farmer adoption rates of AE farming and NUS crops and the impacts of drought, flood and rainfall distribution.

2. Social and institutional constraints highlighted included community apprehension to working in farmer groups (largely brought about by mis-trust); a lack of “pull’ related skills held by implementing partners; malnourishment amongst rural communities engaged in the project; a lack of awareness in relation to NUS crops; a lack of gender sensitisation at the village level and poor security in some project locations.

3. Economic constraints highlighted insufficient financial resources for project delivery; small marginal farmers with little land and poorly established markets for AE/NUS crops.

4. Political constraints included a public extension system focussed on conventional farming systems and limited support or recognition to AE farming systems approaches. Respondents put forward a range of suggestions as to how some of these identified constraints could be addressed or resolved, and these will be considered in report recommendations.

A project SWOT (strengths, weaknesses, opportunities and threats) analysis conducted in the survey identified the following key points.

1. Strengths: strong reputation project partners; push-pull integration; participatory approaches including NUS field evaluation and value chain development; AE approaches; women empowerment and capacity building initiatives.

2. Weaknesses; institutional complexities; communication; monitoring and evaluation implementation; skill limitations; funding allocation to activities and time constraints.

3. Opportunities; stakeholder platforms for expanding NUS; stakeholder partnerships; innovative food transformation models; seedbank and AE systems expansion.

4. Threats; limited skills project staff; political instability and influence; climate variability (rainfall); lack of long-term vision amongst beneficiaries; lack of recognition of farmer selection of varieties and lack of locally focussed government policy support.

Respondents considered that opportunities could be realised through supporting staff to take on a focused facilitation and engagement role; re-allocation of budget resources to areas of greatest need; strongly supporting NUS initiatives; enhancing support to farmers in developing NUS products, AE farming systems and the development of seed bank business models.

Participants considered that youth participation could be improved through engaging them in seed fairs and entrepreneurship activities (NUS product development) and producer groups. Boosting women engagement could be supported through engaging them in local leadership roles, participation in NUS crop value adding and product development opportunities and leading the development and management of community seed banks.

Respondents provided suggestions as to how best all three PUSH-PULL-POLICY elements could be integrated. It was considered that there needed to be a much higher level of integration of policy to the push-pull components, since all three components are complimentary to one another and need to take into consideration the dynamics of the value chains.

Recommendations were provided in relation to how the project could be further improved. These included increased support for field experimentation; improvements to the identification of NUS crop potential; increased capacity building of staff; the opportunity to apply a more integrated approach towards workshop training and greater consideration towards factoring in climate change and disaster risk reduction impacts.

FIGURE 1: Local farmers in West Bengal are benefiting from the allocation of an AE friendly marketing facility to sell their quality produce; assisted by local government policy intervention.

5. Shared Solutions Workshop results

Workshop activities included a project timeline review; identification and prioritisation of project challenges and opportunities; project field activity field visits; project performance assessments and the development of specific actions to address identified opportunities and challenges. The following represents a summary of the key outcomes associated with each of the workshop's exercises undertaken by participants.

Identified challenges and opportunities associated with the project

1. **Challenges: Chad and Niger**

   Identified challenges; push: multiplication of NUS and non-NUS seed crops; conflict in access to grazing land; promotion of chemical agriculture (and high use/dependency); pull: included missing a market structure for AE and NUS crops; availability of equipment for processing of NUS crops and for policy: agribusiness power, inconsistent approaches to seed policy.

2. **Opportunities: Chad and Niger**

   Identified opportunities; push: CACOPAS to promote AE farming; seed banks to help disseminate farmer seed and participatory selection; pull: development of NUS centred value chains; AE capacity building and NUS entrepreneurship; and for policy: review of regulatory frameworks for seed (revision of law 16) and the development of farmer seed systems.

3. **Challenges India and Tanzania**

   Identified challenges; push: quality seed availability; input availability (biopesticides, fertilisers, seed); lack of skilled human resources; viability of seed bank infrastructure; lack of scientific integrity; climate change and small land size; pull: no clear approach to

behaviour change; limited knowledge of using NUS crops in diets; changing food habits; limited business mindset at the community level; lack of financial incentives for AE and NUS produce; variability in production outputs and building consumer trust; and for policy: lack of innovative approaches to influence policies at all levels; complexity of the project and the partner capability; limited access to technical tools for sustainable production; lack of AE branding and packaging; no MSP for NUS; government focused on green revolution technologies; poor implementation of govt policies and election processes delay policy dialogue.

4. **Opportunities: India and Tanzania**

   Identified opportunities; push: increased awareness amongst consumers; opportunity to develop NUS products with value chain actors; social media outreach to increase awareness; pull: scope to collaborate with government schemes including community seed banks; increase collaboration with natural farming initiatives; integrate climate resilient practices into government programs; scaling up of AE across all crop types; and for policy: developing new support mechanisms such as infrastructure support for community seed banks; mainstream more farmer varieties; institutional and national recognition of NUS crops; expand government initiatives on rural entrepreneurship and introduce AE training to universities.

Actions that could be taken to address the challenges and opportunities

Participants attending the Shared Solutions Workshop identified key actions that could be implemented in an effort to address the prioritised challenges and opportunities. Specific actions worth noting are;

Establishing seedbanks (Chad); required actions include;

- Awareness raising amongst farmers about the importance and benefits of seed banks,
- Provision of resources for training and infrastructure for the establishment of seedbanks (and building up of initial stock).
- Policy intervention (Law 16) in particular addresses the ban on allowing farmers to trade and sell seed on national markets.

Developing farmer leadership development (Chad) (CACOPA's); issues with "malfunctioning" of CACOPA's include a lack of social cohesion, delays in implementing project activities and the ability to effectively disseminate good AE practices and knowledge. Required actions include:

- Provision of additional resources over a longer timeframe,
- Provision of capacity building, increased networking and targeting women and youth.
- Identify "champion farmers" as advocates, and provision of additional resources.
- Policy changes to recognise farmer traditional knowledge required.

Equipment for processing NUS products(Chad); lack of suitable equipment impacts on productive capacity of NUS processors, worsened by lack of NUS outlets (for marketing) and a low level of interest or awareness. Recommended actions include;

- Need to identify and specify the equipment type (and capacity) adapted to processor needs and products being processed.
- Require policy changes to tax exemption for processors of local products, energy policy (cost of electricity etc).
- Additional project resources needed for implementation of these recommendations.

CACOPA's (supporting expansion); benefits of expanding the CACOPA network will allow the project to reach out to a larger number of communities and farmers. Recommendations included;

- Increasing membership will provide greater visibility and a structure for the project,
- Utilising (and building) local leadership opportunities and engaging with local actors.
- Adopting a staged approach that is supported financially and gains local community support.
- Require government support, NGOs and policy to support expansion of the network.

Price, promotion and perception (India); focus on identifying how communities can be supported in marketing NUS crops/products through developing a clear market differential of products. Recommendations are:

- Undertake intensive consumer research at different food systems.
- Develop branding, labelling and licensing guidelines for product food safety based on different marketing systems. Establish a Regulatory Board for labelling.
- Increase awareness amongst stakeholders (doctors, religious institutions, PHC workers, nutritionists, social media, radio), involving personalities; and ambassadors of NUS products.
- Support collaboration with Govt and private sector for product promotion.

Behavioural change development (India) Supporting mechanisms for behavioural change (adoption and practice change), the following recommendations were identified;

- Identify major challenges and socio-cultural limitations in the community and how project outcomes/outputs are impacted.
- Self-assessment and/or reflection on the approaches and policies applied in the project (what effect do they have on addressing the identified problems).
- Map and allocate resources needed, pilot the behaviour change approach.
- Integrate behavioural change in the project planning and implementation (phase II).

Local Policy Development (India); Aim to initiate local policy development supportive of traditional NUS and AE food production systems, Recommended actions were;

- Support local market facilities and improve marketing opportunities for farmers.
- Develop plans for awareness workshops and policy actions at Panchayat, Block, district and State level; working with identified 'influencers' in the current and next project phase.
- Understand and link project activities with ongoing relevant R&D projects at all levels.
- Seed drives policy: develop state-specific policy reform, and promote AE, NUS crops, fish and livestock breeds/varieties.
- AE market interventions; processing, value addition and branding at farm-gate, local markets; increasing income/nutrition.

The highly driven participatory nature of the workshop resulted in all participants being able to share a common level of understanding of the project, including the joint achievements (to date), and specific actions to address the challenges and constraints moving forward. This provides an ideal base to continue with similar participatory workshops in the future as a means of developing shared solutions and approaches to project development as part of a "continuous improvement" approach.

Project site visits

Following the Shared Solutions workshop, additional visits to project implementation sites were undertaken by the appointed National Consultants (for Chad and India). This provided the opportunity to explore in detail some of the additional field activities that have been delivered through the project.

From the India visits, it was considered that the project should focus on addressing infrastructure needs, capacity building, policy advocacy, promotion of local enterprises, and fostering collaborative research and knowledge sharing to ensure continued progress and performance improvement. The need to develop partnerships with the various support schemes of central and state government that had similar objectives to the CROPS4HD project would be advantageous. Providing a focus on supporting the capacity building of different implementing partners in the area of product development, product nutrition, packaging and shelf life together with the need to build the business skills of FPC's was identified. The need for policy intervention and reform to support the development of an enabling environment for product development and value adding was identified.

From the Chad visit, it was evident that the project was well supported by local authorities. The project's approach to demonstrating new practices (as a means of convincing farmers of the specific benefits) is working as a worthwhile approach to tempting them to try and experiment with the new practices. There have been demonstrated yield increases as a result of the adoption of AE practices (primarily composting) indicated by those visited. The availability of raw materials for composting poses a major threat to future expansion of the practice by farmers.

6. The scorecard analysis results

A “scorecard analysis” from the CROPS4HD project is presented in the following table. The analysis is based on assessing the degree to which the project has addressed each of the OECD’s six Development Assistance Committee (DAC) project review criteria. These are relevance, coherence, effectiveness, efficiency, impact and sustainability. An additional criterion “mainstreaming of cross-cutting themes” included in the review’s terms of reference was also included in the scorecard analysis.

For each of the criteria, a number of assessment parameters are described for each. A summary description of the project’s attributes (as observed) according to the stated parameters together with the corresponding actions and a specific score rating for each (in terms of the level of achievement attained) is provided in the following table. This exercise served as the lead-in to the development of the review’s recommendations, provided in section 7 following the scorecard analysis.

4.1. Relevance		
Summary attributes	**Required actions**	**Score**
Parameter 1: Ability of intervention objectives and design to respond to beneficiary needs.		
The project addresses community needs. Demonstrated evidence of responding to the needs of the target audience.	Additional feedback mechanisms between farmer audiences and other stakeholders that assists in identifying farmer needs and to address project impediments is required	
Parameter 2: Degree to which objectives and project design are sensitive to economic, environmental and social conditions.		
Strong affiliation to stakeholder needs with good communication between project teams and farmers.	Opportunity to increase economic and business modelling support (NUS product development) and demonstrate economic impacts from project activities.	
4.2. Coherence		
Summary attributes	**Required actions**	**Score**
Parameter 1: Assess to what degree the components PULL, PUSH and POLICY complement one another in practice, and whether there are any substantial gaps or redundancies.		
Evident that there is a strong association between pull and push parameters. Policy integration in some instances is limited particularly at the on-ground project implementation interface, as demonstrated through the Shared Solutions Workshops.	1. Greater integration of push-pull-policy is required. On-ground policy interventions amongst the actors are required, as is greater emphasis on national policy issues (policy impacts need to support push-pull actors). 2. Project stakeholders need to recognise that practice change recommendations are based on sound scientific evidence-based principles, particularly relating to on-farm AE systems management and NUS variety development.	

Parameter 2: Evaluate external coherence of the project intervention with any other actors' interventions beyond CROPS4HD (including consortium members, communities and govt agencies) in the same context in terms of complementarity, harmonisation and coordination with others and extent to which the intervention is adding value.		
The project is adding significant value to other actor's interventions. The challenge relates to the need to change policy (and attitudes) towards NUS and AE farming systems, this takes time to achieve.	1. Need to work more closely with government agencies, and ministries. This requires practical policy intervention, promotion of NUS and AE to change attitudes. Whilst there are good examples of this happening, efforts need to be "ramped up" in a targeted and planned manner. 2. Through developing closer partnerships and alliances with Government supported initiatives in India, the opportunity of accessing additional resourcing (co-investment) for FPO groups.	
Parameter 3: Assess involvement of the different policy partners (national, continental, international) to improve collaboration and impacts		
In the African context policy partner linkages are well demonstrated at the three levels. This is less evident in the case of India; with the overall policy interventions not clearly demonstrated.	1. Policy partners require clear objectives to support the on ground activities in the respective countries. 2. There's an opportunity to enhance synergy of efforts, on the basis of linking the needs of stakeholders to overall objectives and supporting policy reform (capturing regional impacts).	
4.3. Effectiveness		
Summary attributes	**Required actions**	**Score**
Parameter 1: Assess whether output and outcome targets/indicators are on track, and whether the choice of indicators is appropriate.		
The outcomes (and targets/ indicators) are comprehensive (program logic). Indicators appropriate and targets on track.	1. There could be some minor adjustments to the annual reporting, in terms of providing visual summaries of the overall project performance (for easier interpretation of outputs achievements).	
Parameter 2: Assess the role and contributions of different stakeholders at local, regional and community levels in the four program countries.		
At both the international coordination level and "on ground" project implementation, there is a high level of leadership and commitment from FiBL, SWISSAID; and project teams. There is the opportunity for SWISSAID Country Managers at a national level to adopt a more pro-active role of engagement and advocacy for the project.	1. Stronger project leadership at a national level is required, through taking on a "project advocacy" role and higher levels of accountability for project performance and impact, and driving policy reform. 2. Delivery partners should be engaged to assist in providing increased project support and assist in lobbying for policy reform. 3. Supporting multiple team approaches can be further enhanced through improved communication between all partners. Providing participatory driven forums (similar to the Shared Solutions Workshop approach) would be beneficial.	

Parameter 3: How contextualised if PMCA (PULL) to low and middle income countries?		
The PMCA training process has achieved significant impacts through building the skills of delivery partners and in turn farmers and entrepreneurs who now successfully development NUS products, by motivated stakeholders.	1. Boost promotion and expansion of NUS product development, utilising the PMCA approaches to assist in out scaling and future project impacts.	
	2.Upskilling of local delivery partners on value adding to products (market-push elements) is required.	
	3. An increased emphasis in developing business support attributes to local actors linked to the PMCA process would be beneficial	
4.4. Efficiency		
Summary attributes	**Required actions**	**Score**
Parameter 1: Evaluate the extent to which the intervention delivers or is likely to deliver results in an economical sense and within the intended timeline.		
Evidence of project interventions meeting project objectives and outcomes was clearly demonstrated. What has not been explored in detail are out scaling strategies to achieve uptake by a larger audience of benefactors.	1. Closer consultation with project delivery leaders relating to project resource needs would help ensure resources are directed to areas of greatest need. 2. The cost of servicing farmer groups (cacopas) and developing financial support models for initiatives can help support out scaling plans.	
	3. Allocation of resources needs to be based on the successful delivery of project outcomes. Increased accountability (contract payments on achievement of outcomes) is advised.	
The level of financial resources allocated to developing NUS varieties (mother trials, baby trials) is resulting in the achievement of significant project impacts.	1. There are instances where moderate rates of “trial failure” occur (trials sown but not harvested). The reasons for the failure rate needs to be investigated further to see if this trend can be reversed to improve results.	
Parameter 2: Assess the efficiency and cost-effectiveness of project implementation, to date, using the cost-effective analysis.		
This is difficult to assess and measure, given that the only reliable source of data available is from the initial baseline survey work.	1. There is a need to develop specific impact assessment models that demonstrate the cost and benefit of the interventions that take place. This will help to develop improved cost models for intervention, and ensure resources used maximises impact and practice change. This may be possible with further project M&E activities that build on the initial project baseline data.	

4.5. Impact		
Summary attributes	**Required actions**	**Score**
Parameter 1: Assess the extent to which the project has achieved its stated objectives and expected outputs and results, while identifying the supporting factors and constraints that have led to them, including strategies and implementation modalities chosen, and partnership arrangements.		
It is evident that the project overall is on track to achieving the anticipated results and outputs. There are however a range of identified constraints that have been identified through the workshop that may inhibit the opportunity to fully realise project outputs. A range of critical success factors contributing to overall project success have been clearly identified and demonstrated.	1. Attributes supporting project objectives and outputs need to be adopted by all project partners; (a) organisational collaboration; (b) producer focus; (c) systems approach; (d) AE approaches; (e) push pull policy integration; (f) women empowerment (g) value chain approaches; (h) teamwork (i) NUS focus. 2. Constraints threatening the achievement of project objectives and outputs that need to be addressed include; (a) resource limitations (financial, time, land size); (b) communication between partners, countries; (c) policy linkages; (d) climate change; (e) road infrastructure (f) staff challenges (capacity, workloads, turnover).	
Parameter 2: Assess project impact (including where project support has been most/least effective and why), including the extent to which community capacities to maintain and manage seedbank and government institutions to oversee and enhance the use of NUS have been strengthened, and the project increasing household economic impacts.		
It is difficult to specifically identify geographical regions where the project has been most/least effective, since there are a range of specific impacts (usually outside of the control of project partners) that impact on overall effectiveness. There are some general recommendations identified through the Shared Solutions Workshops that when implemented will have a positive impact. Recommendations identified here take into consideration opportunities to enhance project impacts relating to seedbank and NUS strengthening.	There are regional differences in relation to the effectiveness of project implementation with NUS and community seedbanks (influenced by relative skills and capabilities of implementing partners). 1. Undertaking a skills audit (partners) to provide targeted training in NUS crop/seedbank enterprises. 2. Identifying delivery partners with higher levels of expertise and commitment to supporting NUS and seedbank development offer opportunities for increasing impact and out scaling. 3. Targeted skills training of local actors involved in managing NUS crop development and seedbanks will increase impacts (participatory variety selection, business management skills). 4. Developing stronger partnerships with government to support seedbank establishment and NUS crops will support project outcomes. Requires political will (policy reform and intervention locally). 5. Increased effort in household modelling that demonstrates economic benefits gained by households (could be undertaken a part of a case study approach).	

	6. There is a need to promote the nutritional benefits and diet diversity options available with NUS crops through additional intervention activities.	
Parameter 3: Assess how the policy component can shape national and (within Africa) international discussions on protection/proliferation of farmers' seed varieties (NUS).		
The protection of farmers seed varieties (and NUS) is critical to the future success for farmers. Policy reform interventions are critical to achievement of project outputs as demonstrated through the synergies of push-pull-policy.	1. There is a need to adopt a coherent approach to (1) identifying key policy influencers; (2) develop common approaches to changing attitudes towards the value of NUS crops, AE production systems amongst decision makers and policy influencers. Improved approach to capturing policy reform impacts is required.	
Policy interventions internationally are underway by the policy team. Progress is slow, requires the need to identify influencers of policy at a government ministry and political level.	2. Whilst the African policy team work collaboratively, there is less supporting evidence for India. There needs to be greater visible presence and links to on-ground project activities supporting push and pull components. Policy interventions need to support NUS crop development, farmer seed selection and seed banks. Policies need to address policy constraints amongst farmer/ entrepreneurs.	
Parameter 4: Identify unexpected positive and negative results of the project.		
The project has made significant achievements since inception, given the challenges of the post-Covid era, challenges in the political governance, and working in some of the most socially challenged agricultural environments. There have been a range of both positive and negative attributes associated with the project that have been identified through this review process. Capitalising on the positives and addressing the negatives will assist in achieving greater project impacts and achievement of overall objectives.	1. Positive contributions by workshop participants exceeded expectations, and is a valuable asset reflecting increased HR capacity built over time through SWISSAID project activities in the regions.	
	2. The project has demonstrated the range of project intervention methodologies with success (NUS crop evaluation, farmer participatory varietal selection, AE systems, farmer seed bank establishment). There is an opportunity to apply these successes in a more consistent manner across all project sites.	
	3. The impact of PMCA and engagement of entrepreneurial women/youth is exceptional. This needs further support through policy support and removing specific barriers "champions" encounter.	
	5. Through FiBL, post-grad students (PhD and Masters) have undertaken research studies linked to the project. Outputs have provided deeper understanding of various elements of the project. This is contributing positively to project outcomes, and developing the capacity of young researchers linked to the four countries.	
	6. There is a need to develop out-scaling strategies that will achieve greater impact amongst more beneficiaries; extending the success stories beyond the pilots (limited focus in this area to date).	

	7. Whilst the role of cacopas (Chad) and FPO's (India) are recognised for positive intervention, additional support to expanding such networks (leadership and business development) is required. Additional resources available within the project (Tanzania) and FPO establishment guidelines (India) are available. Cross team and cross country dialogue is recommended.	
	8. There is a need to integrate cultural practices and risk management strategies into the farmers AE systems to address climate change impacts. A coordinated strategy that addresses climate change impacts through developing tactical and flexible management approaches at the farmer field level should be developed.	
	9. Farmers enthusiastically adopt many AE practices (composting) with delivery teams committed to the practices. There is the risk that some practices recommended have not been evaluated based on scientific principles. It is recommended that training be provided on conducting on-farm demonstrations and comparisons (traditional versus new practices), so recommendations are validated scientifically, evidence based and defendable.	
Parameter 5: Assess the existing risk management framework of the three components in terms of the four geographical contexts and, where applicable, identify additional risks to project implementation and the achievement of the project targets.		
The risk matrix frameworks for country documents identified additional risks; (1) lack of financial incentives for farmers to produce NUS crops results in less farmer engagement (2) project delivery partners don't have all the skills and capability to deliver on the required project activities and outputs.	These particular risks were identified through the Shared Solutions Workshop process. Specific responses to addressing these risks have been identified and are integrated into a number of specific project recommendations.	
Parameter 6: Assess strengths and weaknesses, opportunities and challenges and any external factors that have affected the achievement of the immediate objectives and the delivery of the outputs.		
A SWOT analysis summary: **Strengths** Reputable organisations Committed delivery partners Interlinked push-pull; participatory varietal selection; farmer seed banks; technical integrity (NUS field trials); Cacopa farmer networks; capacity building and training; PMCA approaches	Opportunities can be capitalised upon through the following project interventions; • Ensuring PULL related staff develop a facilitation role and engage in networking activities supporting consumer awareness campaigns. • Increase budgets for strengthening promising existing and creating new business ideas; with a small grant scheme.	

Weaknesses Institutional and govt complexities Communication Implementing M & E tools Allocation of project resources Resource limits (implementation) Skill amongst delivery teams	• Well-implemented strategic and technical (FiBL) backstopping, for both PULL and PUSH. • Engage all stakeholders in NUS product development and marketing of NUS; promote NUS products to consumers. • Increase direct engagement with Government and research institutions; so that households gain benefits for better livelihood development. • Facilitate the "learning by doing" into training curriculum, targeting farmer groups through participatory engagement. • Need based infrastructure support creation, exploring scope for digital marketing, support to potential market players etc. are important opportunities around food system transformation. • Support improved seed bank business development through (1) strengthening quality assurance mechanisms, (2) exposure to successful seed banks, (3) engagement with agro-input dealers; (4) strengthen community organisational support for efficient management of existing assets; (5) build farmers' capacity in terms of material and technical resources (6) accessing genetic material from WVC.	
Opportunities Established stakeholder platforms to boost NUS awareness and production, seed banks, NUS products and markets Improve access to organic inputs to support AE crop systems. Increase women/youth engagement.		
Threats Political instability; NUS health benefits not valued; environmental threats; local food security threats shift emphasis away from NUS crops; delays in policy reform support; poor market differentiation of NUS crops may lead to farmers abandoning NUS crops.	N/A	
Parameter 7: Assess how the choice of seeds and crops was informed by nutrition-sensitive project design using specific characterisation of the nutritional status of the target population in the project area (nutritional status, malnutrition diet characterisation and diet gaps)? and Parameter 10: Assess the real or potential impact on improving diet diversity and nutrition.		
Baseline indicator survey; valuable data collected relating to nutritional status of communities. There is limited evidence demonstrating project interventions that respond to the nutritional status (and dietary gaps) of target populations. At the same time, access to the nutritional profiling of NUS crops is progressing through the work of Bioversity International.	There is a need to address this parameter across all countries. Considerable effort has been undertaken in NUS variety identification, PMCA and NUS systems development. It is now an opportune time to provide a targeted approach to aligning nutritional status/needs of targeted populations to specific NUS crop dietary options, since a greater depth of knowledge of the nutritional content of NUS crops has been prepared by Bioversity Int. through their research. Information will allow a targeted approach to NUS crop selection and alignment to meet local dietary shortfalls.	

Parameter 8: Assess the triggering mechanisms (communication campaigns about nutritional benefits) developed to increase knowledge, information and demand of urban and rural consumers for products from farmers' varieties/landraces, NUS – are those successful?		
There are many communication and awareness raising activities undertaken by project delivery partners across all four countries. These campaigns have covered a wide range of topics relating to the promotion of NUS crops largely at the farmer level. Some efforts in the promotion of nutritional benefits to urban consumers, through awareness and demand on social media (with metrics indicating large audiences have been reached through these initiatives).	1. Whilst the specific social media access metrics indicate large audiences have been exposed to the awareness campaigns, there is limited evidence to demonstrate changes in consumer behaviour (consumption demand for NUS grains or products). 2. Need to identify consumer consumption intent through a case study approach. It is important to link this process with NUS product entrepreneurs (market potential). Undertaking a series of focus group studies would be a worthwhile exercise in order to obtain direct feedback for the project, whilst linking entrepreneurs direct with consumers and enhancing their market research capabilities and consumer preferences (and potential demand).	
Parameter 9: Assess if and how the project intervention has changed dynamics and relations between producers and consumers? How successfully are consumers enticed to prefer shorter value chains?		
Valuable achievements by linking farmers (producers of NUS crops) with NUS product processors (not always farmers). The NUS processors who have been visited through the field trips) have been extremely motivated and committed towards value adding to NUS crops and reaching out directly to consumers.	1. The project is successfully achieving shorter value chains and links farmers directly with consumers (or though processors of NUS crops into value added NUS products. An opportunity for the project to support these links further, through facilitating market research and upskilling actors in this respect. 2. Additional market research targeting consumers is required as part of supporting the product development cycle.	
4.6. Sustainability		
Summary attributes	**Required actions**	**Score**
Parameter 1: Evaluate to what degree the set-up of the three outcome components is likely to achieve systemic change in the way NUS are grown and marketed, not least bearing in mind the stress factors of political instability and climate change to the degree applicable in the four programme countries. In particular, to what degree are the PULL and PUSH components aligned and mutually supportive?		
The PPP components are well aligned and the process documented with many good examples of all three working in synergy. Further efforts are required to ensure common adoption in all project related activities. The Push and Pull components are well aligned with evidence of support.	1. Additional efforts in policy refinement is required to ensure that push-pull activities can be implemented by actors free of political and policy constraints. This requires a more concerted effort, with policy working more closely with push-pull project team members and actors. 2. National managers of SWISSAID can play a "hands on role" in supporting this revitalised approach to achieve greater targeted impacts.	

Parameter 2: Estimate to what extent are the outcomes and benefits of the project likely to continue after the end of this project phase?		
There are expectations that at the conclusion of the project impacts continue as a lasting legacy remains. As part of the future visioning workshop exercise, participants described the “lasting project legacies.” Participants were able to list a wide range of benefits, including NUS crops being an accepted food source, strong consumer support, entrepreneurial activity (NUS product development) being led by women and youth, recognition in diversity of seed systems, govt support to NUS systems, ready access to NUS seed, reduced poverty amongst producers and improved nutrition and scaling up of AE practices.	Further improvements in project implementation is required through the following actions; 1. Undertake policy interventions that address on ground barriers to NUS product development, farmer seed selection and seed banks, product marketing. 2. Develop out-scaling strategies for each country that sets NUS crop and product expansion targets. 3. Develop self-sustaining models for farmer group engagement and participation. 4. Identification and development of long-term partnerships with government, other NGO’s, R,D and E and university organisations; with the view of developing complimentary project activities 5. Develop a communication and agricultural extension strategy for each country. Focus on implementing activities that raise awareness of NUS crops, AE practice, nutritional benefits to farmers, consumers, NUS product developers, government officials (market segmentation approach). 5. Conduct a skills/capability gap audit for delivery partners to and deliver targeted training .	
Parameter 3: Assess the impact of the policy process in terms of its’ reach and potential to change the political process around peasant seed systems, and where appropriate, recommend changes.		
Policy intervention objectives include supporting the development of an enabling environment for farmer managed seed systems. This is supported through international policy reviews across various international platforms. Countries target policy makers through raising awareness of the benefits of farmer seed systems and NUS crops. This is a slow process, with the policy team committed for “the long run”.	1. Activities to date have been successful in raising awareness of the benefits of farmer selected and managed seed systems and NUS crops. It is important that clear strategies are developed that will assist in moving to the next step of achieving change in policy at a govt. level. 2. A “stocktake” is required to review all four countries, and to develop intervention strategies and actions together with policy team members (who ideally are actively working in-country). Planned interventions need to be supported by SWISSAID country managers, who need to take on a greater role to supporting policy intervention strategies.	
4.7. Mainstreaming of cross-cutting themes		
Summary attributes	**Required actions**	**Score**
Parameter 1: How has the promotion particularly of female beneficiaries but also of young people been applied? Provide recommendations as to how they might be promoted further in a future program phase.		
The participation of women in the project is clearly demonstrated at all levels of delivery. Women are actively engaged in NUS crop research and selection. Women	1. There is the opportunity to engage youth in local farmer and community groups to a higher degree, through developing youth specific activities. In some	

entrepreneurs are providing true leadership in the development of value added NUS products. Youth are actively engaged in NUS crop production/product development and AE systems development. Project activity delivery team members are well represented by highly skilled women; a valuable asset to the project.	instances, project activities need to be tailored to their interests and employment opportunities. 2. There is an opportunity to enhance the leadership capabilities of women and youth, through offering training opportunities linked to local group activities. This will help to build their confidence and abilities to lead local community groups and organisations.	
Parameter 2: Does CROP4HD equally involve and serve the immediate and strategic interests of women and men in all three dimensions (PUSH, PULL, POLICY) and if there are differences, what are the reasons and how can we overcome them?		
The project aims to engage with men and women in an equitable and non-discriminatory manner. Groups are led mainly by women, with few male group members. Women actively establish and manage seed banks, NUS crop value adding (entrepreneurial roles). Both male and female farming members are engaged in marketing of produce and performing crop cultivation. These examples apply to the push-pull dimensions. In terms of policy interventions at the govt. level, males dominate process.	1. There is an opportunity to develop the leadership capabilities of women engaged in the project (as proposed in parameter #1 directly above). 2. The CROPS4HD has successfully engaged with, and supports women at all levels of project planning, development and implementation. The engagement initiatives of women is to be commended, with the view of re-enforcing these approaches as the project continues to be implemented.	
Parameter 3: Evaluate how well the program is designed to cope with effects of climate change (stress) and sudden meteorological events (shocks). What measures should be considered to strengthen resilience of beneficiaries; and **Parameter 4: Formulate recommendations for strengthening the DRR approach in the view of climate change adaptation and environmental conservation.**		
The project has been challenged by the impacts of rainfall variability, drought, heavy monsoons and floods. This has impacted many NUS trials and demo's and farmer crop production. Whilst the impacts of climate change are mentioned by delivery partners, there is limited evidence to suggest that there have been	1. The project needs to develop specific practices that can be adapted to local agro-ecological systems and implemented by farmers that provides "tactical" opportunities to dealing with climate change. 2. the formation of project task force teams on a country by country basis need to follow a consistent approach to address the issues and develop an integrated climatic risk management plan as follows; (a) defining and quantifying the impacts of climate change (and DRR) regionally; (temperature, rainfall, severe weather events) and impact on production. (b) developing risk management strategies that can be integrated by farmers in their decision making processes, as well as their tactical (agronomic)	

any significant interventions built into delivery of activities. There have been additional requests for additional resources for the provision or irrigation facilities for crops, however whilst this may assist in “drought proofing” small areas of crop, it is not a long term solution to dealing with climate change impacts. Similar feedback is also relevant for DRR, with the current project providing limited reference to mitigating DRR impacts.	management (varietal and crop choice, specific flexible approaches to agronomic management, understanding soil water conservation and conservation agriculture principles). (c) a greater emphasis on NUS crop characteristics in relation to drought tolerance, water logging characteristics. (d) commission targeted research examining the development of AE systems and introducing improved cultural techniques responsive to climate change. (e) CROPS4HD project leaders should actively form strong working relationships with other organisations and agencies that are focused on climatology, DRR, risk management and climate change policy development.	

TABLE 1: Project scorecard analysis based on the review’s assessment criteria.

Rating Scales

Colour	Rating (out of 10)	Description
	>9.0	Excellent progress, no concerns.
	7.6 to 9.0	Very good progress, some improvements possible.
	6.1 to 7.5	Good progress, further improvements recommended.
	4.0 to 6.0	Satisfactory progress, action required to address concerns.
	<4.0	Serious concerns, urgent action and potential project redesign required; project termination if not resolved.

7. Project recommendations

The following table provides all of the project recommendations that have been identified through the mid-term review process. Recommendations have been grouped into a series of 15 thematic areas, with a series of specific actionable recommendations provided for each.

The recommendations have been categorised according to the area of “responsibility” for “actioning. These categories are (1) strategic (2) project management and (3) operational (delivery). The third column of the table provides an assessment of the specific countries that the recommendations apply to. These are (1) all countries (2) Tanzania, (3) Chad (4) Niger (5) India and (6) strategic applications.

It should be noted that the majority of the recommendations apply to all countries. To delve down to a deeper level of specific country characteristics, the Shared Solutions Workshop activity summaries provide this additional detail together with the survey questionnaire results. This level of detail will not change the nature or intent of the recommendations but may provide useful insight when responding to the recommendations on a country-by-country basis. The majority of strategic recommendations will be critical to shaping a phase 2 project design.

The project management recommendations provide guidance in addressing some of the overall project improvement needs (generally systems-based) that can be actioned within the current project phase and/or introduced in the second phase of the project. Specific commentary in terms of the timing is provided in this respect. The operational (delivery recommendations) focus on actions that the respective country teams can address to help improve delivery and impact, and are generally focused on introducing such recommendations as an immediate priority.

Whilst the large number of project management and operational (delivery) recommendations may appear overwhelming, a structured and planned approach to progressively implementing such changes will assist in this process. This process can be led by a team of newly appointed national project coordinators (appointed to each country), supported by appointed working groups (with representatives from each of the four countries) to assist in the implementation process for the recommendations.

Project Recommendations

Recommendation category (for implementation)	
	Strategic recommendations *Strategic intent, project priorities and focus*
	Project management recommendations *Improving project management systems, leadership and coordination*
	Operational (delivery) recommendations Improving on-ground impacts and activity delivery

Overview of recommendation	**Specific recommendations (actions)**	Target countries A=All T=Tanz C=Chad N=Niger I=India S=strategic
1. Develop strategic partnerships and alliances to assist in accelerating project impacts (phase 2). There is the need to vigorously explore and extend partnerships and alliances that are capable of assisting in achieving greater impact for all stakeholders along the NUS value chain.	1.1 Identify opportunities to form strategic project investment alliances and collaboration to boost co-funding contributions in phase 2. Undertake a scoping study to identify potential partners (internationally and within country networks) to engage in phase 2 project co-design processes. This will support expansion of project co-funders, whilst expanding CROPS4HD project benefactors.	S
	1.2 Linked to #1 above expand collaborative engagement of Biodiversity International and other CGIAR organisations (and others e.g. Australian Centre for International Agricultural Research (ACIAR)) who are undertaking similar research in NUS crop development.	S
	1.3 Ensure that the development of specific out-scaling strategies* for each country (including establishment of NUS crop and product expansion targets, practice change and adoption levels) are written into the phase 2 project design documentation. ** in terms of referring to "out-scaling" the intent is to develop strategies for accelerating the adoption of new practices from a pilot phase "proof of concept" (few adopters <2%) to widespread adoption (amongst a wider audience (many adopters 10-25%)*	A
2. Improve the positioning of CROPS4HD as being a key driver for NUS related policy intervention and reform amongst SDC (county representatives), Heads of Government and Senior Policy makers. There is an important need for SDC (and project partners) to pro-actively	2.1 SDC needs to ensure that all of their country representatives (where the project is being delivered) are fully briefed and kept up to date with project activities and achievements. This will require improved communication and updates to be provided, together with on-going face to face dialogue between country representatives, SDC and project managers. This initiative needs to be introduced during the current project delivery phase and continue into phase 2	S
	2.2 SWISSAID Country Managers to build stronger relationships and lines of communication with SDC country representatives. The Country Managers to take on an increasingly influential role in supporting the	A

position the CROPS4HD project as a key vector in driving policy intervention and change in support of farmer developed NUS varieties, NUS seed production, seed banks and NUS products for human consumption at a national level. Opportunity to broaden resource base and co-funding awaits.	development of closer ties with government agencies policy makers and Ministry officials. This initiative needs to be introduced during the current project delivery phase and continue into phase 2	
	2.3 Strengthen collaborations between project managers, SWISSAID Country Managers with govt agencies to support seed bank establishment, develop NUS crops, support farmer organisations and policy reforms. This aims to address weak linkages and current "lost opportunities" in terms of collaboration and widening the project resource base.	**I** **T** A
3. Provide a renewed focus on policy interventions supportive of improved NUS market chains and protection of farmer seed varieties at grass roots level for phase 2. The protection of farmers seed varieties (and NUS) is critical to the future success for farmers. Policy reform interventions are critical to achievement of project outputs as demonstrated through the synergies of push-pull-policy. As the project moves to phase 2 there is the need to refocus policy support towardsaddressing policy constraining-related issues that impact stakeholders at the "grass roots level" as highlighted through the review process.	3.1 Provide a renewed focus on policy interventions on-ground targeting and supporting the needs of project participants. Develop specific guidelines and common approaches to policy intervention within countries and across the project (whilst linking project delivery staff communication and collaboration across the push-pull-continuum by improving communication and engagement).	A
	3.2 Provide a greater visible presence of policy intervention initiatives and link to on-ground project activities (supporting push and pull). Policy interventions to support NUS crop development, farmer seed selection and seed banks (and other policy constraints amongst farmer/ entrepreneurs).	A
	3.3 SWISSAID Country Managers to take on a greater advocacy role supporting policy intervention. This can be achieved through utilising their networks and connections with senior government officials and exercising proactive engagement in the project.	A
	3.4 Develop improved approaches to undertaking policy intervention on-ground through applying a more coherent approach to (1) identifying key policy influencers; (2) developing common approaches to influencing and changing attitudes towards NUS crops, AE production systems amongst policy influencers and (3) capturing policy reform impacts as part of the M & E assessment process.	A
4. Develop and integrate practical approaches to managing climate change impacts by farmers in AE based NUS production systems. Need to integrate cultural practices and risk management strategies into the farmer's AE systems factoring in climate change impacts. Specifically, at the farmer	4.1 Integrate climate change (and DRR) strategies and actions into phase 2 project outputs (and attributes).	S
	4.2 Ensure that additional research components are included in phase 2 (led by FiBL) that include (1) prioritisation and categorisation of NUS crop characteristics relating to drought tolerance in selection, and (2) the development of a systems approach to mitigating climate change impacts through identifying practical "best management risk reduction practices" farmers can adopt.	S
	4.3 Ensure that at a country level climate and disaster risk reduction tools and activities undertaken through CROPS4HD are aligned to, and link with other national project investments and Government policies (relating	A

level tactical and flexible crop management practises at the farmer field level need to be developed.	to climate change). This will help to ensure complementarity between projects, strengthen collaboration and ensure farmers and other stakeholders receive consistent messages.	
5. Accelerate adoption and practice change through applying behavioural change principles to project activity interventions. The project has taken steps to developing participatory-driven approaches including farmer participatory variety selection and NUS product development utilising PMCA. There is however significant opportunity to expand these interventions and approaches across all countries, in addition to strengthening the skills of front line project delivery staff through providing future training opportunities.	5.1 Conduct country specific workshops for project delivery staff to develop improved communication and participatory extension approaches for working with farmers and other value chain stakeholders. Note: the workshop should focus on addressing barriers to practice change and adoption (linked to project delivery). Utilising session outputs from the Shared Solutions workshops will help in this process. Ensure appropriate feedback mechanisms between farmer audiences and other stakeholders occur (so that farmer needs are identified and constraints to adoption are identified and addressed).	A
	5.2 Critical for phase 2 project implementation design documents target practice change amongst farmers based on behavioural change principles. This should be integrated into country specific ag extension strategies (including developing self-sustaining models for farmer group engagement and participation and women and youth).	A
	5.3 Conduct training workshops relating to participatory extension approaches . Workshops to focus on behavioural change interventions and supported through peer to peer learning and mentoring. Training to target project delivery team members as part of a phase 2 training and development activity.	A
6. Increase project moniotring frequency for assessing project impacts and change. Need to increase M&E assessment to ensure timely monitoring of project impacts. The project has an outstanding baseline status and be complemented by additional tools that can provide timely status updates on achievements, rather than waiting until the conclusion of the current project delivery cycle.	6.1 The reporting of project impacts (in annual reporting) whilst detailed in content can be redesigned to help provide visually attractive summaries of the overall project performance. This will allow easier interpretation of outputs and achievements).	A
	6.2 The introduction of stakeholder “case studies” as part of the project’s monitoring and evaluation (and impact assessment) activities are recommended to help provide a timely demonstration of project achievements (and challenges). Each case study (4 per country) to be reported on annually, focusing on the impacts and practice change.	A
	6.3 Develop cost-benefit impact assessment tools that are used as part of the case studies to demonstrate overall benefits to stakeholders and ensure project resources maximise economic impact and change.	A
7. Provide an increased focus on the nutritional status (and dietary gaps) among target	7.1 An increased focus of addressing health and nutritional elements as part of the project design and resourcing for phase 2 is required.	S
	7.2 The nutritional status/needs of targeted populations needs to be aligned to specific NUS crop dietary	A

populations in the project. The review demonstrated limited evidence of project interventions addressing the nutritional status (and dietary gaps) of target populations. A targeted approach to aligning the nutritional status/needs of targeted populations to specific NUS crop dietary options is required. As the project matures, there is the need to promote NUS crops as a means of improving nutrition (and calorie intake) supported by better understanding of consumer preferences.	options. This needs to be supported through the depth of knowledge of NUS crop nutritional content (that has been identified through the research of Bioversity International). Information will allow a targeted approach to NUS crop selection and alignment to meet local dietary shortfalls.	
	7.3 In phase 2 of the project the addition of nutritional modelling (base diets, food dietary input substitution with different NUS product options) as a research component is required. This would progress to the establishment of monitoring benchmarks for nutrition and dietary intake that would guide project interventions and serve as an M & E tool.	S
	7.4 Formulate a targeted approach (and increased awareness) to creating consumer demand based on addressing nutritional needs of targeted populations. An improved and targeted social media awareness campaign needs to be included in this action. This needs to link to the research recommendation above.	A
8. Build leadership capabilities of farmer groups and networks (incl women and youth) From the review, there were examples of women (and to a lesser extent youth) being engaged at all levels of the push-pull activities of the project. Project partners need to demonstrate a strong commitment towards engaging women at all stages and levels of project delivery activities. Leadership training for local farmer groups was also identified as an important need.	8.1 Provide dedicated leadership training opportunities for women (and youth) to support increased participation at every stage of planning, development, and implementation. This will help ensures a more inclusive approach to project delivery and harness the full potential of women and youth engagement.	C N I
	8.2 Introduce and expand mentoring (and “peer to peer” learning) opportunities amongst stakeholders engaged in NUS product development (largely women and youth). Provide a focus on encouraging “start-up opportunities” and “self-help groups” in NUS product development for future expansion. Initiatives ideally need to take place on a local and regional level, initially as a “pilot program” that can be progressively expanded through self-help groups.	A
	8.3 Clarify the key intent and priority for SDC’s investment in the CROPS4HD project (as it progresses to phase 2) in terms of the balance between a focus on (1) “proof of concept” of CROPS4HD project interventions; versus (2) maximising the potential impact (or footprint”) through amplifying the impacts of project activities (that would require increasing emphasis on out scaling and resourcing of expansion of farmer group networks.	S
	8.4 Provide additional support for the expansion of farmer groups/networks (Cacopas in Chad/Niger), reflecting the positive roles they have in intervention.	C N
	8.5 Specific participatory extension training resources and approaches as developed and utilised in Tanzania need to be made more widely available to other countries, with specialist training provided.	T A
	8.6 Link project delivery initiatives with government supported Farmer Producer Organisations, including training opportunities.	I

9. Develop a streamlined approach to project partner skills and capability assessment, training and needs analysis The review identified gaps in the skills and capabilities of project delivery partners to effectively delivery the range of elements associated with the project. Some partners had highly developed skills in certain areas, but lacked skills in other areas of project implementation that are critical to overall project delivery. There is a need to deal with such "skill gaps".	9.1 Develop an overall project training and capacity building strategy for the project that assists in providing a coordinated approach to skills assessment, training prioritisation and delivering skills training to project partners, stakeholders and the wider community. A segmented approach to identifying the audience (and training needs) is required; developed for phase 2.	A
	9.2 Undertake a streamlined skills and capability assessment and training needs analysis (on a country by country basis) amongst project delivery team members and organisations. Specific steps are outlined; (1) core delivery skills are identified for successful project delivery (2) skills and capability assessment undertaken (3) training needs identified (4) training and capacity program developed, tailored to needs of the target audience.	A
	9.3 Provide clear guidelines and protocol in terms of identifying and appointing delivery partners based on assessing their specific skills that are required to deliver the technical aspects of the project across the push-pull continuum (and provide training to address such gaps and/or "peer to peer" learning between collaborating organisations).	A
	9.4 In phase 2, prioritise funding to support post-graduate research opportunities for supporting the inclusion of post-graduate students to undertake focused research. Utilise the experience of FIBL to coordinate and manage this initiative based on their achievements to date. Students engaged from participating countries.	S
10. Ensure a focus of "good science" approaches to NUS participatory research and plant breeding AE systems development is underpinned by reputable international research organisations The project is making steady progress with the identification and development of NUS varieties, enhanced AE systems (through farmer engagement). The project should be underpinned by robust "good" scientific research and inquiry that provides a scientifically rigorous platform for developing project activities. (links to international CGIAR and	10.1 Increased engagement and collaboration (phase 2) of the project with reputable research institutes (CGIAR and other international organisations) in the area of participatory research and plant breeding. This will help to ensure technical integrity and access to skills and expertise), continued quality and sustainability of research and associated concept breeding programs. A research coordinating role to oversee these initiatives should be continued by FiBL in phase 2.	S
	10.1 Continue the investment in NUS variety research (phase 2) to ensure a continued "pipeline" of new species/varieties and ensure validation and appropriateness of cultivars.	S
	10.2 Ensure that project methodologies are underpinned by robust scientific research and validation when implementing activities in current and future phases.	A
	10.3 Introduce more robust approaches to managing NUS trial activities (including accountability for trial failures amongst delivery partners). Develop a risk management framework and provide higher levels of supervision to ensure successful outcomes (e.g. reduced failure rates).	N
	10.4 Develop and introduce short course training programs relating to how to successfully conduct on farm demonstrations (for example appraising	C

FiBL engagement). This will help to provide much needed support to the current FPO's and NGO's who are challenged by limited technical resources and team capabilities.	traditional versus new practices). This will help ensure that recommendations are validated scientifically, and are evidence based and defendable.	N
11. Develop NUS seed production and seed banks, NUS products, market chains and consumer behaviour Increase access to NUS seed, and strengthen NUS market chains to address (1) challenges in accessing NUS seed from farmers and (2) few established markets for NUS crops and AE produce. Actions need to help (1) strengthen the market value chain of NUS crops; (2) develop new marketing strategies for the sale of products; and (3) increase marketing knowledge exchange between farmers (to help reduce competition between farmers through increased collaboration). Whilst the specific social media access metrics indicate large audiences have been exposed to the awareness campaigns, there is limited evidence to demonstrate changes in consumer behaviour (consumption demand for NUS grains or products).	11.1 Prioritise the need to provide on-going support for driving policy reform that helps provide an enabling environment for "ready access" to NUS seeds through increasing production (and mechanisms to access such seed supply including trading platforms recognised legally). Introduce in phase 2 of project.	S
	11.2 Provide business support activities to local actors linked to the PMCA process; through increasing the level of economic and business modelling (cost and production models) for NUS product development).	A
	11.3 Introduce an increased focus on consumer market research relating to NUS products. Specifically identify consumer consumption intent through a case study approach and link this process with NUS product entrepreneurs (market potential). Undertaking a series of focus group studies to demonstrate specific operational models for success, whilst linking entrepreneurs direct with consumers. This will help to enhance their market research capabilities and consumer preferences (and future product demand).	N T I
	11.4 Expand initiatives that support NUS product development, utilising the PMCA approaches (from FiBL) and business appraisal/ modelling for out scaling and future project impacts). Facilitate this through initiating future training initiatives for the current project and phase 2.	A
	11.5 Ensure that the primary focus for on-ground activities is on NUS crop development, NUS product processing, participatory plant breeding etc. Avoid project activity diversions that "water down" the focus of the project (e.g. honey production, tool hire facilities) unless this is a demonstrated pathway to farming communities entering into the project.	C I
12. Build and empower national project management and leadership There is the need to provide a higher level of national project leadership	12.1 Expand the role of appointed national project coordinators (managers) who have the responsibility of providing dedicated and effective leadership to the project, accountability for the delivery and outputs of the project from all delivery partners, partner contracting, budget oversight and accountability. Note: this role is separate to the role of SWISSAID Country Managers.	

that is more actively committed and engaged in championing project objectives, driving policy reforms, and maintaining accountability for the project's performance and impact. An expanded and more prominent role of the current national coordinators is required.	12.2 Through the expanded role of the national project coordinators, establish working groups (with a representative from each country) to address the key recommendations. Outputs are implementation plans responding to specific thematic areas; (1) policy integration and impact (2) R,D and E and government partnership collaboration (3) monitoring and evaluation and impact assessment (incorporating case studies) (4) skills assessment, training and capacity building (5) NUS participatory plant breeding, seed production integrity (6) Climate change risk management and practice change opportunities (7) communications and extension outreach and out scaling as examples of areas of focus. Each working group would identify how recommendations can be integrated into existing work plans, how they can be implemented (based on need and prioritisation together with timelines and approaches).	A
13. Improve financial accountability for allocation of project resources; to ensure greater accountability (and monitoring) of financial resources allocated to specific delivery activities. Introducing separate budgets for consortium partners will enhance accountability, efficiency, and enhance collaboration. All contracting should include milestone based payments to help tighten contracting processes.	13.1 Activity specific budgets for consortium partners be introduced to support greater financial accountability and flexibility in decision making to help achieve successful delivery with project specific activities.	A
	13.2 All contracts with consortium and delivery partners needs strengthening in terms of the level of financial accountability and milestone delivery outputs. These need to be clearly described and monitored,; payments based on successful delivery/reporting.	A
	13.3 Rationalise the number of specific project budget lines within country budgets to avoid potential duplication regarding the allocation of resources. Tighten up specific delivery output descriptions to allocated budget lines to ensure greater transparency.	I and A
14. Improve communication and engagement amongst project teams and stakeholders Opportunities for improving communication internally with project consortium and delivery partners and externally to stakeholders (including targeted beneficiaries) needs to be addressed. Develop country-specific communication strategies for farmers.	14.1 Develop a stakeholder communication and engagement strategy for each country, that ensures that all stakeholders and delivery partners are actively engaged and kept informed. Ensure that the strategy is implemented through specific activities	A
	14.2 Increase communication and engagement with government officials and policy makers in each country, led by SWISSAID country coordinators serving as strong advocates for the project	A
	14.3 Conduct an annual “Shared Solutions Workshops” as part of national project team meetings to provide on-going input, feedback and communication.	A
	14.4 Identify opportunities for building the communication between all consortium partners. Conduct an annual “face to face meeting” of partners to help build a stronger team approach, build trust and communication and resolve specific project challenges and impediments.	A

15. Improve the integration of push-pull-policy project attributes It is evident that there is a strong association between pull and push parameters. Policy integration in some instances is limited particularly at the on-ground project implementation interface, as demonstrated through the Shared Solutions Workshops. Greater integration of push-pull-policy is required.	15.1 Conduct a policy needs analysis "stocktake" in each of the four countries to identify where the weakest linkages are in having a policy enabling environment for successful NUS value chain developments. Ensure that there is a focus on food polices and policies to priorities NUS crops. Involve policy team members.	A
	15.2 From the stocktake (above), proceed to designing and developing appropriate intervention strategies and actions together with policy team members (who ideally are actively working in-country). Planned interventions to be supported by SWISSAID country managers (who need to take on a greater role in relation to supporting policy intervention strategies) together with appointed national project coordinators.	A
	15.3 Strengthen policy activities through higher levels of collaboration to ensure full integration of push and pull strategies particularly India). Building these efforts, together with improved evaluation and reporting efforts will foster effective policy changes, and achievement of project goals.	I
	15.6 Transition from raising awareness to actively achieving policy reforms at government levels. This requires the proactive engagement of policy teams and SWISSAID country managers to ensure strategic and effective advocacy (as stated).	A

TABLE 2 : Recommendations for the CROPS4HD project.

Appendix I: Project participant questionnaire results

1. Summary

Project constraints highlighted included limited resources, communication, limited time, unreliable rainfall, farm scale and policy linkages.

Resolving constraints could be achieved through rationalising the number of activities, provision of additional training, increased travel support, greater market integration, increased collaboration and improved communication between project delivery partners.

Skills gained by participants included participatory research skills, understanding of NUS production and marketing systems, PMCA, market chain development, communication and project management skills.

Training needs identified related to monitoring and evaluation, project management, data analysis (relating to field trials), communication skills, agroecological (AE) farming principles (and systems), GIS and entrepreneurship.

Suggested changes to the implementation of the CROPS4HD project included the need to increase the farmer focus; increased provision of financial resources for project delivery activities (transportation to sites and scientific resources); inclusion of livestock into the AE approaches, a re-enforced focus on NUS crops; a more balanced approach to staff inputs (to reduce pressure) and increased delivery of farmer field schools.

Strengths of the CROPS4HD project identified included the use of a systems approach, the integration of the push-pull-policy approach, a focus on producers and gender and the AE context of delivery.

Weaknesses of the CROPS4HD project identified included current market opportunities for NUS and AE crops are very much at the early stages of development (though respondents frequently referred to them as being “dysfunctional); the ability to respond to climate change; the complexity of the project; inequity in allocation and prioritisation of budget allocations, a dominating focus on NUS crops; delivery partners lacking important skills and limitations in project leadership.

Participants when asked “what they enjoyed most about the project?” highlighted the push-pull-policy approaches, collaboration, the opportunity to work with NUS crops, developing AE farming systems, participatory selection of farmer varieties, collaborative teamwork and the opportunity to assist in the development of farmer seed systems.

Participants held positive attitudes towards the various elements of the project, in terms of the overall success and impacts of the project, increased collaboration and sound communication and having a clear understanding of the project objectives and outcomes.

2. Project constraints

Survey respondents were asked to identify the project-related constraints. Responses were categorised into “like-categories”, with results visually presented below. The larger the font, the higher the number of “same-like” responses. From the figure, it is evident that the most dominating responses related to **limited resources** available for implementing the project (including resources being spread “too thinly” across multiple activities); **communication constraints** relating to language, communication within the teams, across teams and delivery partners; **limited time** available to complete activities (and also associated with staff having multiple project responsibilities, and limited support); **rainfall unreliable** that often led to impacts in obtaining meaningful trial results, the **farm scale** attributes (in terms of working with very small farmers who

were unable to increase scale of production and often limited (meaningful) **policy-linkages** evident about the delivery of activities at the field level.

Specific noteworthy responses illustrating some of the project constraints include the following;

"The workload of the local team sometimes challenges us. Activities are implemented and done well but competing responsibilities make it difficult to give all into them".

"Language constraints makes it difficult to strengthen exchanges between countries".

"We don't have any clear strategies to combat climate changes issues. We need more knowledgeful people in the context of data collection who can collect proper data which is easy to entry".

"The project area is climatically vulnerable and for that it hampers the production system often and further the land holding is also scarce and for that the volume of production is less".

"The capacities of institutions (are) yet to be developed in the context of multiple goal of the project".

"The major constraints preventing the project from being carried out are the poor distribution of rain during the growing season, the impassability of roads in the wet season and difficulty of travelling"

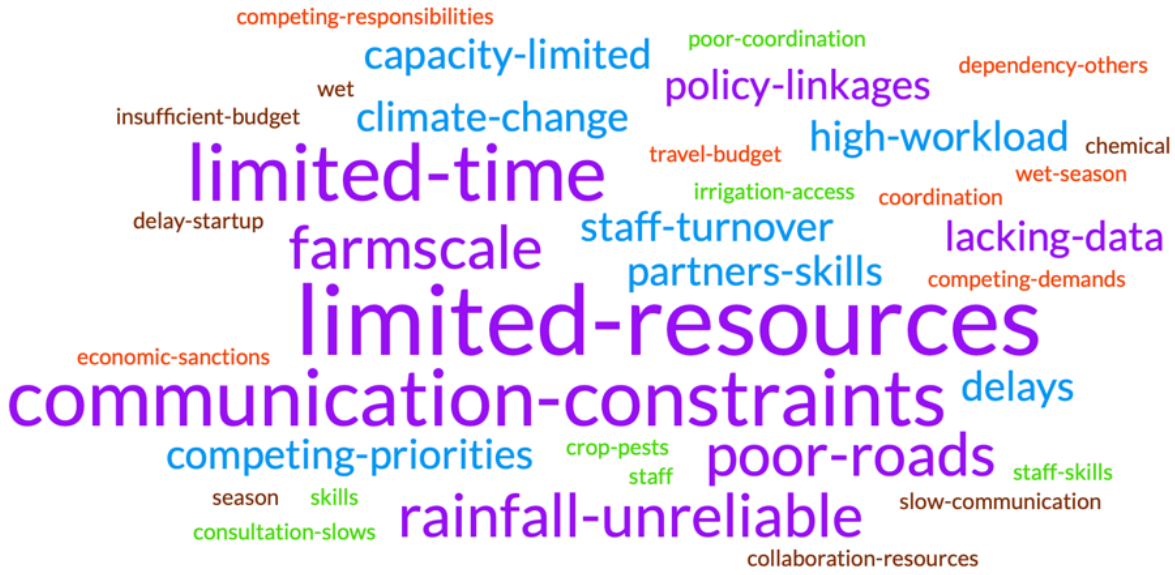


FIGURE 1: Summary of statements provided by survey respondents in terms of perceived project constraints (based on a word count analysis).

3. Resolving constraints

Survey respondents were asked to identify opportunities for resolving project constraints. Responses were then categorised into "like-categories", with results visually presented below. The larger the font, the higher the number of "same-like" responses. From the figure, it is evident that the most dominating responses relating how best to resolve constraints included the need to **rationalise activities** (in terms of fewer, focused activities); the provision of **additional training** (to address specific skill and capability limitations); **increased travel support** to reach field activities (including increased budget resources, access to suitable vehicles); the need to provide additional

support mechanisms (project resources; enabling policy considerations) to assist in enhancing and facilitating enhanced **NUS market integration;** in addition to **increased collaboration** and **improved communication** between project delivery partners, country teams and project leaders. Specific noteworthy responses illustrating some of the opportunities to address constraints as described by respondents include the following;

"It is difficult to combat climate related problems as it has no specific pattern. We have to find out few climate-resilient indigenous seed and crops which need less amount of rain. we have to advocacy for good crop insurance policy and life-saving irrigation project in the rainfed area. 2. skill development training for the staff is needed. That should be through physical training or workshop".

"In order to keep farmers interested in AE production more resources and attention needs to go to them, for production, for extension, for experimental learning".

"In the next phase, strengthen the budget of the implementing partners. Strengthen communication on the project within AFSA, as well as external communication".

"Nutrition and income both are important for farmers. The project needs to focus on improving adaptive capacity of small and marginal farmers by focusing on main crops as well and supporting farmers for livestock, fishery and other allied agricultural activities for better integration. It is suggested to focus not only on seeds but also on AE practices and integrated approach to make cropping system resilient".

FIGURE 2. Summary of statements provided by survey respondents in terms of resolving project related constraints (based on a word count analysis).

4. Skills gained by participants

Survey respondents were asked to identify the specific skills that they had gained through their project involvement. Responses were then categorised into "like-categories", with results visually presented below. The larger the font, the higher the number of "same-like" responses. From the figure, it is evident that the most common skills attained included **participatory research** skills (actively engaging with farmers and other stakeholders); understanding of **NUS seed (production) systems, communication** skills, **project management** skills**,** the development of **NUS markets**,

market chain development principles and **PMCA**. Specific noteworthy responses illustrating the nature of skills obtained include the following;

"Knowledge of the PMCA approach and its outlines, the transformation processes for the various NUS products and their nutritional and therapeutic values. Management of multi-stakeholder partnerships and multi-country programs".

"Application of methodological tools to assess performance of agroecology; Pull component / perspective of CROPS4HD rather new for SWISSAID".

"Enhanced intercultural communication (have not worked in Niger or Tchad before) Better understanding of the challenges on the local level Deepened understanding of the advantages and challenges of participatory approaches and facilitation Better online and on-site trainings Large scale data collection with KOBO".

"Good knowledge on seed policies on national level in the countries involved, and on international frameworks such as ITPGRFA and capacities to read and understand seed laws. Improved advocacy stills and capacity to understand and engage in international negotiations".

FIGURE 3: Summary of statements provided by survey respondents in terms of specific skills that they had attained through their engagement in the project (based on a word count analysis).

5. Identified training needs

Survey respondents were asked to identify their own personal training needs. Responses were then categorised into "like-categories", with results visually presented below. The larger the font, the higher the number of "same-like" responses. From the figure, it is evident that the most dominating training needs identified were **monitoring and evaluation**, **project management**, **data analysis** (relating to field trials), **communication** skills, principles of **AE** farming systems, **GIS mapping** skills, rural **entrepreneurship** (product processing and value adding, small enterprise business management). Several responses illustrating the nature of the training requirements identified include the following;

"Cross learning exposure visit to other countries and entrepreneurship and value chain development skills".

"Skills on innovative business development plans for agro-ecological products and produces".

"Tools to make agro-ecological practices more successful, especially controlling certain crop diseases; techniques for assessing the project's impact; more in-depth knowledge of NUS and its values".

"Need adult training come exposure which help me to articulate different innovative business models for food system transformation".

"Project management and leadership development at advanced level".

FIGURE 4: Summary of statements provided by survey respondents in terms of their identified training needs (that would support them in their project delivery responsibilities) (based on a word count analysis).

6. Suggested changes to the CROPS4HD project

Survey respondents were asked to identify specific changes that should be made to the implementation of the CROPS4HD project. Responses were then categorised into "like-categories", with results visually presented below. The larger the font, the higher the number of "same-like" responses. From the figure, it is evident that the most dominating responses included the need to increase **farmer focus** (in terms of how the project was delivered through participatory means); increased provision of **financial resources**, **scientific (research) resources**; inclusion of **livestock** into the AE approaches; re-enforce the focus on **NUS crops**; rationalisation towards **focused activities**; the need to reduce **staff pressures** (additional support) and increased activity relating to farmer field schools **FFS**. Specific noteworthy responses illustrating the nature of recommended changes as provided by respondents include the following;

"The budget allocated to scientific activities should be separated from non-scientific ones. This will lead to an increase in efficiency and results. This, will as well balanced the proportion between scientific and non-scientific activities".

"Coordination of political advocacy activities at country level. The implementing partner could be the main coordinator/carrier".

"Strengthen the awareness-raising session to reach the remnants of the villages, strengthen agricultural equipment and the processing of agricultural products".

"Capacity building trainings on seed production and quality maintenance and storage to the SHG members and FPOs".

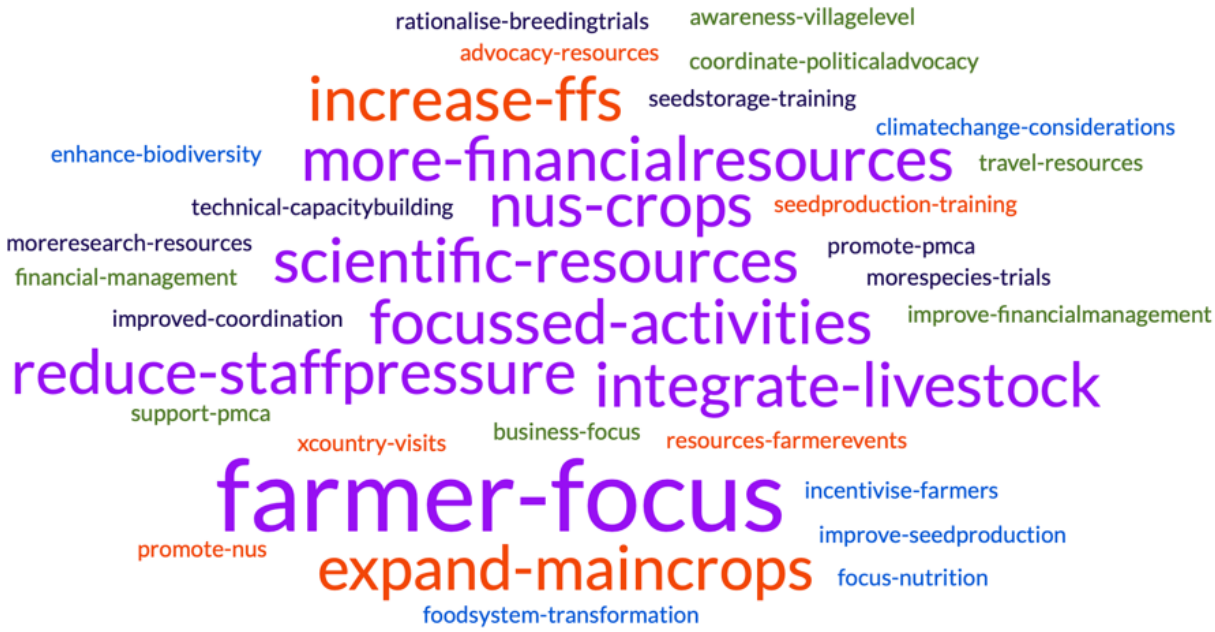


FIGURE 5: Summary of responses relating to suggested project changes provided by respondents (based on a word count analysis).

7. Strengths identified

Survey respondents were asked to identify project strengths. Responses were then categorised into "like-categories", with results visually presented below. The larger the font, the higher the number of "same-like" responses. From the figure, it is evident that the most dominating strengths included; the strong elements of organisational collaboration; the **systems approach** adopted in the project research methodology and delivery; the focus on the integration (and complementarity) of the **push-pull-policy PPP** approach; the **producer focus**, **gender focus** and **AE context** of delivery. Specific noteworthy responses illustrating project strengths as provided by respondents include the following;

"Proven expertise in the agro-ecological approach and the links between Pull, Push and Policy".

"The strategies adopted are proving effective in terms of demand creation, cultivation of NUS and AE produce".

"This project think all-round activities from production to market. It has also built the capacity of farmers, institutions related to processing, packaging and branding. It also campaign about the nutritional and health benefits of the products. It's also doing advocacy for mainstreaming indigenous seeds and creating market space for orphan crops".

"Participatory approach towards NUS value chain and market development. New insights and skills in regard to 'value chain development facilitation' and market / product development".

"Systematic approach to implement the project by developing operational guidelines collating the knowledge with project partners and other CSOs. In India we have developed operational guidelines for farmer managed seed system, extension methodology, developing separate space for AE produce in rural markets, institutional architecture".

FIGURE 6: Summary of statements provided by survey respondents relating to the identification of project strengths (based on a word count analysis).

8. Weaknesses identified

Survey respondents were asked to identify project weaknesses. Responses were then categorised into "like-categories", with results visually presented below. The larger the font, the higher the number of "same-like" responses. From the figure, it is evident that the most dominating responses were **dysfunctional markets** creating challenges when marketing NUS products; limited options or ability to factor in responding to **climate change** impacts; **project complexity** in terms of all of the elements that were being factored into project design and delivery; **budget allocations** in terms of adequate resources being allocated to specific project delivery activities (including achieving an equitable balance); having a dominating **NUS focus** was seen by some to be detrimental to also focusing on the more mainstream crop types grown by farmers; delivery **partners lacking skills** in some instances; deficiencies in **project leadership** both from an overarching coordination role as well as lack of leadership from a national (country) perspective. Specific noteworthy responses illustrating some of the weaknesses associated with the project as raised by respondents included the following;

"Translating the vision in the project document into practice on the ground takes more time than envisaged (at the time of project design)".

"Involvement of many partners and the engagement on many levels make it difficult to maintain communication and flow of information between all relevant actors".

"Complexity of institutional situation in the implementing countries (i.e. different implementing partners and staff with varying engagements and commitments). Overall institutional objectives or personal convictions of key management staff at the country level may not always be completely in line with the project's objectives".

FIGURE 7: Summary of statements relating to the perceived project weaknesses (based on a word count analysis).

9. What participants enjoyed most about their project engagement

Survey respondents were asked to identify "what they enjoyed most about being involved in the project". Responses were then categorised into "like-categories", with results visually presented below. The larger the font, the higher the number of "same-like" responses. From the figure, it is evident that the most dominating responses related to **push-pull-policy** (ppp) approaches; **collaboration**; working with **NUS crops**; the development of **agro-ecological farming systems**; **participatory selection** of farmer varieties; **teamwork-collaboration** and the development of **farmer seed systems**. Numerous responses illustrate the high level of personal benefit and enjoyment participants have experienced as a result of their engagement in the project include the following;

"The CROPS4HD project gets closer to the base and puts everyone in front of their responsibilities without relying on others, it has allowed the producers themselves to understand the importance of their knowledge and their know-how in order to promote them".

"I love this project because of its comprehensiveness and inclusiveness. This project challenged ones' capacity and potential abilities as well as both farmers and consumers simultaneously. An inclusive project which try addresses the need in this hour of opportunity. It complements our thoughts of healthy consumers and prepares farmers. It is trying to address gender questions of farming families. Its' holistic idea attracted me to receive this challenging work".

"To watch engaged women and men do what they love as they seek improve the agricultural landscape in their countries and thrive on seeing recipients become agents".

"Inclusion of Neglected and Underutilized Species (NUS) crops into farmer's existing production system and finally link the same with greater market opportunities through direct and indirect means".

"I have enjoyed working on leading the role of policy where we have gathered evidence on farmer managed seed system and share them with policy and decision makers".

"One of the most enjoyable aspects of my involvement in the CROPS4HD project has been the dynamic interplay between demand, production, and policy interactions. This multifaceted approach not only keeps me engaged but also offers a unique opportunity to contribute meaningfully to addressing food security and nutrition challenges. Engaging with the demand side of the project has been particularly rewarding. It's fulfilling to witness the impact of raising awareness and influencing behaviours toward neglected and underutilized species (NUS)".

"Overall, my experience with the CROPS4HD project has been incredibly fulfilling as it allows me to balance current development needs with a forward-thinking perspective on future challenges. By bridging the gap between scientific knowledge and practical solutions, I'm honoured to be part of a project that's making a positive impact in the lives of smallholder farmers and communities".

FIGURE 8: Summary of statements provided by survey respondents in terms of "what participants enjoyed most about their engagement in the project" (based on a word count analysis).

10. Attitudinal responses to a range of statements

Respondents to the survey questionnaire were asked to respond to a range of statements relating to the project, in terms of indicating their level of agreement. Response categories (using a Likert scale) were strongly agree, agree, neither agree or disagree, disagree or strongly agree. A summary of the results is presented in Figure 13.

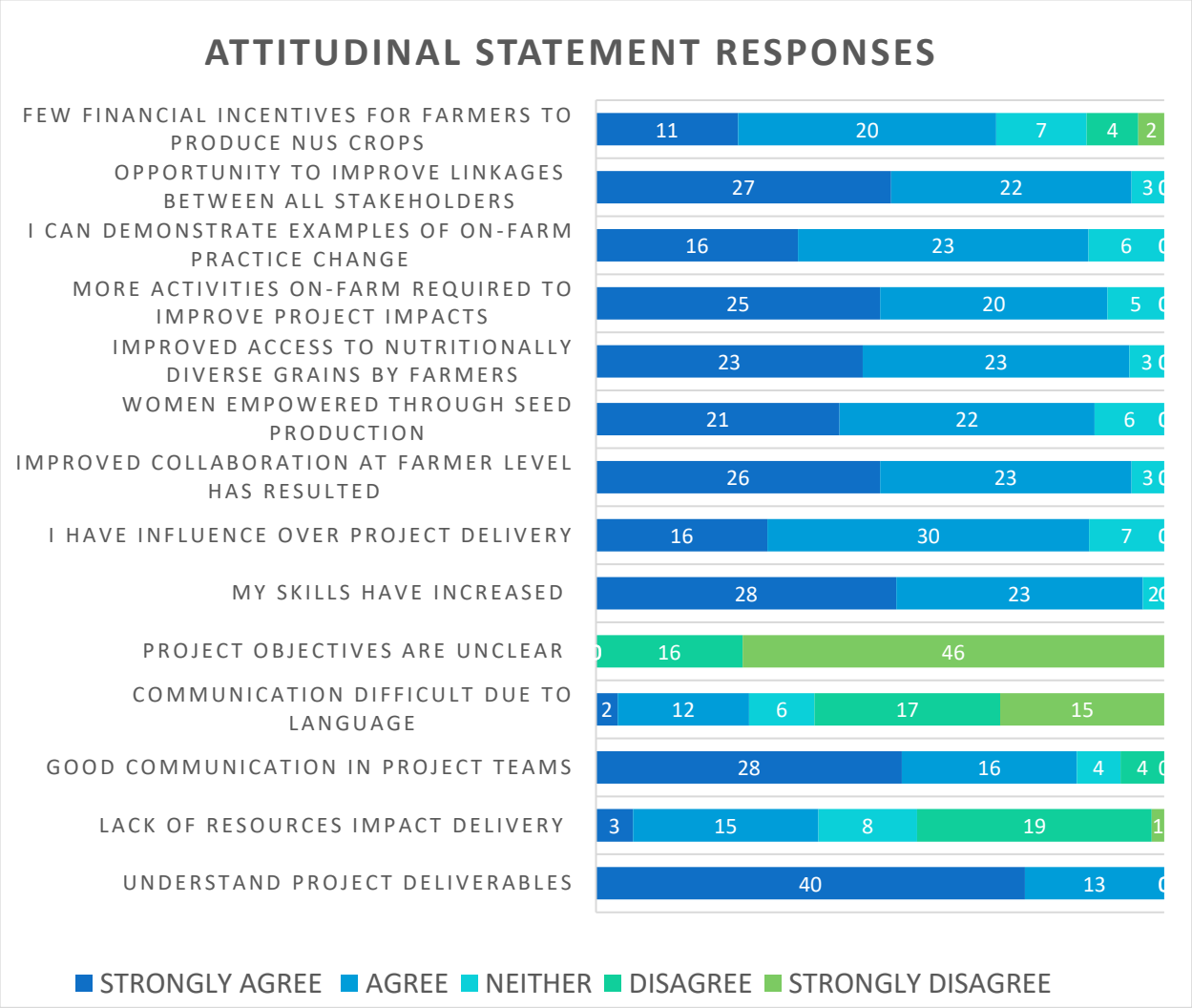


FIGURE 9: Summary of the responses from participants about a range of attitudinal statements associated with the project.

Specific statements where the majority of respondents were in **agreement** were as follows;

- There are few financial incentives for farmers and farmer groups to be involved in on-farm seed production of NUS crops in my country.
- There is an opportunity to improve the linkages between all stakeholders associated with the seed production value chain in this project.
- I can clearly demonstrate examples of on-farm practice changes that have occurred as a result of the project interventions so far.
- More activities need to take place at the farm level to ensure the project achieves greater impact.

- The project has improved farmer access to a wider range of nutritionally diverse food grains.
- This project has empowered women through addressing gender issues with seed production.
- This project has improved collaboration between organisations working at the farmer level
- I feel that I have been able to influence how the project is delivered in our own organisation.
- My personal skills and capabilities have increased through my participation in the project.
- There is always good communication within our own project team.
- I have a clear understanding of the required project deliverables and expected outputs.

Statements where the majority of respondents were in **disagreement** to them were as follows;

- It is unclear to me as to what the overall project objectives are for the CROPS4HD project.
- At times there is difficulty in communicating between project partners due to language.
- A lack of project resources restricts my ability to deliver the required project outcomes.

Overall, the majority of respondents hold positive attitudes towards the range of attributes associated with the project. Potential barriers such as unclear understanding of project objectives, being able to effectively communicate due to language differences, and a lack of project resources constraining the ability to deliver project activities were not supported.

FIGURE 10: Farmers were actively engaged in the NUS field activities, and were willing to share their experiences and enthusiasm with project team members attending some of the project's field sites as part of the Shared Solutions Workshop in West Bengal.

Appendix II: Summary delivery partner questionnaire

1.1 Summary

Organisational respondents held positive attitudes relating to the ability to demonstrate positive contributions to practice change, and contribution to project achievements; empowerment of women through project engagement; achieving sound communication between partners, supporting farmers in accessing nutritionally diverse foods through the project; improvements in staff skills and having a clear understanding or project deliverables.

All organisational representatives clearly articulated the range of benefits that project stakeholders (representing the different categories of actors along the value chains and push-pull-policy continuum) had gained through their project engagement. This demonstrates the understanding of the roles that each actor category play in the project, as well as the opportunity to adopt a market segmentation approach for targeted project interventions. In terms of identifying project delivery constraints, respondents identified a large number of issues that were categorised based on aligning them to environmental, social institutional, economic and political themes;

- Environmental constraints highlighted included low farmer adoption rates of AE farming and NUS crops and the impacts of drought, flood and rainfall distribution.
- Social and institutional constraints highlighted included community apprehension to working in farmer groups (largely brought about by mis-trust); a lack of “pull’ related skills held by implementing partners; malnourishment amongst rural communities engaged in the project; a lack of awareness in relation to NUS crops; a lack of gender sensitisation at the village level and poor security in some project locations.
- Economic constraints highlighted insufficient financial resources for project delivery; small marginal farmers with little land and poorly established markets for AE/NUS crops.
- Political constraints included a public extension system focussed on conventional farming systems and limited support or recognition to AE farming systems approaches.
- Respondents provided suggestions as to how some of these identified constraints could be addressed or resolved, and these will be considered in report recommendations.

A project SWOT (strengths, weaknesses, opportunities and threats) analysis conducted in the survey identified the following key points;

- Strengths: strong reputation project partners; push-pull integration; participatory approaches including NUS field evaluation and value chain development; AE approaches; women empowerment and capacity building initiatives.
- Weaknesses; institutional complexities; communication; monitoring and evaluation implementation; skill limitations; funding allocation to activities and time constraints.
- Opportunities; stakeholder platforms for expanding NUS; stakeholder partnerships; innovative food transformation models; seedbank and AE systems expansion.
- Threats; limited skills project staff; political instability and influence; climate variability (rainfall); lack of long-term vision amongst beneficiaries; lack of recognition of farmer selection of varieties and lack of locally focussed government policy support.

Respondents considered that opportunities could be realised through supporting staff to take on a focused facilitation and engagement role; re-allocation of budget resources to areas of greatest need; strongly supporting NUS initiatives; enhancing support to farmers in developing NUS products, AE farming systems and the development of seed bank business models.

Participants considered that youth engagement could be improved through engaging them in seed fairs and entrepreneurship activities (NUS product development) and in producer groups. Boosting women engagement could be supported through engaging them in local leadership roles, participation in NUS crop value adding and product development opportunities and leading the development and management of community seed banks.

Respondents provided suggestions as to how best all three PUSH-PULL-POLICY elements could be integrated. It was considered that there needed to be a much higher level of integration of policy to the push-pull components, since all three components are complimentary to one another and need to take into consideration the dynamics of the value chains.

Recommendations were provided in relation to how the project could be further improved. These included increased support for field experimentation; improvements to the identification of NUS crop potential; increased capacity building of staff; the opportunity to apply a more integrated approach towards workshop training and greater consideration towards factoring in climate change and disaster risk reduction impacts.

1.2 Attitudinal responses

Respondents completed an attitudinal (Likert) response question indicating their level of agreement to a range of project related statements. A summary of the results are presented in Figure 1.

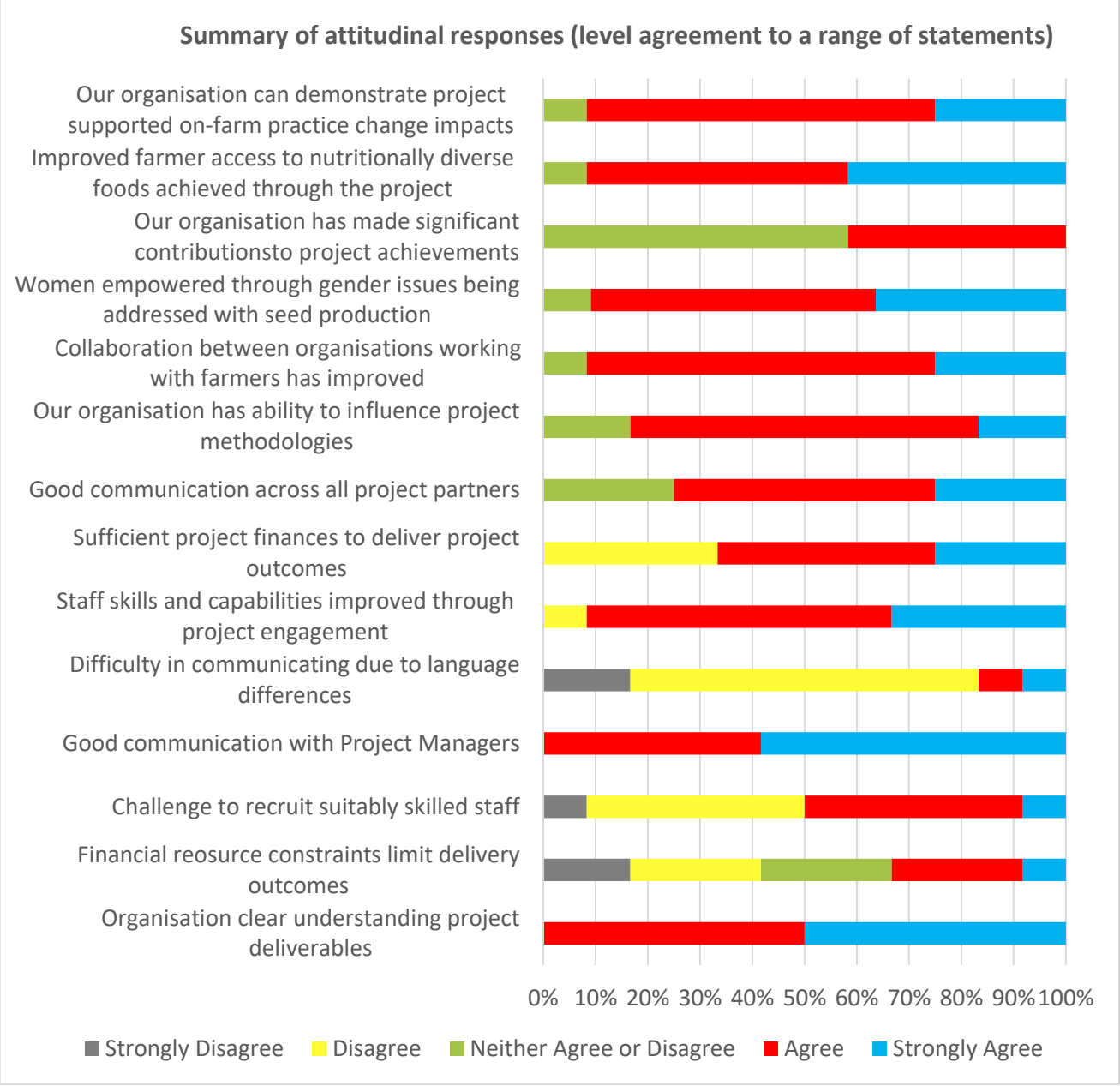


FIGURE 1: Summary of the responses from participants representing partnering organisation in relation to a range of attitudinal statements associated with the project.

Specific statements where the majority of respondents were in **agreement** to them were as follows;

- Our organisation has a clear understanding of required project deliverables/expected outputs.
- The project has improved farmer access to a wider range of nutritionally diverse food grains
- Our organisation has exceeded expectations with the level of project achievements to date.
- This project has helped empower women through successfully addressing gender related issues associated with seed production.
- This project has helped improve collaboration between organisations at the farmer level.
- Our organisation is able to guide and influence project methodologies/outputs at a high level.
- Good communication exists between our organisation and Project Managers we report to.
- The skills/capabilities of our project staff have increased through their project participation.
- The level of project financial resources are sufficient to ensure project outcomes are delivered.
- Communication between our organisation and other participating organisations is very good.
- Our organisation can demonstrate on-farm practice change as a result of project interventions.

Statements where the majority of respondents were in **disagreement** to them were as follows;

- At times it is difficult to communicate between project partners due to language constraints.
- A lack of financial resources has been a major constraint in the ability of our organisation to deliver the required project outcomes.

There was an **even balance** of agreement and disagreement to the following statement;

- It has been a challenge to recruit and mobilise skilled project staff to work on the project.

Overall, the majority of respondents held positive attitudes towards the project attributes. Potential barriers such as ability to understand of project objectives, language differences and a lack of project resources constraining the ability to deliver project activities were identified.

1.3 Benefits realised by project stakeholders

Respondents were asked to indicate the main benefits that each stakeholder category associated with the CROPS4HD project would gain as a result of their engagement in the project. A summary of responses are provided in the following table.

Stakeholder category	Stakeholder benefits
Seed producers	Direct benefits from the project expected to gain as a result of project activities. Technical support, training opportunities, creating market opportunities and access. Develop seed conservation techniques, factoring in improved nutrition of NUS crops. Increased income through purchases of NUS seeds. Producers gain knowledge on management and quality aspects of the seed banks. Access to and supply good quality seeds to Community Seed Bank. Income earning through seed production and varieties named after them.
Seed suppliers (who supply seed and/or purchase seeds from farmers)	Market access, acquiring new contacts through networking. Distribution of quality seed originating from baby trials grown by seed producers. Nutritional values of NUS will guide seed growers in selecting crops to produce. Improved skills in AE seed production, multiplication and conservation techniques, varieties propagated, scientific advantages and nutritional and therapeutic values. Suppliers will have wider choice of varieties/crops based on consumer preference. Farmers using farm-saved seed buy from producers (economic advantage). Agro-input dealers; knowledge of CROPS4HD project, scope to sell traditional seeds, non-chemical formulations etc., links to farmers.

Farmer groups and cooperatives	Access to seed, skills, knowledge and capacities for adopting AE practices and cultivating underutilized crops (NUS), linking farmers to markets. Acquired knowledge and skills of community based organisation management, leadership, negotiation, record keeping and access of microfinance services. Increase in source of income and identification of the market (outlets) and contact between producers and suppliers. Generating business for the community-based seed banks and also creating demand for indigenous seeds in the project area and also in the region Opportunities to promote sell of NUS and non-NUS crops (market access), improved skills of FPC members on business development. NUS nutritional values help guide seed growers to select specific crops to grow. Existence of a framework for exchanges through CACOPA and their networking. Farmers group and cooperative will be registered and develop value chain business models on native crops and varieties. Diversification and extension of seeds (economic and social benefits).
Farmers (individual)	Access to seed, skills, knowledge and capacities for adopting AE practices, cultivating NUS crops, linking farmers to markets and market-oriented production. Increase in their income through the marketing of quality products. Acquire knowledge and skills of community based organisation management, leadership skills, negotiation skills and microfinance, AE farming techniques. Adoption of AE practices, less dependency on external inputs, minimising cost of cultivation, aggregation of produce for selling through direct and indirect markets. Links between farmers and value chain stakeholders enhanced. Improved living conditions, skills in making and using 7-day compost, crop management, diversification of sources of income (trade, livestock farming). Farmers have easy access and availability of quality seeds of their own choice Knowledge of propagated varieties: cycle, plant behaviour (scientific benefits) Knowledge of nutritional and therapeutic values (social benefits).
Village communities	Conducive environment for market and production opportunities for NUS crops. Improved communications, increased income through marketing of quality products. Awareness of project implemented to their areas to learn, adopt and multiply the technology presented during community mobilisation and sensitisation. Mastery of the nutritional and therapeutic values of NUS cultures. Sensitisation on nutrition and health benefits of NUS crops, using indigenous seeds, availability of AE produce, scope for marketing in local markets. New AE knowledge and farming techniques are being promoted by farmers. Consultation framework for the promotion of agro-ecological practices (CACOPA). Improved living conditions, skills in making and using 7-day compost, crop management, diversification of sources of income (trade, livestock farming). Community seed banks provide opportunities for improved nutrition and livelihoods.
NGO's (working with farmers and rural communities)	Information on dietary situation (baseline) and guidance for cultivating NUS crops for diversified diets in the target regions. Local resources assists project implementation in the targeted community. Discovery of the nutritional and therapeutic values of NUS crops. Exchange and sharing of knowledge, scope for working in collaboration, networking. Improved living conditions, access to seed banks to promote farmers' seeds. NGOs will have better technical back stopping from research and development organisations and also access to quality seeds.
Research, Development and	Identifying success factors for diversifying production and diets through NUS crops. Extension officers play a role in community mobilization, increase collaboration locally, group formation, record keeping and micro-finance; community self-reliance builds.

Extension Development Officers	Raising awareness of NUS crops and setting up projects linked to resilience and support for nutritional value seeds (which are in danger of disappearing). Knowledge on CROPS4HD project, scope for further research and development on NUS crops, promoting cultivars of NUS crops etc. Scientists engaged in PVS (participatory varietal selection), training of seed producers. Collaboration with Universities for alternative seed system for farmer's varieties/landraces. Dept of Ag promotes AE and food system transformation. R&D organisations will have better outreach and opportunities to showcase their technologies through better grassroot level access of NGOs.
Government policymakers	AE cultivation of NUS crops enhances agro-biodiversity and food security, leading to healthier and more diverse diets to create polices for food systems transformation. Generated data from project research will boost knowledge, scope for promoting NUS and non-NUS crop products supported by government departments. Increase awareness and govt support for alternative seed systems for farmers. Involvement of all stakeholders in the research: producer, technicians, researchers. Promote farmers' seeds and agro-ecological practices at various levels.

TABLE 1: Summary of the benefits realised by the various project stakeholders (as identified by survey respondents)

1.4 Project delivery constraints

Survey respondents were asked to identify what they considered to be the major constraints that they faced in delivering project related activities under the categories of (1) environmental; (2) social and institutional; (3) economic and (4) political. For each constraint, respondents were asked to provide ideas as to how the particular constraints could be resolved. A summary is provided in Table 2.

Environmental	
Constraint	**How best to resolve the constraint**
Low farmer adoption rates for AE farming systems and NUS varieties (lack of awareness, availability of AE farm inputs.	Awareness raising amongst rural communities in relation to agro-ecological farming systems and specific benefits Develop well-targeted awareness campaigns, with involvement of key stakeholders acting as 'lifestyle influencers' (social media influencers, chefs, health related retailers, specialised media) Encourage farmers to produce plant species as ingredients for biopesticides, composting and vermicomposting
Inconsistent supply and/or availability of water (including drought, flood and rainfall distribution) impacting on crop production.	Supporting micro irrigation practices for farmers (linked to government schemes), water harvesting, retention basins. Use early sowing techniques, promote cropping calendars Awareness raising and training of farmers to better manage impacts of climate change Improved selection of land for production Encourage sowing drought resilient crops locally

Social and Institutional	
Constraint	**How best to resolve the constraint**
Community apprehension to working in farmer groups (due to different expectations and past (poor) experiences).	Familiarisation, mindset changes and group dynamics training may help the group members to form bonds and attract others to join groups for the project implementation.
Lack of PULL skills held by implementing partners.	Provision of training and capacity building opportunities. Provided by project experts (from FiBL and other organisations)
Malnourishment amongst communities who are engaged in the project.	Promoting NUS crops in the project area for improved nutrition (and calorie intake). Reaching out communities with specific focus on women and children through awareness campaigns (including dissemination of health and nutrition messages, working in collaboration with ICDS to increase food diversity for families
Lack awareness on NUS crops.	Conducting food festivals, nutrition awareness campaigns, cooking demonstration etc.
Lack of gender sensitisation at village level.	Conducting gender sensitisation trainings at village level and discuss gender issues at local meetings Conducting plays, dramas sports and games with women, men and children from the community (linked to project events).
Poor security in some areas.	Postponing activities until after the crisis has subsided.
Occasional damage of mother trials by wild animals.	Explore opportunity for farmers to use light electric fences. Increase physical barriers around trial sites.
Economic **Constraint**	**How best to resolve the constraint**
Insufficient financial resources (for project delivery and to expand number villages engaged in the project).	Re-allocation of specific budget and funding priorities. Identify co-funding and in-kind support opportunities. Encourage farmer groups to boost human resource capacity. Address specific conflicts within and between groups.
Small and marginal farmer household with limited land holding and dependence on rain-fed agriculture.	Promote institutional development to ensure greater income by farmers and farmer's groups. Extend growing season through use of available land, rainfall and soil moisture, crop selection. Focus efforts on livelihood development to provide diversified income opportunities for households.
Poorly established markets for NUS crops and AE produce (including price fluctuations, Insufficient distribution outlets for AE and NUS products and poor market differentiation).	Strengthening market value chain of NUS crops. Develop new marketing strategies for the sale of products. Create awareness of opportunities for marketing knowledge exchange between farmers and project initiatives (greater cross country exchange of experiences). Reduce competition between farmers through collaboration.

Political Constraint	How best to resolve the constraint
Public extension systems focus on conventional systems dependent on artificial fertilisers and pesticides and conventional seeds.	Increased public extension staff input for activities on the PUSH and PULL side. Opportunity for policy interventions. Produce scientific evidence highlighting benefits of AE. Lobby government to include farmers' seeds in catalogues. Target political interference in promoting chemical products.

TABLE 2: Summary of the delivery constraints as identified by survey respondents and categorised according to environmental, social/institutional, economic and political characteristics.

1.5 Project SWOT analysis

The following table represents a summary of the key points identified in the SWOT analysis.

Strengths	Weaknesses
Reputable organisations with significant experience working in-country (comprising consortia of SWISSAID, FiBL, AFSA, NGO's through strong local multi-partner relationships).	Complexities associated with institutional situations in the implementing countries (i.e. different implementing partners and staff with varying engagements, priorities, and commitments).
The interlinked PUSH and PULL project components and resulting synergy.	Limitations in communication across organisations.
Participatory approach towards varietal selection, NUS value chain development; with strong farmer centred engagement.	Difficulty in the implementation of monitoring and evaluation activities (for example monitoring groups due to limited expertise of project facilitators and trainers).
Support and development of farmer seed banks (participatory driven approaches).	Project partners having limited engagement in the development of budgets.
Multi-dimensional project underpinned by AE production systems.	Challenges associated with trials; multiple activities and time constraints, only few NUS crops, delays in establish agronomic trials.
Committed local project partners (local government and extension officers, local communities and committed partnering organisations).	A lack of plans to support project implementation (for example coordination, communication, reporting systems used by lead farmers, facilitators and extentionists).
Promotion of NUS crops for food and nutrition security (seed fairs, PMCA).	Limited skill sets among different implementing staff mainly on the PULL side.
Project technical integrity (and project staff including highly skilled local animators).	Inadequate funds to support group project implementation (tools and seed resources).

High integrity NUS evaluation trials, increased research capability local partners (supported by research partners).	
Project well-resourced for provision of work equipment, trial resources.	
Market support through the establishment of market linkages and NUS branding .	
Active engagement with women from farmer organisations.	
CACOPA organisations are actively involved in many activities.	
Capacity building: diverse skills nutrition, food hygiene, business/finance skills.	
Opportunities	**Threats**
Capitalise on stakeholder platforms to assist in collaboration through NUS awareness, increase NUS production.	Staff have little understanding of NUS health benefits (where multi-national companies promote “healthy convenience products”).
Stakeholder partnerships for consumer campaigns (influencers, chefs, media).	Limited PULL and field research related capacities among implementing staff.
Develop new NUS products and expansion of market opportunities for both NUS and AE products); complemented by increased consumer awareness.	Political instability leading to loss of market shares due to the embargoes, limited accessibility to some sites due to political or security reasons.
Expand partnerships (NGOs, (Universities, Government).	Environmental threats; salinity, floods affect crop production and research trials.
Targeted approaches: identify and work with crop-based production clusters to enhance aggregation and marketing.	Shifted priorities (from NUS to major crops for food security) due to local food crisis or global conflicts.
Developing Food System Transformation models in rural and mega urban areas.	Risk of crops of neglected species being abandoned.
Access additional land for group demo plots (and expand NUS crops) to assist in delivering practical learning outcomes.	Failure to recognise the value of agro-ecological products. AE products should be sold at a higher price than other products.
Consider accessing water resources for some crops to provide reliable production.	Stakeholders don’t think long-term viability; depreciation equipment, maintenance, etc.
Develop/expand seed bank enterprises.	The persistence of crop enemies, especially locusts, wild animals damaging crops.
CACOPA and umbrella organisations presents opportunity for further expansion.	No political support for AE systems; risk of farmers reverting to conventional practices.

Improve access to organic inputs (source raw materials locally for the manufacture of organic fertiliser and biopesticide).	Climate changes impacting rainfall and the productivity of crops in local communities, in addition to creating production uncertainty.
Integration livelihood options into the implementation framework.	Failure of the team to meet beneficiary's timely manner due to transport constraints.
On the pull side, opportunities such as annual trade fairs.	Farmer and breeder conflicts in desired plant traits, recognition of farmer selected varieties.
Bringing together people with a wealth of experience (exchange trips).	Poor government policy on agricultural production and environmental protection.
Identify opportunities for youth and women to access land for AE farming.	Destruction of off-season crops by pachyderms (protected species).
Encourage diversification in ag production, integration of livestock, develop AE farming techniques and practices.	No government policy framework that recognises farmer managed seed systems and production of quality indigenous seeds.
Introduce national policy to promote local products.	Group participants dropping out (farmer group sizes dropping from 25 to 10 or less).
Develop HR: multi-disciplinary trainers (agronomists, sociologists by training.	Poor management of natural resources (cutting of trees to make charcoal).

TABLE 3: SWOT (Strengths, Weaknesses, Opportunities and Threats) summary as identified by survey respondents.

1.6 Impacts of identified weaknesses relating to project delivery and achievements

Respondents were asked to identify the specific impacts that project weaknesses have had relating to project delivery and achievements. A summary is provided in the following table.

Overall institutional objectives or personal convictions of key management staff at the country level may not always be completely in line with the project's objectives.
Limited response to PULL training, impacting performance capacity development.
Group dynamics to take long to complete; sometimes results in unsettled group members.
Confusion surrounding project implementations since it can affect the groups due to different directives and information from lead farmers and extension officer.
Lead farmers sometimes consider seed produced under AE farming systems are not economically viable (it is difficult to demonstrate this under small plot demonstrations).
Weak monitoring and difficult reporting.
Some farmers have little land (0.33 acre). Opportunity to integrate NUS crops on-farm is limited so adequate surplus generation remains a challenge apart from subsistence.
Desired output from the project deliverables is sometimes hampered because activities under each component (PUSH, PULL and Policy) are often happening at the same time.

Insufficient time devoted to CROPS4HD project activities, causing delays in completion of activities and a work overload that hampers the efficiency of staff working on the project.

Lengthy discussions on deliverables, slowing the next stages (continuity) of activities.

Limited achievement of food results : impacting beneficiaries (women and young people) in a disadvantaged manner delaying improvements in living conditions.

Farmers are limited in their work schedule, as this includes rotating use between members due to the lack of equipment.

TABLE 4: Summary of the identified impacts associated with project weaknesses, as identified by survey respondents.

1.7 How best opportunities can be achieved

Respondents were asked for their opinions relating to how best the identified opportunities could be achieved. A summary is provided in the following table.

Making sure that PULL related staff keep a strong facilitation role and engage in networking activities in the context of designing and implementing sound consumer awareness campaigns (i.e. participatory approach towards planning and implementing this work).

Making sure that sufficient budget is available for strengthening promising existing and creating new business ideas, i.e. with a small grant scheme.

Well-implemented strategic and technical (FiBL) backstopping, on both PULL and PUSH side.

Support farmers' collection of NUS seed, exchange with national and international organisations ((Alliance Bioversity International – CIAT (referred to as Bioversity International), World Vegetable Centre).

Active engagement of all stakeholders in NUS product development; demonstrate the successful cultivation and marketing of NUS; develop activities for the promotion and networking of producers and consumers; take advantage of trade fairs and events to promote NUS products.

Increase direct linkages and collaboration opportunities with Govt departments, research institutions and others; so that participating households in the program get benefits for better livelihood development. This could be part of program design in the next phase.

Facilitate the "learning by doing" into training curriculum, so that it can then be easily delivered as training opportunities to farmer groups based on participatory engagement.

Improve the provision of support services to farmers through facilitating (1) the collection, testing and dissemination of farmers' seeds; (2) collective production of organic fertilisers and pesticides at village and district level; (3) encourage intensive farming and livestock breeding; and (4) encourage the rational use of existing watercourses for vegetable production.

Need based infrastructure support creation, exploring scope for digital marketing, support to potential market players etc. could be some of the important opportunities around food system transformation.

Support improved seed bank business development through ; (1) promotional activities, (2) strengthening quality assurance mechanisms, (3) exposure to successful seed banks, (4) engagement with agro-input dealers; (5) strengthen community organisational support for effective and efficient management of existing assets; (6) build farmers' capacity in terms of material and technical resources.

Identification, mapping and upscaling production of NUS crops in specific cluster will help in better aggregation and marketing of the produce.

TABLE 5: Summary of responses in relation to how best the identified opportunities can be achieved.

1.8 How best threats can be reduced or eliminated

Respondents were asked for their opinions relating to how best they considered the range of identified threats could be reduced or eliminated. A summary is provided in the following table.

Great attention and good participatory development of sound ‘campaign concepts for consumer awareness creation’. Ensuring that the desired NUS positioning is well-defined and the campaign activities are well targeted and designed – and then well implemented.

High-quality strategic / conceptual / technical backstopping of highly motivated implementing country staff eager to learn on the job.

Adopt different AE techniques, use indigenous seeds, form and strengthening of community seed banks, boost income opportunities through aggregation and marketing by Farmers groups (FPC).

Sharing of learning, experiences from the policy workshops with research institutions, Govt. line departments etc. for influencing policy decisions around inclusion of potential NUS cultivars of crops and farmer managed seed system. At present WASSAN, the policy partner involved in the project is coordinating and helping us for the same.

Train the farmer on the use of resilience croups also to consider the agroecology practice to improve soil fertility, water holding capacity and manage and control diseases and parasites.

Influencing government policies for supporting AE production. Increased exposure visits and hands on training to fellow farmers from expert professionals.

Raising awareness of the harmful effects of chemicals on human life and the environment.

TABLE 6: Summary of responses relating to how best the identified threats associated with the project can be either reduced or eliminated.

1.9 Increasing participation by women in CROPS4HD project activities

Project partners have a strong commitment towards engaging with women at all stages and levels of project delivery activities. Specifically, organisations adopt a number of approaches aimed at increasing active and meaningful engagement by women through;

- Targeting women's groups (as well as youth groups) for engagement in the project.
- Aiming to achieve gender balance in activities delivered at the farm and community level.
- Encouraging participation by women in activities as well as leadership responsibilities (group leaders, marketing committee members) and other management roles.
- Community seed banks have largely been established (and managed) by women particularly targeting climatically vulnerable farming systems.
- Encouraging women to take on entrepreneurial and management "small business roles" in managing community tool banks and processing and value-adding NUS product enterprises.
- Project delivery partners are committed to achieving a gender balance in project teams.

Examples of these initiatives were clearly demonstrated through the "Shared Solutions Workshops," related project field site visits, reports and project related videos.

FIGURE 1: Women engaged in the project are playing a pivotal role in the identification and selection of NUS crops that are considered to be desirable in terms of productivity and yield. Photo from the Shared Solutions Workshop field visit conducted in West Bengal.

1.10 Increasing participation by youth in CROPS4HD project activities

From responses, it is evident that project partners have a strong commitment towards engaging with youth through the range of project delivery activities. It is evident that the majority of organisations have identified opportunities for encouraging greater engagement and participation of young people in the project activities. This includes targeting youth participation in seed fair events, conferences, entrepreneurship focused activities (for example NUS crop value adding and processing), awareness raising in relation to nutrition and other field based events targeting farmers and consumers. Youth are encouraged to become engaged in local producer groups and other project activity initiatives.

Some organisations have set specific targets for group membership (for example setting a target of a minimum of 25% of youth being members or participants). In some instances, younger farmers are targeted to be recruited as leaders and "champion farmers" to producer groups. It is generally considered that they are more motivated to be actively engaged and have a greater willingness to implement potential changes. The following quotes illustrates specific roles performed by youth;

"Youth are engaged in our nutrition awareness campaign in the villages, organising seed and food fair and coordinating support for product aggregation and selling to markets/FPC. We encourage more youths to become social entrepreneurs and activate (in developing) rural food systems"

"For the nutrition awareness-raising activities, KUNDJI FONDO has placed particular emphasis on the participation of young people in the identification of intermediaries and mobilisers whose role will be to raise awareness within the communities"

FiBL have actually engaged young professionals through supporting post-graduate studies (three Masters and one PhD student), with research contributing to successful project outcomes (as well as adding to the increasing project research and knowledge base). This initiative is to be commended.

1.11 Integrating PUSH-PULL-POLICY project elements

Organisational respondents were asked to provide suggestions in relation to how best all three PUSH-PULL-POLICY elements could be best integrated and complimentary to one another. There were some very valid and worthwhile comments provided by respondents. That should be noted;

"I felt that the PULL component is not fully driving the project. PUSH and PULL are considered to be equally important for many project staff, so not sharing the conviction that the PULL component should be the main driving component (guiding the PUSH activities). The POLICY elements should be better connected to PUSH and PULL activities, (by organising policy workshops next to NUS field trials or inviting local policy makers to PULL workshops)".

"The three components of the project are complementary in that the approach takes into account the dynamics of the value chain, i.e. from inputs to marketing. In this approach, all the links in the chain are complementary. In addition, the players positioned in these areas have complementary skills which could make it easier to implement the project and achieve the results".

"There is an integrated approach since PULL activities aim to make NUS products available, whilst PUSH promotes them. The policy produces results enabling them to be defended before the authorities".

"PUSH and PULL integration has been achieved in greater extent, the policy integration is in the earlier stage yet to make the expected impact".

"The three components of the project are in perfect harmony because one leads to the other. Whatever the level of achievement of the two components PULL and PUSH, if the policies are not oriented in this direction, the impact would be difficult to have, hence the complementarity of the three components".

"The components depend on each other. A smallholder farmer require PUSH forces to understand and get the market picture for him to produce (PULL) as much as he/she can. However, the policy makers or generally the government, has to create good environment for its staff to get involved and understand for better future of implementation when SWISSAID TZ will not be there anymore".

1.12 Factoring in climate change and disaster risk reduction considerations

Organisational survey respondents were asked to describe the degree to which the impacts (shocks) linked to climate change and disaster risk reduction had been reduced through project design and implementation. Some respondents felt that the promotion of various NUS crops offer a higher degree of resilience to climate variability (species can withstand challenging conditions such as drought), when promoted as part of an AE farming system capable of enhancing soil fertility and water retention.

Other respondents considered that it is important to adopt a "whole of systems" approach that is capable of factoring in strategies and practices that assist in reducing the potential impacts of climate change. This includes a focus on human capacity (skills base) of those stakeholders who are targeted for interventions through the project. Further to this, the ability of farmers to produce NUS crops (and products) to then provide alternative sources of income has provided a novel way to diversify income sources and inherent risks. The following illustrates this holistic approach;

"Scarcity of seeds is becoming a major challenge for the farmers of Sundarbans these days related to local level climate change impacts and because of floods, excess rains, storms, salinity increase in soil and water level. We have facilitated formation and strengthening of community-based seed banks primarily managed by women groups in the project area. Building knowledge and skill around quality seed production for producers or seed multipliers is another important strategy that have been taken too. Seed guardians too are also engaged in conservation and exchange of traditional seeds as members of the seed bank. Through research trials and Participatory Varietal Selection (PVS) we have been able to identify potential NUS varieties that have greater resistance to climate shocks".

There are however on-going challenges in the implementation of such strategies including the ability of farm families to initially source suitable NUS seeds and familiarise with improved AE based production systems and processing/value-adding opportunities (including finding initial investment capital). The following comment provided by a respondent summarises this predicament;

"Community at large have little knowledge on climate change but failing to mitigate due to the tight their living standards and the environmental limitations are. The more the poverty at community households the more the destruction to the environment and the more are in the risk of natural phenomena".

1.13 Suggested enhancements to the project for priority implementation

Examples of suggestions relating to introducing new initiatives to the project included;

- Increased support for the field trial experimentation that will help to ensure that specific implementation risks are better managed (for example provision of resources for the fencing of trial sites to prevent potential damage by wandering (grazing) animals.

- Improvements in the identification of suitable NUS crops (including an initial “market potential assessment screening” process).
- Increased capacity building of staff to help ensure that they have the appropriate skills to undertake project activities (PULL side training was emphasised).
- Consideration towards alignment of staff skills and capabilities to the specific project objectives and anticipated roles (that in turn would also help to ensure that staff remained motivated).
- Opportunity to adopt a more integrated approach towards workshop training activities (so that there are established linkages and progressive learning pathways) for participants.

FIGURE 2: Members of a NUS product processing enterprise at Dargui in southern Chad

Appendix III: Shared Solutions Workshop results

1.1 Summary

The two Shared Solutions workshops conducted in Chad (involving project team members from Niger) and India (involving project team members from Tanzania) proved to serve as an excellent tool to engage with highly engaging project team members.

Overall, the level of participation was outstanding, with significant information, ideas and experience being gathered as a result of the workshop activities. The sessions conducted were highly interactive and were met with a high degree of enthusiasm and commitment from participants.

Activities undertaken included a project timeline review; identification and prioritisation of project challenges and opportunities; a series of project field activity field visits; completion of a project self-assessment matrix; identification of “shared Solutions” actions for addressing the prioritised opportunities and challenges and completion of a summary of future actions.

FIGURE 1: the Shared Solutions Workshop provided an ideal environment for participants to explore and discuss issues at depth.

The following table provides a summary of key workshop outcomes for both Chad and India.

	Chad (and Niger)	India (and Tanzania)
Timeline review; looking back, looking forward and expected lasting impacts.	Significant planning went into the scoping and design of the project. A "solid" baseline study has provided a large number of specific indicators that will assist in the M & E tasks against the project logic design thus demonstrating practice change impact when performed. The project has gained momentum, with a focus on building the skills and capabilities of project partners. The project methodology adopting the PPP integration is considered extremely innovative by project partners. In terms of the longer term "lasting legacy", outcomes to include setting up farmer producer networks; restoring orphan crops; scaling up of AE practices; increasing NUS crop consumption; reducing poverty; population health; access and availability to NUS crops; farmers seed systems and diversity in seed systems being recognised; recognition and support from government for NUS crops and farmer seed systems.	Project stakeholders were consulted extensively to identify project objectives and activities at the State level. Initial training at the farmer level raised awareness in relation to AE production systems and NUS crops. PMCA methodologies were introduced to project staff as was participatory variety selection PVS. Promotional and awareness activities were introduced, with three phases of PMCA (to 2024) where there has been an effort to build the capacity of producer seed banks and entrepreneurial opportunities for NUS product development. Efforts over the next 2-3 years will focus on on-farm seed conservation (linking to seed banks; nutritional profiling; developing AE systems; focused efforts towards building markets for NUS and AE products and support for developing AE based crop inputs. "Lasting legacy" elements (10 years' time) will be characterised by higher productivity and expanded area of NUS crops; greater awareness and preference for NUS crops amongst consumers; increased engagement of youth in NUS product development; policy supporting NUS production systems (and products) for farmers and entrepreneurs.
Identification of CROPS4HD project challenges and opportunities	**Challenges** **PUSH:** multiplication of NUS and non-NUS seed crops; conflict in access to grazing land; promotion of chemical agriculture (and high use/dependency); **PULL:** included missing market structure for AE and NUS crops; availability of equipment for processing of NUS crops; **POLICY:** leadership, agribusiness power; inconsistent demands and approaches to seed policy. **Opportunities** **PUSH:** CACOPAS to promote AE farming; seed banks to help disseminate farmer seed and participatory selection; **PULL:** development of NUS centred value chains; AE capacity	**Challenges** **PUSH:** quality seed availability; input availability (biopesticides, fertilisers, seed); lack of skilled human resources; viability of seed bank infrastructure; lack of scientific integrity; climate change and small land size; **PULL:** no clear approach to behaviour change; limited knowledge of using NUS crops in diets; changing food habits; limited business mindset at the community level; lack of financial incentives for AE and NUS produce; variability in production outputs and building consumer trust; **POLICY:** lack of innovative approaches to influence policies at all levels; complexity of the project and the partner capability; limited access to technical tools for sustainable production; lack of AE branding and packaging; no MSP for NUS; government focused on green revolution

	building and NUS entrepreneurship; **POLICY:** review of regulatory frameworks for seed (revision of law 16) and the development of farmer seed systems.	technologies; poor implementation of govt policies and election processes delay policy dialogue. **Opportunities** **PUSH:** increased awareness amongst consumers; opportunity to develop NUS products with value chain actors; social media outreach to increase awareness **PULL:** scope to collaborate with government schemes including community seed banks; greater opportunities to collaborate with natural farming initiatives; integration of climate resilient practices into government programs; scaling up of AE across all crop types; greater involvement women and youth and promotion of organic school kitchens **POLICY:** developing new support mechanisms such as infrastructure support for community seed banks; mainstreaming more farmer varieties; institutional and national recognition of NUS crops; expand government initiatives on rural entrepreneurship and introduce AE training to students of agriculture.
Priority challenges and opportunities; identifying specific actions that can be implemented.	A range of specific ideas (solutions) were provided in relation to the following 6 prioritised challenge and opportunity themes. 1. The use of chemicals (proposing solutions) PUSH CHALLENGE 2. Seedbank (supporting development and establishment) PUSH OPPORTUNITY 3. Peasant leadership development POLICY CHALLENGE 4. Equipment for processing PULL CHALLENGE 5. CACOPA's (supporting expansion) PUSH-PULL OPPORTUNITY 6. Advancing seed multiplication (NUS and non-NUS crops) PUSH-PULL CHALLENGE Information illustrates a useful insight to how improvements to the project can be achieved.	A range of ideas (solutions) were provided in relation to the following 5 prioritised challenge and opportunity themes. 1. How can we improve availability of quality inputs that support agro-ecological production systems? PUSH CHALLENGE 2. How best can natural farming be integrated into farmer's varieties and NUS crops? PUSH OPPORTUNITY 3. How best can social entrepreneurship for youth and women be best developed? PULL OPPORTUNITY 4. How can we develop a clear approach towards creating an ecosystem for behavioural change? PULL CHALLENGE 5. How do we fully capitalise on the wide range of partner skills, capabilities and resources? POLICY CHALLENGE Information provides a useful insight as to how specific areas can be addressed through the project.
Project field activity visits; analysis of observations	**1. Impact and practice change** Trained women processors, increase in NUS products and value adding; increase in product	**1. Impact and practice change** Successful integration of NUS crops; improvements in soil quality; increased income improved labelling and promotion of

	quality and supply and increased motivation. **2. Project implementation, communication and engagement** Evidence of strong partnerships; training; farmer engagement Integration PPP and case studies **3. Integration of PUSH-PULL-POLICY** Case study examples available, PEPAF must contribute more to push and pull, support for fairs is required. **4. Cross cutting themes** Evident that women and youth engagement is good, women entrepreneurs. **5. Out scaling opportunities** NUS products, processing and training, seed bank governance. **6. Cross organisational cooperation** Multiple examples of effective communication and cooperation.	seeds,; increased bio inputs; awareness amongst women to health and nutrition. **2. Project implementation, communication and engagement** Community seed banks influencing local seed systems; develop value added products; increase farmer training; active local marketing committees; good communication with farmers and engage more with the community in activity design. **3. Integration of PUSH-PULL-POLICY** More research on demand assessment needed. Convergence within existing policy project components occurring. Push evidence must complement pull; research on products limited and low awareness with beneficiaries. **4. Cross cutting themes** Strong participation by farmers; institutions other stakeholders; need to build entrepreneurial opportunities and climate change practices integrated with AE systems. **5. Out scaling opportunities** Niche market opportunities for awareness and promotion in local markets to build consumer linkages. Expand AE practices, include more cultivars, promote farm gate direct marketing, develop “champion” farmer extension approaches. **6. Cross organisational cooperation** Multiple organisations engaged, significant potential to expend further and work more closely with govt, KVKs and NGOs.
Project assessment matrix self-assessment (DAC criteria)	**1. Relevance** Focus on AE systems, food security, social benefits, income. CACOPA’s central focus. Many examples of adoption of new practices, AE systems and food innovation, food diversity.	**1. Relevance** Project addresses food security dietary diversity; income generation; identifying resilient cultivars; market development; agro bio-diversity; soil health; women leadership; policy support for farmers varieties and local market development. In terms of social elements, specific attributes include women participation learning new skills and techniques; recognition of women farmers for bringing back neglected crops / varieties. Evidence of developing integrated farming systems with crop diversity; knowledge of farmers on AE systems; family health and nutrition; functioning institutions (village level); establish separate market place; processing units and seed / product sales.

	2. Coherence Integrate PPP, PMCA approaches, build trust, expand trade fair promotions. Complex situation, few stakeholders engaged; advocacy only focuses on seed systems, poor communication between countries .	**2. Coherence** Common orientation and integration of outputs from the project team and partners with good levels of communication, however this can be further improved. There can be increased coherence to government programs by strengthening of relationships.
	3. Effectiveness Highly effective PUSH level through enhanced farmer seed systems; adoption of good AE practices, resilience to climate change. PULL; PMCA effective in identifying and working with stakeholders. POLICY; good collaboration with DSP, PEPAF case studies demonstrate revision of law 16. Limitations: Full benefits agronomy trials not realised; more timely analysis/sharing results, more research on local crops.	**3. Effectiveness** Push: effective selections in mother and baby trials, AE and other trials. Pull: PMCA initiatives increasing awareness of NUS product development as part of transforming production systems goals. Opportunity to focus on consumer research, establishment of stronger market linkages. Policy: a bottom up approach required (farmer main partner); policy needs to support alternative seed systems (seed quality standards) for implementation at local farmer level. Need to develop clear expectations for the policy advocacy team through engagement teams.
	4. Project efficiency Successful establishment of CACOPA at village level, thematic groups able to work without financial support from the project or government. PUSH and PULL components on schedule. Limitations: POLICY reform affected by obstacles. Project efficiency can be improved through revitalising existing CACOPA's (Chad), awareness campaigns, CACOPA capacity building (technical and financial).	**4. Project efficiency** The allocation of financial resources undergoes proper systems of allocation, with the view of identifying how best resources can be used most effectively. Opportunities for leveraging through other projects and programs are identified. Proper use of equipment, machinery and infrastructure followed. Monitoring of outputs and activities.
	5. Impact Many new AE practices being introduced, increased awareness, improved eating habits, social cohesion strengthened. CACOPA groups demonstrating impacts with introduction of NUS crops, group exchange visits. Gender and climate change elements being factored into project activities.	**5. Impact** Impacts include increased agro-biodiversity, building up of social capital, nutritional security, direct marketing of products, women empowerment. Demonstrated through case studies, photos and videos. Inadequate youth engagement needs to be addressed, gender inequality requires a further focus, as do climate change and DRR elements into project activities.
	6. Sustainability Awareness of the need to review law 16 and policy related advocacy. Positive impact of some AE practices, strengthening of stakeholder skills, governance	**6. Sustainability** A need to strengthen farmer managed seed banks, improve engagement with government officials to address policy issues. Developing new approaches such as PMCA combined with supporting

	of farmer seed systems, improved economic conditions and improved partnerships along the value chains. Changes in eating habits, support for NUS crops, community ownership of project.	community based organisations is paying rewards. Overall a learning process for all project stakeholders in terms of integrated PPP and NUS crops. Transitioning from conventional approach to business focus and sustainable ecological development takes time and effort. Adopting a stronger consumer and marketing focus is a new approach for project teams.
	7. Cross-cutting themes Evidence of women empowerment (entrepreneurship, engagement in project activities and training) and youth (entrepreneurial roles). Focus on climate change impacts but not strategies to deal with it.	**7. Cross-cutting themes** There needs to be a greater focus on integrating climate change and disaster risk reduction elements. Whilst there are positive elements of gender equity and engagement of women and youth, there can be an increased effort in this regard.
Developing Shared Solutions for priority opportunities and challenges	**1. The use of chemicals**; some confusion over the use of chemicals thus requiring increased awareness raising. Requires a campaign to make policy makers aware of the issues, policy change is required. Additional resources required to support CACOPA's in awareness raising, promotional support, training of farmers as well as strengthening the technical capacity (of CACOPA's).	**1. Scientific based integrity** Ensure integrity in developing NUS varieties and AE systems through; 1. More intensive research trials on NUS (AE specific PoP standardisation; DUS characterisation and nutritional profiling cultivars) to create evidence documents for policy influence, GI tagging or notification. 2. Screening of biotic and abiotic stress tolerant local germplasm for each AE zone with local/national/international agencies. 3. On-farm testing of cultivars and AE practice packages through citizen science approach, documentation of best practices 4. Cost-benefit analysis of each package of practices at on-farm level.
	2. Establishing seedbanks (supporting development and establishment); Awareness raising amongst farmers in relation to the importance and benefits of seed banks, provision of resources for training and infrastructure for establishment of seedbanks (and building up of initial stock). Requires policy intervention (Law 16) in particular addressing the ban allowing farmers to trade and sell seed on national markets.	**2. Achieving transformational change through out-scaling** To achieve lasting impact and change (linked to out scaling) the following by: 1. PULL: Upscaling separate market space through farmer's network and FPCs. 2. PULL: Expand social entrepreneurs for establish seeds and bio input centres. 3. PUSH: Upscaling AE practice and seedbanks through participation and joining in farmer's networks. 4. POLICY: Upscaling of farmers market through policy reform (district and state).
	3. Peasant leadership development (CACOPA's); issues in relation to "malfunctioning" of CACOPAs, there being a lack of social cohesion, delays in implementing project activities and the ability to disseminate good AE practices	**3. Behavioural change development** Supporting mechanisms for behavioural change (adoption and practice change), the following recommendations were identified; 1. Identify major challenges and socio-cultural limitations in the community and how project outcomes/outputs are impacted.

	and knowledge. Additional resources need to be mobilised over a longer timeframe, provision of capacity building, increased networking and targeting women and youth. Ideally identify "champion farmers" as advocates, provision of additional resources. Policy changes to recognise farmer traditional knowledge required.	2. Self-assessment and/or reflection on the approaches and policies applied in the project (what effect do they have on addressing the identified problems). 3. Map and allocate resources needed, pilot the behaviour change approach. 4. Integrate behavioural change in the project planning and implementation (phase II).
	4. Equipment for processing NUS products; lack of suitable equipment impacts on productive capacity of NUS processors, worsened by lack of NUS outlets (for marketing) and a low level of interest or awareness. Need to identify and specify the equipment type (and capacity) adapted to processor needs and products being processed. Require policy changes to tax exemption for processors of local products, energy policy (cost of electricity etc). Additional project resources needed for implementation of these recommendations.	**4. Local Policy Development** Aim to initiate local policy development supportive of traditional NUS and AE food production systems, support local market facilities and improving marketing opportunities for farmers through; 1. Develop plans for awareness workshops and policy actions at Panchayat, Block, district and State level; working with identified 'influencers' in current and next project phase. 2. Understand and link project activities with ongoing relevant R&D projects at all levels. 3. Seed drives policy: Develop state-specific policy reform, promote AE, NUS crops, fish and livestock breeds/varieties. 4. AE market interventions; processing, value addition and branding at farm-gate, local markets; increasing income/nutrition.
	5. CACOPA's (supporting expansion); benefits of expanding the CACOPA network will allow the project to reach out to a larger number of communities and farmers. Increasing membership will provide greater visibility and a structure for the project to work with, utilising (and building) local leadership opportunities and engaging with local actors. Requires a staged and orderly approach that is supported financially and gaining local community support. Will require govt support, NGOs and policy to support expansion of the network.	**5. Price, promotion and perception** Focus to identify how communities can be supported in marketing NUS crops/products by developing a clear market differential of products. Recommendations arising included: 1. Undertake intensive consumer research at different food systems. 2. Develop branding, labelling and licensing guidelines for product food safety based on different marketing systems. Establish Regulatory Board for labelling. 3. Increase awareness amongst stakeholder (doctors, religious institutions, PHC workers, nutritionist, social media, radio), involving personalities; ambassadors NUS products. 4. Support collaboration with Govt and private sector for product promotion.
	6. Advancing seed multiplication (NUS and non-NUS crops); increase NUS seed availability through increased production, strengthen social networks establish famer	

	technical seed committees. Improve seed selection and production, training, seed bank systems. Require greater collaboration with govt, researchers, farmers.	
Future Actions	Both workshops identified the need to continue in a pro-active manner with the further development of the project, through addressing the identified challenges and opportunities that had emerged through the workshop. Participants attending the workshop felt that the workshop had allowed all partners to come together in an open and trusting environment and share their ideas, experiences and aspirations. The highly driven participatory nature of the workshop had resulted in all participants being able to share a common level of understanding of the project, including the joint achievements (to date), and areas of priority to address in moving forward. This provides an ideal base to continue with similar participatory workshops into the future as a means of developing shared solutions and approaches to project development as part of a "continuous improvement" approach.	

TABLE 1: Summary of the outcomes from the Shared Solutions Workshops for Chad and India.

1.2 Introduction

The session plan program for the Shared Solutions Workshop is presented in Appendix VII. The workshop provided a highly engaging environment for all participants, allowing them to work through a range of small group-based activities, project delivery site visits and lively presentation and discussion sessions over the three days.

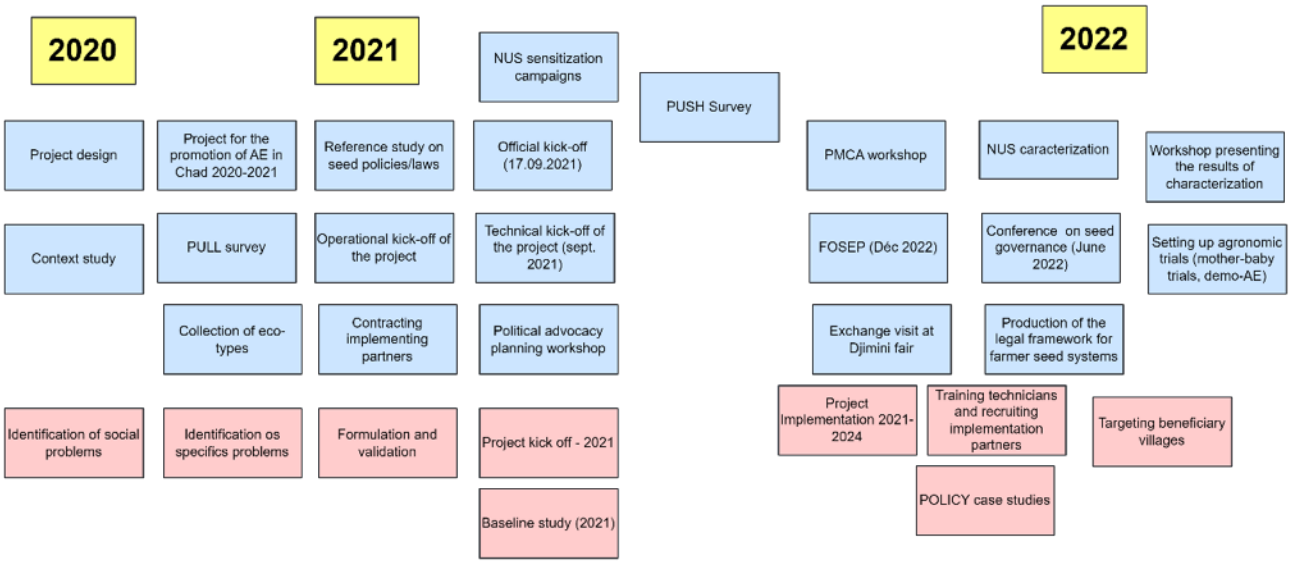
There was a range of specific outputs from each of the two workshops that will be presented and discussed in detail. The workshop activities were designed in such a manner that allowed all participants to contribute their own experiences and knowledge they had gained in delivering CROPS4HD project activities. Further to this, participants identified the issues and challenges that they had faced, in addition to working through and developing potential solutions as to how these could be addressed and resolved. Each of the activities associated with the workshop is presented in Table 2 (below) and will be reported in further detail for each of the two Workshops.

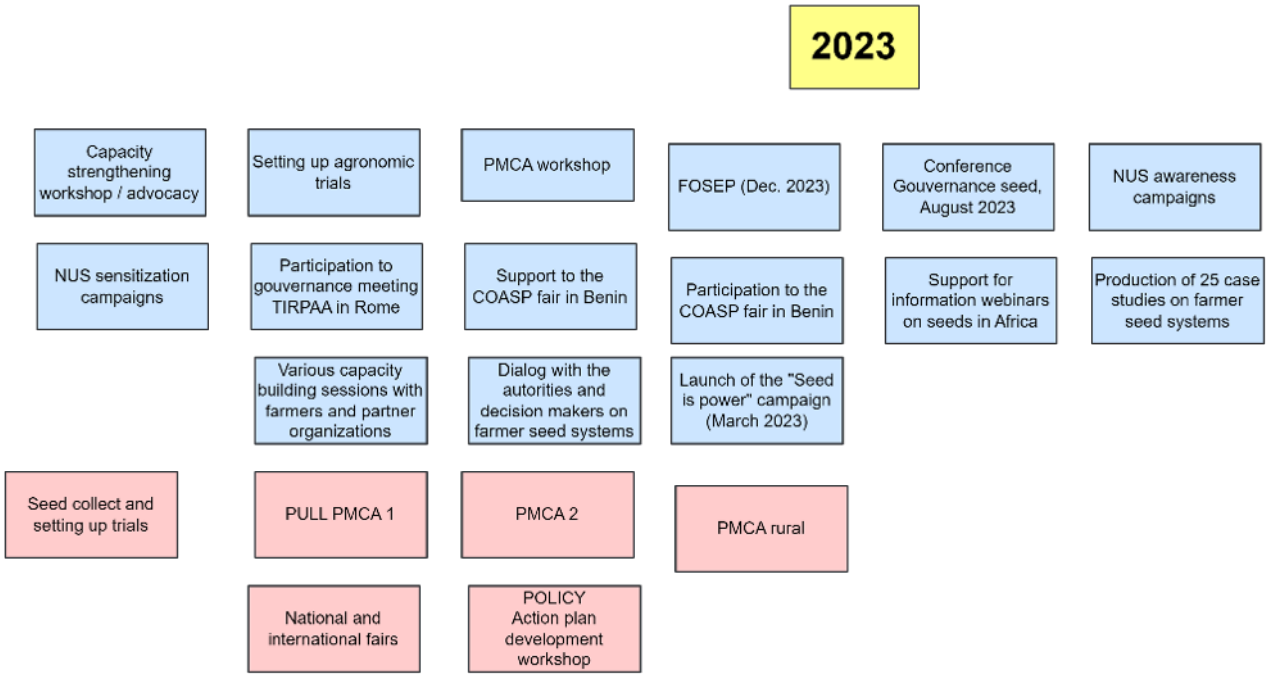
Workshop session	Description and outcomes
1 Timeline review; looking back, looking forward and expected lasting impacts.	This group based activity helped identify (1) the major achievements the project had achieved to date (2) the expected activities and future achievements for the project over the next 3 years and (3) the "lasting legacy" in terms of the specific benefits and impacts that the project will be recognised as having achieved in 10 years' time.
2 Identification of CROPS4HD project	Working in small groups, participants identified (1) the current challenges that impact successful project delivery activities and (2) opportunities that have not yet been fully realised. After these were identified participants

	challenges and opportunities	consolidated any duplicate items and sorted responses according to "push pull and policy" elements. These were then prioritised by all participants. The 6 most highly ranked items were then identified and used for workshop 3 activity (below).
3	Priority challenges and opportunities; identifying specific actions that can be implemented.	Each group were allocated one of the 6 prioritised challenges or opportunities (from Activity 2). Group discussions identified (and documented) how specific challenges could be best overcome or resolved whilst with opportunities identified what actions should be taken to help the project benefit from the opportunity. Groups summarised responses and presented findings for further discussion.
4	Project field activity visits; analysis of observations	On day 2 participants visited a number of project activity sites to familiarise with grass-roots delivery initiatives by local partners. Each team were allocated a specific "line of enquiry" to observe during visits: (1) Impact and Practice Change; (2) Project Implementation, Communication and Engagement; (3) Integration of PULL PUSH POLICY; (4) Integration of cross-cutting themes; (5) Out scaling and future project legacy; (6) Evidence of cross organisational cooperation. Presentations from each group summarised "take-home messages".
5	Project assessment matrix self-assessment (DAC criteria)	Participants undertook a self-assessment in relation to the CROPS4HD project evaluation criteria framework. Each group had a specific set of questions to address associated with each of the 6 criteria, these being relevance; coherence; effectiveness; efficiency; impact and sustainability. Their findings were summarised, and then presented to the whole workshop group for further discussion and feedback.
6	Developing Shared Solutions for priority opportunities and challenges	Groups were assigned one of the priority challenges and opportunities, that were identified (and prioritised) earlier in activity 2 and 3. In the case of the India workshop, the 6 priority challenges and opportunities were reviewed and updated in order to provide a more focused topic for discussion for the groups. Groups responded to key issues; 1. What are the major impacts (or potential benefits) on project performance project now and into the future? 2. What are the specific steps required to address the challenge (or implement the opportunity); and who (organisations or specific people) can take on these responsibilities? 3. What additional resources are required to implement actions? 4. What is the time frame for implementation of specific actions and recommendations? 5. Are policy related challenges required; and if so what changes? 6. What changes (if any) are required in terms of how the project is managed to overcome the specific challenge? Each group provided a summary of their findings, followed by a presentation to the workshop group.
7	Future Actions	Facilitated group discussions identified specific actions considered a priority to implement in the future.

TABLE 2: Summary of the key activities that were undertaken as part of the Shared Solutions Workshop program.

Chad workshop activity 1: Timeline Review





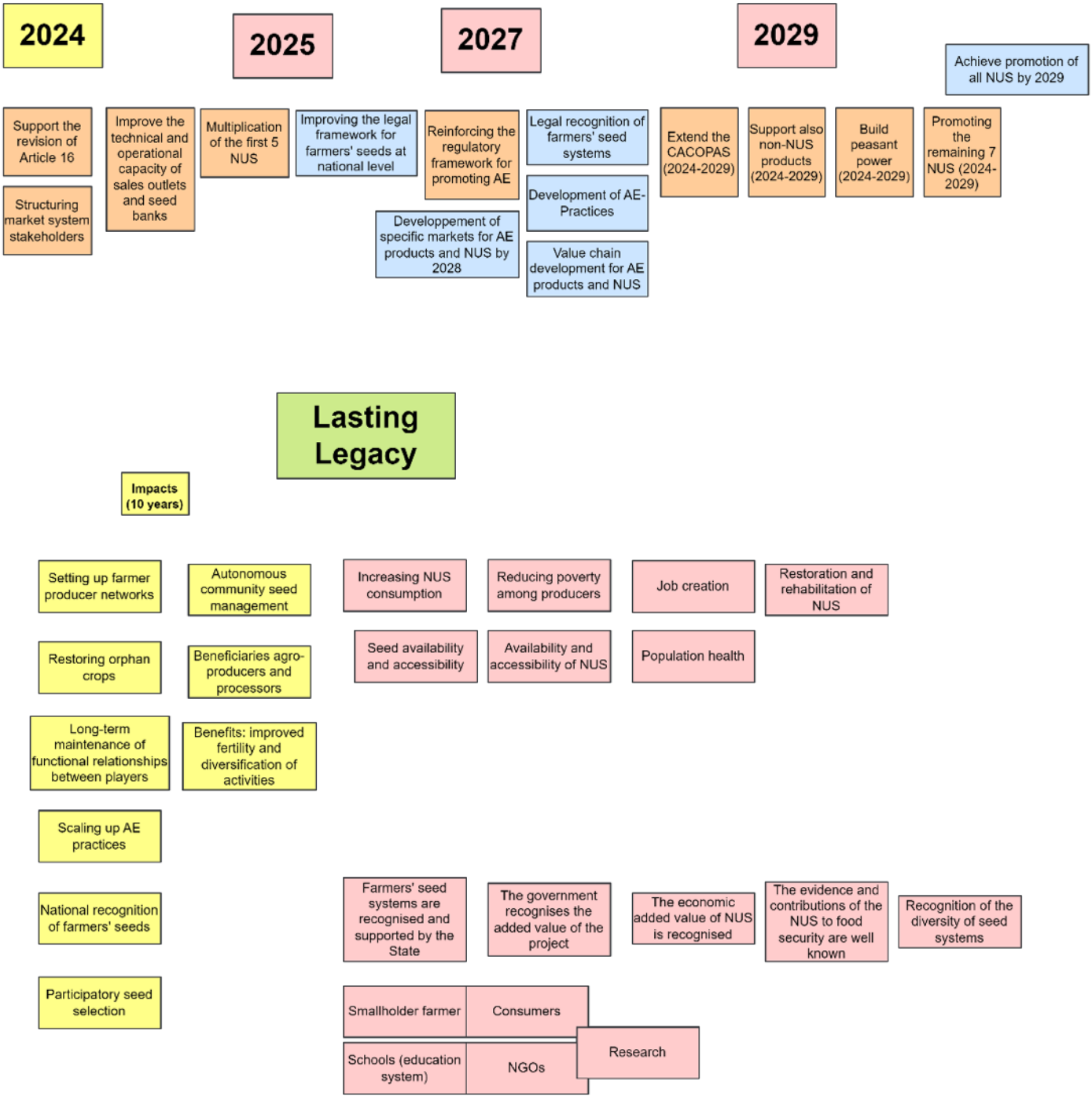
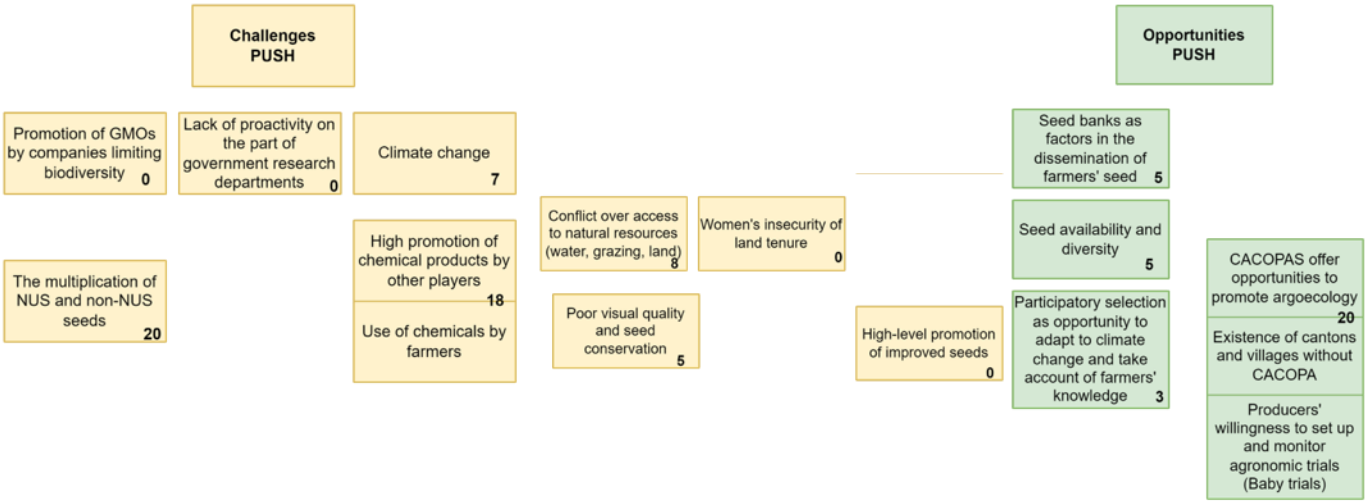


FIGURE 2: Summary of the “timeline review” activity that was undertaken as part of the Shared Solutions Workshop.

FIGURE 3: Chad Shared Solutions Workshop participants place some of the “response cards” on the wall following one of the group exercises.

Chad workshop activity 2: identification of project challenges and opportunities



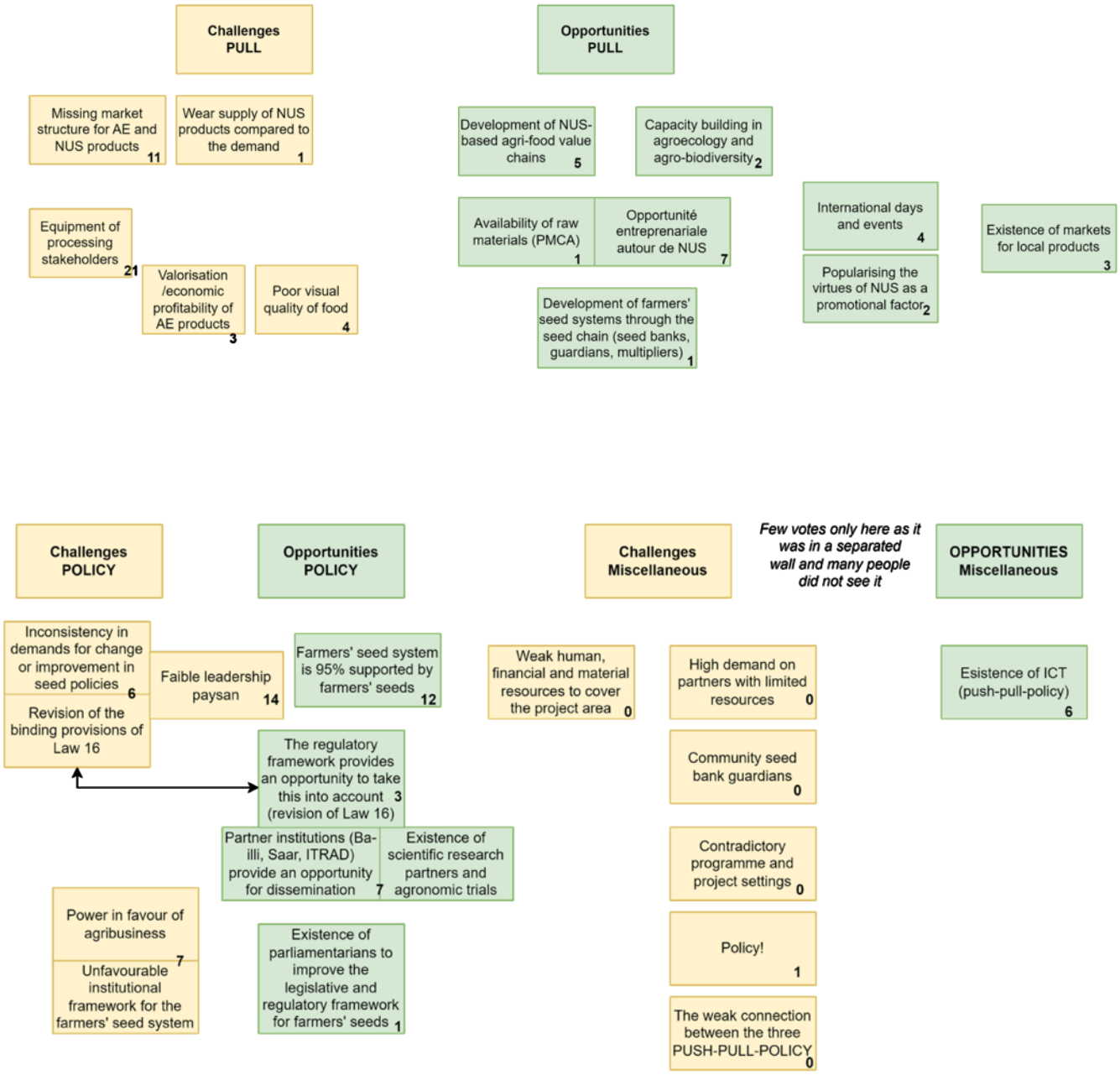


FIGURE 4: Summary of the identified challenges and opportunities (associated with the CROPS4HD project) that was undertaken as part of the Shared Solutions Workshop in Chad.

1.3 Chad Workshop Activity 3: priority challenges and opportunities

PUSH CHALLENGE

Group 1: The use of chemicals; proposition of solutions

- Situation analysis on the use of chemicals in Chad/Niger
- Study analysing the legal framework on these chemicals and products de synthèse
- Developing and improving information through
  - Case study testimonials
  - Video, photos
  - Info on alternatives (AE-promotion, nutrition, health, therapeutics)
- Actively promotion of Agro-ecological-products and NUS / main crops cultures to all stakeholders
- Big information, sensitization and lobbying campaign on chemicals
- Communication campaign on the negative effects of the use of chemicals
  - Press conference
  - Policy notes
  - Declarations
  - Petitions

PUSH OPPORTUNITY

Group 2: Seedbanks

- Availability of seeds at local level
- Seed exchange
- Improvement on local seed conservation
- Characterization of peasant seeds
- Maintain quality of seeds
- Securing local seeds (theft, fire)
- Income source for the community

CHALLENGE POLICY

Group 3: Peasant leadership

- Strengthening peasant capacity and their organisations (trainings, equipment)
- Network the partner organisations in an inclusive way
- Build peasant lobby around specific topics

CHALLENGE PULL

Group 4: Equipment for processing

- Subsidy for processing equipment
- Processors' training on various topics linked to processing and marketing
- Training of artisanal craftsmen to manufacture processing equipment
- Local manufacture of processing equipment

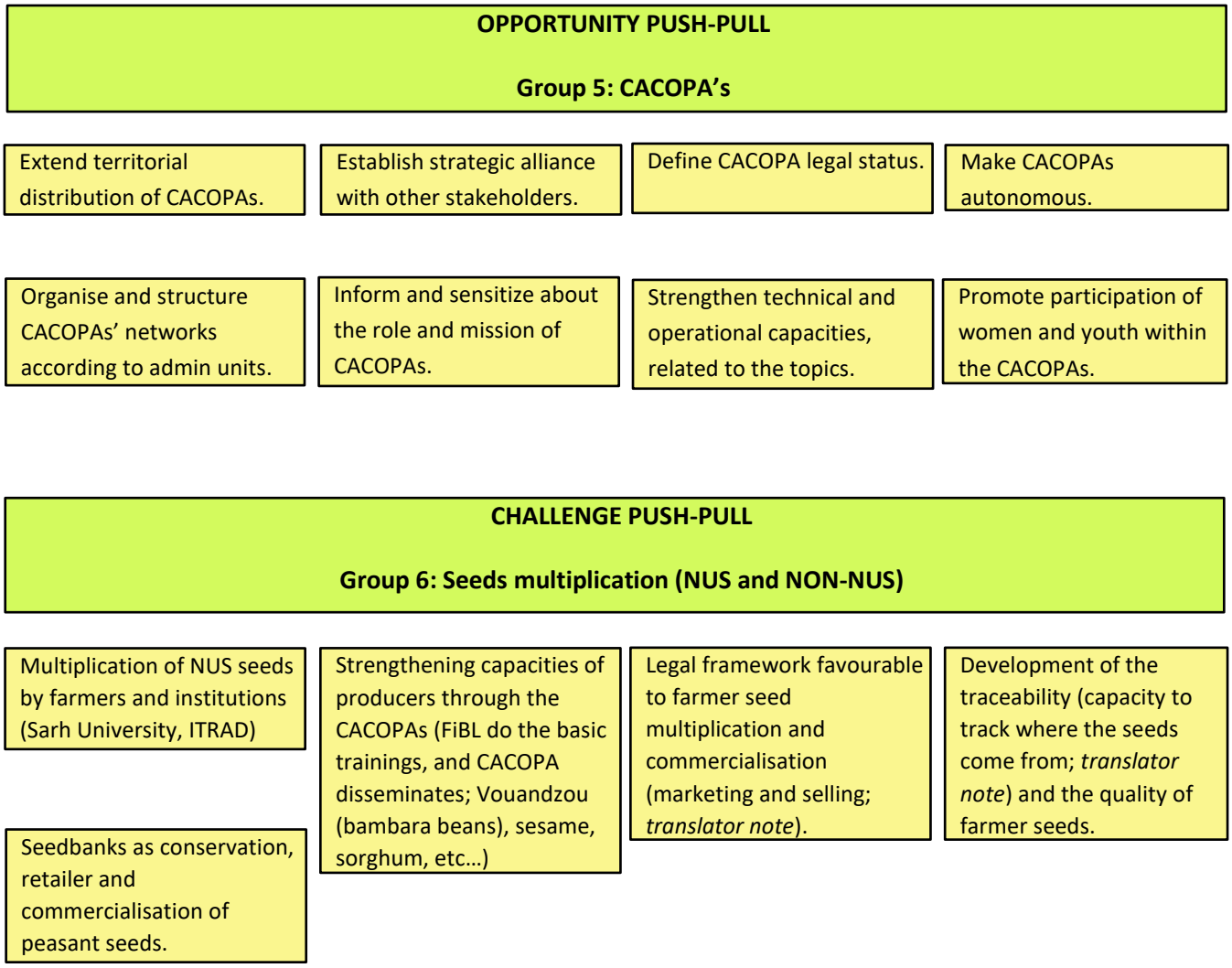


FIGURE 5: Summary of the characteristics associated with the prioritised challenges and opportunities as documented by group participants for Chad and Niger.

1.4 Chad workshop activity 4: project field activity visits

Group 1: Impact and practice change (including specific examples of practice change identified).

Group 2: Project Implementation, communication and engagement; Identifying opportunities for improvement with the stakeholders targeted.

Group 3: Assessing the integration of PULL PUSH POLICY.

Group 4: Integration of cross-cutting themes of gender equity, women and young people participation, climate change and disaster risk reduction.

Group 5: Identifying opportunities for out-scaling and future project legacy.

Group 6: Evidence of cross organisational cooperation working successfully working together.

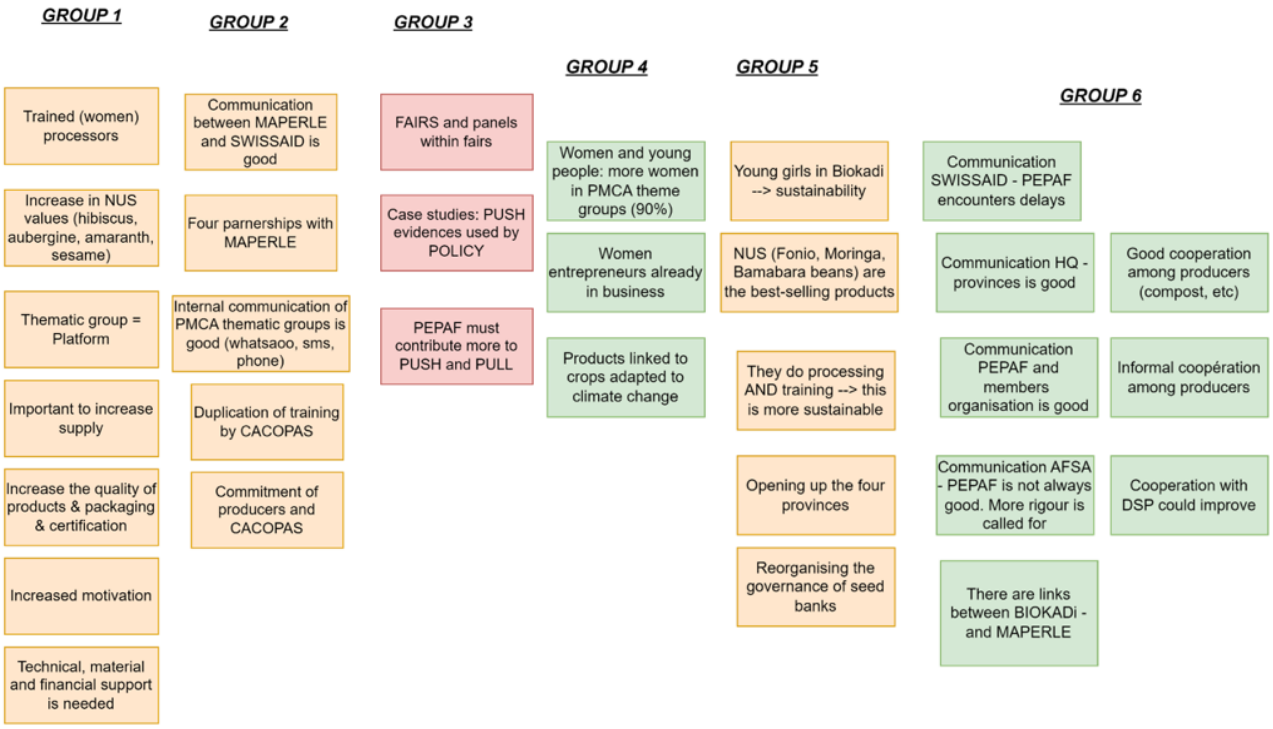


FIGURE 6: Summary of the characteristics associated with the field visits using an assessment criterion designed to assess the effectiveness and impacts from the group related activities.

FIGURE 7: Chad Shared Solutions Workshop participants prepare their responses to one of the feedback activities.

1.5 Chad workshop activity 5: project assessment and matrix self-assessment (DAC criteria)

As part of this activity, workshop participants undertook a self-assessment in relation to the CROPS4HD project evaluation criteria framework. Each group had a specific set of questions to address these being relevance; coherence; effectiveness; efficiency; impact and sustainability. Results are presented.

1. Relevance of the project			
Is the project relevant to all stakeholders?	Do project objectives factor in all of the social, environmental and economic conditions?	What evidence do we have that satisfies the relevance of the project to stakeholders?	
Yes, because it fulfils the needs: • Soil fertility (push) • Food security (push) • Income increase (pull) • Social demands and adoption of project activities, techniques and technologies • Obvious interest from public institutions and services	Yes Socially: The success of CACOPAs is based on social structures. Example of Léré: from 2 to 9 CACOPAs, peasant seed, tradition Environmentally: Environmental protection through AE partiques Economically: Local materials for the production of organic fertilizer and Increase and diversification of revenues through NUS and AE products Project adjustments are required: A readjustment for material and financial support to value chain stakeholders and CACOPAs and the budget, advocacy increase the action plan	Number of people having adopted the techniques and technologies far exceeds the number of people trained by CROPS4HD. • 7 days compost – Nderguifuge • Existence of production and sales of AE inputs • Agri-food innovations • Group sales of AE-products	Thanks to farmer approach and food and nutrition security (1) Increase yield per ha (doubling → tripling); (2) Food diversification thanks to the (re-)introduction of new crops and crops association: Taro/Maïs; Fabirama – Aubergine – Oignon; Sorghum and (3) From 1 to 2 meals a day

2. Project coherence

The PUSH PULL and POLICY dimensions are articulated in an integrated way through: (1) Seed fairs and PMCA; (2) Participatory Variety Selection; (3) Seedbanks

Gaps: (1) Insufficient stakeholder involvement (2) Advocacy concerns only seed systems

There is open communication and trust between the organisations, which encourages collaboration and a systemic approach: (1) WhatsApp groups that encourage exchanges between advocacy actors (both countries) (2) Pannels at trade fairs, PMCAs, side events facilitate open communication.

At international level, they do not take this into account because of poor communication (language barriers) and meetings (often only online).

At a continental level, they do not take this into account because of the lack of contact between country partners.

At national level, partnerships between organisations take account of the complexity and dynamics of relationships through the involvement of several partners: NGOs, research institutes, associations, etc.

3. Project Effectiveness

Achievement of objectives and results

PUSH: (1) Enhancement of farmers' seed systems (seed keepers, multipliers, fairs, seed banks); (2) Adoption of good AE practices that have enabled resilience to the effects of Climate change and increase in productivity; (3) Agronomic trial activities have not yet achieved the expected results (characterisation of NUS).

Achievement of objectives and results

PULL: PMCA: identifying stakeholders, setting up networks and initiatives

Achievement of objectives and results

POLICY: (1) Good collaboration with the DSP; (2) PEPAF case studies produced useful evidence for the revision of law 16; (3) Fairs: raising awareness to defend interests (local varieties, etc.)

Support to under-performing areas; (1) Speed up analysis and sharing of results and (2) Extend research to other local crops

4. Project Efficiency

The efficient use of project resources is that

- The project implementation team has succeeded in setting up a CACOPA in each village.
- The thematic groups are able to work without financial support from the two countries, despite the absence of support from the respective governments.

The PUSH and PULL components are approximately on schedule. The POLICY component is still affected by many obstacles.

The results and impact of the project's resources can be optimised by:

- Revitalising existing CACOPAs
- Intensifying awareness campaigns with a view to creating new CACOPAs
- Strengthening the technical and financial capacities of CACOPAs
- Setting up village structures in Niger such as CACOPAs
- Facilitating the networking of CACOPAs at all levels
- Strengthening the technical and material capacities of the PMCA's thematic group leaders.

5. Project Impact

Differences the project is making in terms of social, economic and environmental benefits	Evidence and its documentation (supported by observations, photos, video, testimonials, products and technical data)		Gender and other impacts
The dynamics of farmers' movements • Extension of the new agricultural practices • Community awareness of the issues and challenges of farming activities • Increased agricultural yields • Improving eating habits • Income diversification and improvement • Strengthening social cohesion • Improving the living environment and production factors • Improved quality life	• Existence of CACOPAs (observation, list of CACOPAs, list of CACOPA members). • 7-day composting, biopesticides, “zai”, stone barriers, crop associations, nurseries, etc. • Awareness-raising session against the use of chemical products, affirmation of refusal to use chemical fertilisers and pesticides • Tangible case in producers' homes within increased quantities	• Introduction of NUS, market gardening, processing of local products • Agricultural production, market gardening, beekeeping, fish farming, petty trading, group sales of products, livestock farming • Mixing producers, initiating exchange visits, seed exchange (testimonials) • Building the community, purchasing means of production, care, training • Collection of animal and plant waste	• The impacts mentioned are more noticeable among women and young people. • The agricultural practices popularised are a response to the effects of climate change and to reducing risk and disasters.

6. Project sustainability

Will the project benefits continue into the future?

POLICY: Stimulate the need to review law 16

PUSH: (1) Some AE practices have a positive impact (compost, biopesticides, etc.); (2) The acquisition of technical knowledge by producers (3) Soil restoration (4) Creation of thematic groups (GT)

To what degree are organisational capacities strengthening to ensure long term capability of actors?

POLICY: (1) Existence of CACOPA; (2) Appropriation of advocacy by PEPAF

PUSH (1) Governance of the farmers' seed system (sales, value chain; (2) Improvement of beneficiaries' economic conditions; (3) Revaluation of NUS by the project; (4) Capacity building / Networking / Cohesion

PULL; (1) Existence of partnerships between processors and producers

What are the direct project impacts in personal skills and capabilities?

PULL; (1) Change in eating habits; (2) Attachment to NUS; (3) Integration of NUS

PUSH: (1) Community ownership of the project

1.6 Chad workshop activity 6: developing Shared Solutions; priority actions

The focus for activity for each of the 5 groups, together with the key questions that each was asked to address (according to the specific challenge/opportunity) are presented.

GROUP 1: Use of chemicals

Impacts of this challenge are confusion and misunderstanding

Deconstruction of existing AE practices habits through awareness-raising and the distribution of chemicals to producers by some stakeholders who show confusion among some producers, thus limiting the achievement of a critical mass (of AE producers: on a cantonal, departmental, provincial or national scale.

Awareness raising among decision makers

Awareness raising and information campaigns through the media.

Solutions to address the challenges:

Communication campaign on the negative effects of the use of chemicals to the ground, to decision makers, to parliamentarians, through evidence.

This is the method "farmers to farmers" for social nets to address challenges.

The producer is the most adequate stakeholder to take the responsibility for the actions to be implemented.

Policy challenges: legal frameworks on chemicals must be revised or created (if they do not exist yet), at national level.

A need for additional resources and competencies to implement actions.

Resources: provide CACOPAs with rolling resources (vehicle; *translator's note*) to support awareness-raising, provide proof and evidence of the negative effects of technologies and many other materials.

Strengthen technical capacities of CACOPAs, on animation, sensitisation techniques, information and advocacy.

Strengthen technical and operational capacities of implementing NGOs

Behavioural changes required

There are changes in attitudes, behaviours and habits regarding the use of chemicals.

Support required to address challenges; (1) Promotional support for farmer leaders on agricultural inputs, in particular organic fertilizers, biopesticides and seeds; (2) Organisation of competitions and input fairs (organic fertilizers, biopesticides, seeds and seedling production).

Timeframe: to be realised permanently

GROUP 2: Opportunity - seedbanks

Implementation stages:

- Identification of the location and umbrella organisation carrying the initiative
- Raising awareness amongst organisation and farmers relating to seedbank importance
- Training, equipping and structuring the organisation to manage the seed bank
- Setting up the seed bank
- Building up the initial stock

Who to engage with; organisations carrying the initiative (CACOP, farmers' organisation, umbrella organisation, existing organisation)

Required resources (1) financial (2) material and (3) Technical resources (skills and technical capacity building)

Policy and political challenges: there is a major political challenge: (1) Law 16, particularly on the issue of (banning) the sale of farmer seeds and (2) Advocacy to allow the selling of farmer seeds on national markets

Changes needed to best support the opportunity (1) Revision of Law 16 and (2) Access to seed bank operating materials

Timeframe: maximum three years to introduce and develop the initiative.

GROUP 3: Challenge – peasant leadership

The main impacts:

- Malfunctioning of CACOPA
- Lack of social cohesion
- Delays in implementing activities and difficulties in disseminating good AE practices
- Lack of coherence
- Failure to achieve expected results

Changes needed:

- Mobilisation of additional resources
- Longer timeframe
- Sustainability

Solutions to meet the challenge:

- Capacity-building for producers and their organisation (training, equipment, structuring)
- Inclusive networking of partner organisations (women's groups, young people, breeders, opinion leaders)
- Enhancing farmers' knowledge: find "champion" farmers to promote it.

Who can influence

- Organisation: ANADER, NGOs
- People: Traditional authorities

Additional resources/skills

- Financial, human, and material resources
- Farmers' skills need to be strengthened.

Timeframe: within the project horizon

Who can take responsibility for actions

- Local leaders, traditional authorities

State policy is not against building farmer leadership, so no major challenges. But farmers' knowledge is not recognised. And tensions may arise between farmer leadership and traditional authorities.

GROUP 4: Challenge - equipment for processing stakeholders

Lack of equipment impacts:

- Reduction in the productive capacity of NUS processors
- Lack of secure outlets for NUS producers
- Low interest in NUS production

Solutions to meet the challenge are:

- Identifying real equipment needs
- Sizing equipment to match processors' production capacity.
- Providing processors with suitable equipment (adapted to NUS)

Who to engage (and beneficiaries) Promoters, project implementers, government, service providers

Resources: additional human and financial resources are needed to implement the required actions

Required changes needed to meet the challenge:

- Identifying and signing an agreement with a partner specialising in agro-food processing equipment
- Recruitment of a transformation assistant by SWISSAID
- Increase the budget to ensure that the required actions are carried out

Policy changes to be addressed: (1) Tax exemption (for processors of local products*; translator's note*) and (2) Energy policy (electricity; *translator's note*)

Timeline: one year deadline (1)

GROUP 5: Opportunity – CACOPA's

Expected benefits of supporting expansion of CACOPAs

- Extending the CACOPAs gives them more members, greater visibility and legitimacy from the ground
- Affirmation of farmers' leadership/power
- Actors in local transformation and development

Required actions in support of expanding CACOPAs:

- Define and publicise the CACOPAs' statutes and mission
- Structure and strengthen the CACOPAs' technical and operational capacities
- Establish relations with other players

Timeline: 3-year deadline

Who to engage with; CROPS4HD implementing partners, Buco, expert consultants, resource persons, CACOPAs themselves

Policy changes and influence:

Affirmation and positioning of CACOPAs as interlocutors at local level

Changes required for CROPS4HD:

- Taking farmers' interests into account by the opportunity
- Promoting responsible farmers' citizenship

Required resources: material, financial, human

GROUP 6: Challenge – seed multiplication NUS and NON-NUS crops

Impact:

- Availability of seeds (accessibility)
- Production increase
- Income increase
- Empowerment of producers
- Strengthening of social ties
- Affirmation of cultural identity
- Increase in biodiversity.

Influencers

- Research
- The government
- PEPAF and farmers' organisations

Solutions:

- Select seeds
- Organise, train and supervise farmers' seed producers
- Build and multiply seed banks

Best placed to assume responsibility:

- PEPAF
- Farmers' organisations
- Partner NGOs

Resources and skills required:

Financial, technical, logistical and human resources

Changes needed:

In terms of improving CROPS4HD project management

- Integrate the animal component into the project (breeding; by analogy with seeds)
- Strengthen collaboration with government departments (DSP, research, etc)
- Link seed multiplication to seed banks
- Expand seed banks to increase seed stocks (could also be built by producers themselves)

Political challenges:

- Political and administrative instability (constant change of actors and institutions, etc.)
- It will be necessary to reorient public policy in favour of agriculture, and revise law 16 in favour of farmers' seeds.
- Set up a farmers' seed technical committee (State, research, partners)

Timeframe: 5-10 years

1.7 India Workshop Activity 1: Timeline review

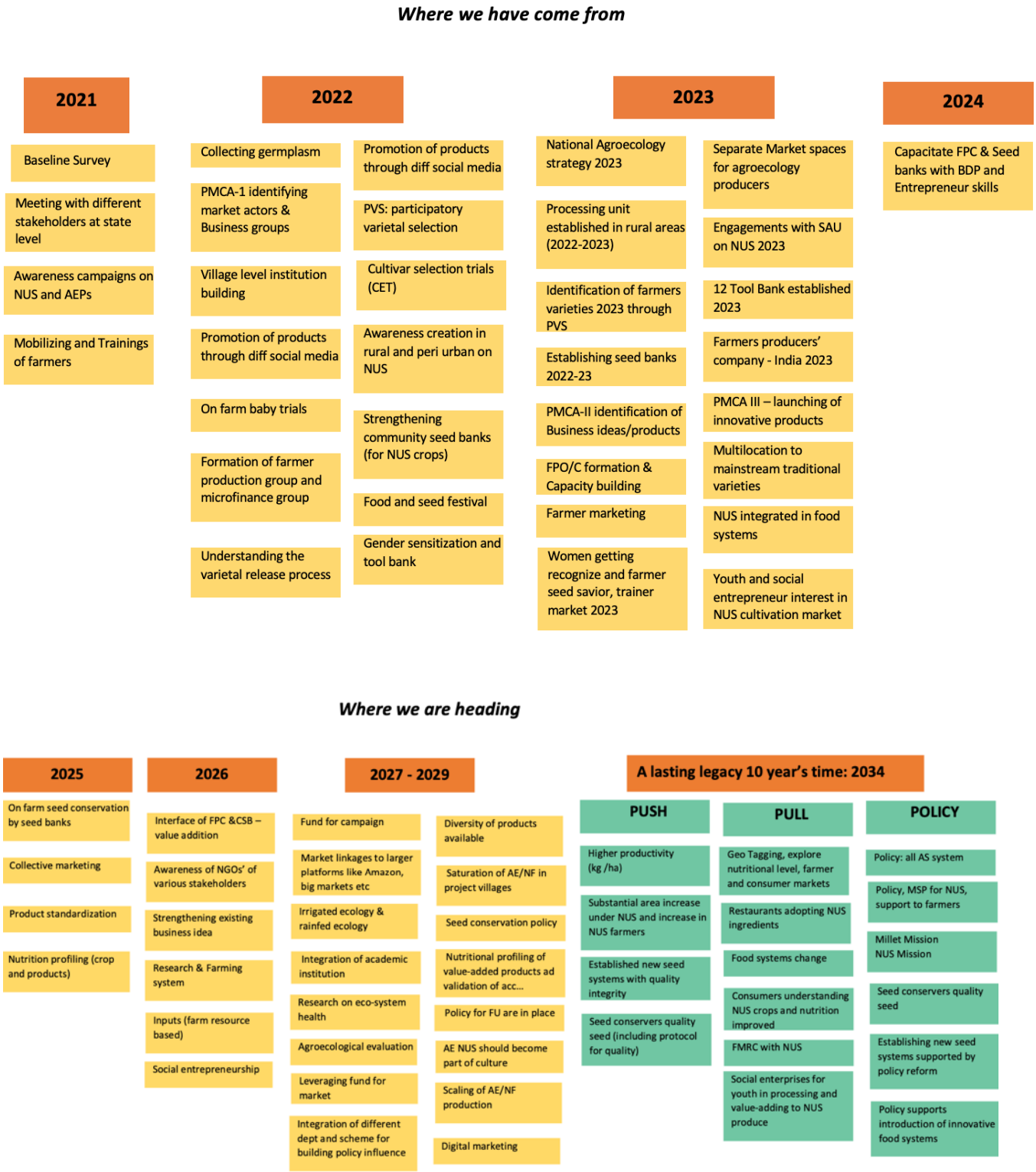


FIGURE 8: Summary of the "timeline review" activity that was undertaken as part of the Shared Solutions Workshop for India and Tanzania.

1.8 India workshop activity 2: identification of project challenges and opportunities

FIGURE 9: Summary of the identified challenges and opportunities for India and Tanzania.

1.8 India workshop activity 3: priority challenges and opportunities; actions for implementation

PUSH CHALLENGE

How can we improve availability of quality inputs that support

- Funding support from Government and FiBL- PVS, PPB, R&D, DUS
- Capacity Building- institutional, farmers groups, seed monitoring and coordination, seed purchase
- Linkages locally including seed bank, FPOs/ SHGs/ Village institutions.
- GAP Analysis: identify demand, technical, financial.
- Linkages State and nationally; NARES, National Missions
- All India Coordinated Research Projects
- nutritional profiling, product R&D
- International linkages such as CGIAR institutes (Bioversity International, World Veg Centre and others), FiBL, SWISSAID

PUSH OPPORTUNITY

How best can natural farming be integrated into farmer's varieties and NUS crops?

- Identification of suitable crops, varieties and cropping systems through focussed group
- Selection of suitable agro-ecological niche for natural farming
- Selection of champion farmers/volunteers and farmers communities
- Collection and testing of seed under natural farming conditions
- Identification and interface with multi stakeholders to develop linkages estimating size of market
- Conduct trials of selected varieties and also package of practices
- Selection through PUSH (for 3-4 years) and demand estimation
- Large scale seed multiplication and conservation by CSBs
- Cross learning through farm visits, etc.
- Establishing quality seed banks
- Capacity building on value addition and management of CSBs
- Scaling up of whole package of practices
- Organize seed and farm festivals
- Integrating infrastructure and input support
- Development of IEC tools / materials and disseminate to farmers and stakeholders

PULL OPPORTUNITY

How best can social entrepreneurship for youth and women be best developed?

- Developing common understanding of the staff on social entrepreneurship
- Identification of business ideas through participatory process with community and market survey, demand assets
- Selection of potential youth and women (individual and groups)
- Capacity building of SE through experts and master trainers
- Support and leverage resources and technology, linking them with market, incubation and start-up capital
- Facilitate the exchange of ideas and create platform for experience sharing
- Working with policy actors to support social entrepreneurship
- Monitoring of social entrepreneurship and providing handholding support
- Initiation of business idea

PULL CHALLENGE

How can we develop a clear approach towards creating an ecosystem for behavioural change?

- Demonstration of practice change (field day, community dissemination, exchange-exposure, handholding by key actors)
- Documenting need for change (what and why)- farmers perspective
- Participatory identification of influential / champion/ leader farmers
- Exploring diversified resources (human, finance, local materials)
- Capacity building / empowering of the key actors
- Communication strategy development for behavioural changes

POLICY CHALLENGE

How do we fully capitalise on the wide range of partner skills, capabilities and resources?

- Mapping skills, networks, areas of influence with partners
- Mapping and prioritisation of opportunities at different levels
- Developing a clear strategy
- Working with state agricultural universities and KVKs to train agriculture department officials on agro-ecology, nutrition and NUS
- Creating bottom-up pressure from different farmers institutions
- Adequate human resources for policy work for all partners
- Clear allocation of and responsibilities among partners

1.9 India workshop activity 4: analysis of observations and sharing of experiences

1. Impact and Practice Change

- Successful integration of NUS crops and agro-ecological practices
- Awareness of women farmers on family health and nutrition
- Improvement in soil fertility
- A well-functioning integrated farming system
- Increase in income
- Saving on inputs
- Promotion, packaging and labelling of seeds
- Promotion, packaging and labelling of seeds
- Increased production, sale and use of fallow lands
- Diversity of bio inputs

2. Project implementation, communication and engagement

- Community seed bank influencing local seed systems
- Market committee as active stakeholder and owning the process of market of agro-ecological products
- Value addition units of lesser yam dumplings
- Two way communication was visible in the study area between implementing agency and the farmers
- Participation as participants, as trainers, engaging in planning and execution of activities (farmers expressed they received support as inputs, training, etc)
- Need to take more feedbacks from the community from multi stakeholders for design of activities
- Effective implementation by community

3. Integration of PUSH, PULL and POLICY

- Research required for demand assessment (multi agencies)
- Product positioning and placement
- Finding convergence within existing policy-project component
- PUSH evidences must compliment PULL component
- Low awareness among the beneficiaries
- No research on products
- Seed collected and sold at community seed bank to farmers
- Sale at the farmgate
- NUS produce marketed in local markets

4. Integration of cross cutting themes

- Strong women participation in individual farmers institutions (FPC, Seed bank, processing unit, rural haat, farm trials)
- Project focusses more on young women than men
- Need to enhance entrepreneurial opportunities and income generation to achieve young men's participation (value addition, etc)
- Project compare climate change practices with agro-ecological practices (bio-inputs, agroforestry, local seed varieties)
- High awareness about climate change effects
- Local seed varieties popularising lablab beans; requires less water

5. Out scaling and future project legacy

A place for marketing in the Rural HAAT to create a niche for self, create awareness, have strong linkages with the consumers, showcase products and make them accessible to people.

Farm Gate level direct marketing to increase visibility and transparency, accountability

Provide recognition

Champion farmer extension mechanisms as part of out-scaling strategies

The good agricultural practices/ agro-ecological practices / management practices (mixed multi-tier, poly cropping, etc)

Integration of agro-forestry, livestock, fishery, crop rotation into the main cropping system

Selection of potential cultivars, suitable to that agro-ecological zone (increased bio-diversity, food diversity, nutritional security)

The project provides ample opportunities to farmers to have nutritious food and have additional income.

6. Working with stakeholders, issues and solutions

Visit to farmers fields, Farmer Producer Company, rural haat, processing units.

Collaborators: DRCSC, SWISSAID, FiBL, State Department of Agriculture, market committee, etc

The different organisations were working well but need to get others onboard.

Within the limited budget and other resources, we can have KVKs, State Agricultural Universities, NGOs, processing industries, market players, seed agencies working together

1.10 India workshop activity 5: project assessment matrix self-assessment (DAC criteria)

As part of this activity, workshop participants undertook a self-assessment in relation to the CROPS4HD project evaluation criteria framework. Each group had a specific set of questions to address these being relevance; coherence; effectiveness; efficiency; impact and sustainability. A summary results are presented for India and Tanzania.

1. Relevance of the project

- The project is addressing the issues like food security, dietary diversity, income generation, identifying local and resilient cultivars, market development, agro bio-diversity, soil health management, women leadership, policy support for farmers varieties and local market development, drudgery reduction
- Healthy soils
- Social: women participation learning new skills and techniques, recognition of women farmers for bringing back neglected crops / varieties
- Economic: focus of enhancing income and building sustainable livelihood
- Women participation and decision making in different institutions
- Awareness about balanced diet and nutritional benefits of crops
- Evidence: integrated farming system, with rich crop diversity, knowledge of farmers on AE practices, family health and nutrition, existing of well-functioning village level institutions, establish separate market place, processing units, sale of seed and products
- Building of traditional knowledge
- Environment: promotion of agro ecology, agro-biodiversity, identification of resilient cultivars
- Engagement with market committee
- Establishing mother and baby trials

2. Project coherence

- **How well the PUSH, PULL POLICY link together in an integrated manner, do any gap exist that should be addressed?**
- Need for interface between community institution
- **Do partnerships between organisations at national and international factors in the complexities and dynamics of relationships?**
- Yes, there is common orientation and integration of partners , team, community institution are also in place and project has supported too for the same
- Open communication and trust amongst various organisations that support approach:

  More efforts are needed on this aspect
- Broadening the scope of FPOs marketing across urban, peri urban areas.
- GAP: Integrated planning with FPC, CSB and local organisation (NGO, SHG)
- There is a need to have more result sharing with policy partners
- Need for sharing the research trials results with farmers and policy makers
- Orientation with government programs, schemes, support for project activities
- Strengthening relationships with government departments

3. Project Effectiveness

PUSH	Participatory selection of mother and baby trials	Participatory plant breeding	Trials conducted through AE approach (11 number; 20 MT, 50 BT)
	Agro-ecological approaches	Nutritional profitability (crops, products)	PPB (2024) for food and nutritional security
PULL	PMCA, promotion, awareness campaign, food system: national campaign	Making NUS products available to consumers	Transformational food and production systems for rural and peri-urban
	Promotion and creation of FPCs	Consumers outreach, creating market linkages, aggressive marketing approach for products,	Respecting agro-ecological production systems
POLICY	Alternative seed systems including seed quality standards (FPCs/ farmer level)	Alternative cropping system	Integration of local community direct marketing
	Bottom up approach: farmer as central partner	Clear expectation of policy advocacy team from on ground team	Women and youth empowerment

4. Project Efficiency

How efficient are resources being used?	Human resources: small team having large program deliverables	Finance resources; leveraging with local sources, e.g. separate market space, FPC own mother trials.	Matching project contributions (in-kind)
Proper planning and allocation of resources	Minimum travels, use public transport	Using on-line meetings	Proper utilisation of machinery and infrastructure
How can we optimise project resource results and impacts?	Delegation of tasks and power, responsibilities	Coordination of PUSH, PULL, POLICY activities	Monitoring of planned activities
Is delivery occurring in a timely manner?	Some activities like FPCs need more time as it depends on others too		

5. Project Impact

What difference interventions are making	Agro-biodiversity	Direct marketing- individual HH level, improvement of income (through FPC it will take time)	Women empowerment (knowledge transfer, participation in the community)
	Nutritional security/ diversity	Social capital build-up	
Where is the evidence to demonstrate impact, how is it being measured and documented	MIS in India, SUFOSEC and TAPE in Tanzania and India	Case studies	Photographs and videos
Are the impacts factoring in gender inequality, women and youth engagements, climate change, DRR elements?	Partially: gender inequalities in women participation, inadequate youth engagement, climate change and DRR elements		

6. Project sustainability

Key elements have been identified, foundation laid, but more time is required for strengthening community institutions, farmer managed seed system, engagement with government officials for policy issues	Upscaling and involvement of farmers in production and market linkages	NUS crops should be integrated with major crops	SHGs, CSB, FPOs; strengthening and capacity building, empowering them to influence and negotiate
	Sharing of household responsibilities and farming	Learning process and evidence based approach in PUSH, PULL and POLICY	
	Working with international organisations to access additional skills and expertise	NUS opens interest among stakeholders and line departments, conceptual clarity	Organisational: brought traditional practices in light (old wine in new bottle), establish consumer data base, financial management, food communication and documentation, planning
Understanding new PMCA methodology and stakeholders participation	Community institution: organisation management skills, leadership development, working on market development, quality control, networking, finance management	Learning on new packages of practices of NUS crops and seed production	
Learning new research methodology and approaches		Data collection (scientific) trials	Personal- advance techniques, national and international exposure, team work, personal relations, and networking, taking criticism
Community based organisation / agro-ecological approaches, gender and data management	implementation and monitoring	Transition from conventional approach to business development and sustainable ecological development	Learning new market approaches
	Resource mobilisation		

1.11 India workshop activity 6: developing Shared Solutions; priority actions

The focus for activity for each of the 5 groups, together with the key questions that each were asked to address (according to the specific challenge/opportunity) are presented.

GROUP A: Scientific based integrity

1. How do we ensure that the NUS crops and agro-ecological systems are based on validated evidence backed by field research and on-farm demonstrations?
2. How can we ensure NUS/farmer developed varieties undergo field trials and nutritional testing in the future?
3. How can agro-ecological constraints be addressed through on-farm research and integrating farmer experience?
4. How best can economic assessment and validation underpin recommended practice change?
5. How best can scientific integrity address climate change?
6. How do we develop a strategy and approach to achieve the above outcomes?

Citizen science:

- Screening of germplasm for abiotic stress
- Mother trials
- Screening of AEP
- Agronomic screening of germplasm and for climate resilience
- Address AES constraints
- Adapt to climate change

Promote best practice aspects that include:

- Competitive initiatives
- Exposure visits
- Provide recognition
- Professional facilitation of activities
- Seed maintenance and integrity
- GI tagging development

Behavioural research to identify best practices and intervention methods

Economic research focusing on cost-benefit analysis for each on-farm

Comparative analysis

- Economic research comparing the existing systems with the new innovative systems.
- Evaluate and document

Base-line farmer surveys to assess existing costs of current practices such as cultivation, sowing, harvesting and agronomic management

Collectively, all of these elements are underpinned by evidence based and defendable research, that in turn contributes to sound policy making and reform

SUMMARY OF KEY RECOMMENDATIONS

1. More intensive research trials on new NUS with AES specific PoP standardization, DUS characterization; nutritional profiling of potential cultivars to create evidence based documents for policy influence, GI tagging or notification.

2. Screening of biotic and abiotic stress tolerant local germplasm for each AE zone targeted in collaboration with local, national and international agencies and strengthening the local linkages.

3. On-farm testing of potential cultivars as well as AE package of practices through citizen science approach, document best practices.

4. Cost-benefit analysis of each package of practices at on-farm level.

Group B: Achieving transformational change through out-scaling

1. How do we achieve transformational change through the adoption of NUS crops / farmer varieties / AE farming practices through an out-scaling approach (e.g. from 10,000 farmers to 1,000,000 farmers)?
2. Focus of discussion relating to (1) key project elements of how we will out-scale and (2) NUS / farmer seed

RESOURCING

- International funding and coordination support
- Government schemes and programs
- Leverage from CSR funds

PUSH

- Promote AE practices in farmer's networks
- Promote NUS varieties through seed banks with farmer's networks
- Leverage of participation in government schemes that support AE systems

PULL

- Collaborate with retailers for demand generation NUS crops
- Upscaling marketspaces through FPC networks
- Support entrepreneurs to establishing seed and input centres

POLICY

- Partner with KVK and focus on AE and scaling up of extension services
- Policy reform to support market upscaling
- Establishment of biodiversity, AES incubation centres
- Development of innovative practices and extension services

Timelines for implementation

SHORT TERM 1-2 years

- Promotion of AE practices through regional networks
- Collaborate retailers for demand creation

MEDIUM TERM 3-5 years

- Upscaling of farmer's markets through policy intervention
- Promotion and establishment of seed centres and input centres

LONG TERM 8-10 years

- Partnerships with KVK's to assist in scaling up of AES

SUMMARY OF KEY RECOMMENDATIONS

1. PULL: Upscaling separate market space through farmer's network and FPCs.

2. PULL: Promotion and upscaling social entrepreneurs for establish seeds and bio input centres.

3. PUSH: Upscaling agro-ecological practice and seedbanks through participation and joining in farmer's networks.

4. POLICY: Upscaling of farmers market through policy intervention at district and state.

GROUP C: Developing a behavioural change ecosystem

1. How do we create an ecosystem for achieving major behavioural change?
2. Why is behavioural change required?
3. What will be the approach; the steps, the tools, methodologies, who to engage with, who will support actions?
4. How will we work with, and engage organisations?
5. How will we measure behavioural change?
6. How will influence behavioural change elements of KASA (knowledge, attitudes, skills and aspirations) of actors?
7. How best to integrate a F2F (farmer to farmer) learning model?

1. Why is behavioural change required?

- The World is changing.
- The decision making of the community is influenced by tradition, culture and experience.
- The community is brainwashed to believe in conventional systems (as being the only way and is not true). The influence of the Green Revolution.

2. What will be the approach, the steps and methodologies? Stakeholders and beneficiaries will be involved in following steps;
1. Document the needs for change (what and why?)
2. Participatory ID of influential actors (farmers, leaders)
3. Capacity building of influential actors
4. Mapping resources required
5. Demonstration of proposed changes
6. Access and availability
7. Communication of strategy and dissemination

3. How we will work with organisations:

- Capacity building
- Networking across common platforms

4. How we will measure behavioural change:

- Develop a map of impact assessment (eco-tools)

5. How will we best influence behavioural change elements? Participatory approaches;

- Community engagement
- Build capacity
- Use early adopters to create a model
- Motivation and dissemination

6. How best to integrate a F2F learning model?

- Participatory identification of champions or lead farmers
- Support capacity building activities
- Facilitate the lead farmers to address logistics, motivation, demonstration, exposure visits
- On-going monitoring to assess impacts

SUMMARY OF KEY RECOMMENDATIONS

1. Identify major challenges and the underlying socio-cultural factors in the community and how they impact the project outcome and outputs.

2. Self-assessment and/or reflection on the approaches and policies applied in the project (what effect do they have on addressing the identified problems)

3.Map and allocate required resources needed, pilot the behaviour change approach

4. Integrate the behavioural change approach in the project planning and implementation. (phase II)

GROUP D: local policy development

How do we influence local policy development that is supportive of the following elements;

1. Traditional and NUS seed and food production systems and improved marketing systems by farmer
2. Establishment of local market facilities
3. Supportive of PMCA and value-adding products (quality, product integrity and food safety considerations
4. Identify and describe what is required, how we will go about it in terms of the specific steps and approaches.

Panchayat (village level)	Block level	District level	State level
Key stakeholders include: • Peri-urban and urban community seed banks • SHG Bio inputs • RBK and RSK • ICDS and MDM	Key stakeholders include: • BDO level • ADA • Hort • AH and industry • Block chairman • ATM personnel	Key stakeholders include APMC, ATMA, RMC, DAO, DAHO, DHO, DIO and KVK	Ley stakeholders include MOA, PS, Director, Universities (VC), nodal people
Advisory development and use of minor and NUS crops	Farmer training centre / FPC; interaction with the market committee for allocated spaces	Storage market space	Integration of indigenous knowledge in PKBY, millet, NF, rice-fallows
Space for market infrastructure, vermi-pits	Tribal development programs	Linkages to existing schemes including DEO schools, farmer associations, FPC model.	Harmonisation of agro-ecological systems
Livestock integration	Leadership champion development	Technology transfer model, demonstrations of NUS	Buy back and MSP declaration of NUS crops
Participation for AE input demand and market development	KVK technology transfer, demos' inputs	Data base AE and NF farmers	Subsidy in processing unit elements
			Crop Insurance

SUMMARY OF KEY RECOMMENDATIONS

1. Work plan to include Specific awareness workshops and meetings on policy actions at Panchayat, Block, District, State level with identified 'Influencers' both in Current and next phase of the project.

2. Understand, augment and plan to link CROPS4HD project activities with ongoing relevant research and development projects at all levels.

3. Seed drives the agricultural policy: develop state-specific seed policy intervention plan to promote eco specific, resilient and nutrient dense traditional NUS crop, fish and livestock breeds/ varieties.

4. Plan agroecology driven market interventions including processing, value addition and branding opportunities at farm-gate, local and regional markets to enhance income and household nutrition.

GROUP E: price, promotion and perception

1. How can we best support communities in the marketing of NUS crops and products by developing a clear market differential of products through the following considerations;
   - Understanding consumer behaviour and demand
   - Building consumer trust
   - Influencing changing food habits
   - Developing a value proposition for the specific products (benefits and advantages)
   - Developing communications and promotional tools
2. How will we achieve the following elements?
3. What specific steps and approaches are required?

Developing communication and promotional tools through:

- Content development for different target groups
- Nutritional education
- Social media, mainstream media, physical campaigns
- Social entrepreneurs, private partnerships
- Participating in different events

Consumer trust through:

- Branding and packaging, licencing, trademark, registration and labelling
- Organising producer - consumer interface
- Regulating the use of labels
- Product testing

Understanding consumer behaviour and demand through conducting consumer research at different food systems

Influencing changing food habits through:

- Agroecological promotion and business councils
- Private sector partnerships
- Public sector partnership
- University and innovation incubation centres
- NUC ambassadors and influencers
- Doctors, nutritionists, primary health care workers, religious leaders

Developing a value proposition for specific products (defining the benefits and advantages) through:

- NUC nutritional profiling
- Scientific evidence on the perceived medicinal value (linking NUS benefits to specific diseases

SUMMARY OF KEY RECOMMENDATIONS

1. Intensive consumer research at different food systems

2. Branding, labelling, Licensing for Food safety of products based on different marketing systems and regulating this process by setting up Regulatory Board for labelling.

3. Awareness involving different stakeholder- Doctors, Religious Institutions, PHC workers, nutritionist, social media, radio programs, etc. involving famous personalities as ambassadors for NUS products.

4. Collaborating with Public Sector and Private sector for product incubation and product promotion.

Appendix IV: Project field site visit summaries

Following the Shared Solutions workshop, additional visits to project implementation sites were undertaken by the appointed National Consultants (for Chad and India). This provided the opportunity to explore in detail some of the additional field activities that has been delivered through the project. A summary of these observations are provided in further detail in Appendix II and III.

1.1 India site visits to Odisha region

An evaluation of project related sites in the Odisha region took place from February 13-14th 2024. A range of diverse activities were visited, showcasing the project's multifaceted approach to rural development. Key highlights are summarised;

The visit to the Ahimsha Community Seed Bank revealed an impressive array of 376 varieties across 20 crops, emphasising the importance of crop diversity preservation amidst challenges like climate change and seed quality. Engaging interactions with AE farmers highlighted innovative farming practices and livestock integration, underscoring the project's commitment to sustainability.

Discussions with stakeholders on green gram trials and a visit to the Maa Samaleswari SHG Millet Processing Unit showcased initiatives fostering entrepreneurship and value addition. This evaluation reinforced the project's holistic approach towards agricultural development, encompassing seed conservation, sustainable farming practices, and support for local enterprises.

A visit to the Maa Samaleshwari Seed Saver Committee at Burda Village focused on crop diversity mapping activities together with safe storage practices (preserving 68 accessions across 23 vital crops). Participatory research trials conducted by local farmers including Jaysingh Kalo, Trilochan Naik, Jadhab Biswal, and Sukal Bhoi showcased the experimentation with multiple cultivars of horse gram, cow pea, black mustard, and mung bean. This typified a collaborative approach to agricultural innovation between farmers and project partners. It is noted all farmers visited were male.

A seed diversity exhibition was attended in Chhamunda Village, where discussions were held with seed savers and producers. These activities underscored the project's commitment to grassroots-level engagement and the preservation of agricultural biodiversity, laying a solid groundwork for sustainable rural development in the region visited.

Recommendations

PULL

1. Branding, packaging, nutritional profile and standardization of products would be of significant benefits for marketing.
2. Access to machines for product making for uniform size and content as they prepare the products manually.
3. Develop promotional material for social media would assist in forging increased market demand. Facilitating market reach in local as well as urban markets is also required to boost markets.
4. The Farmer Producer Companies (FPCs) require support through training and capacity development programs to help build their skills and capabilities.
5. Developing Business Models for specific FPCs is required to ensure a sustainable model.
6. Strong linkages with different institutions having expertise in product development, business models, marketing, FPOs, product promotion.

PUSH

1. To get more volume of raw material, adopted villages need to develop technological interventions that increase the availability of inputs at cost-effective pricing so that they are more cost-effective (and consistent quality).
2. Strong linkages with different schemes of central and state government is required.

3. Most areas in this part of Odisha is rainfed, therefore, irrigation infrastructure is required.
4. Seed collected by different farmers is contaminated with other species, quality seed parameters and training need to be developed.
5. There is need of seed processing units and seed certification process.
6. Standardised packages of practices for AE approaches are required.
7. Efforts need to be made to maintain seed quality through improved storage facilities; as there are no storage facilities resulting in poor quality grain that in turn impacts on seed germination.

POLICY

1. Create a database of different initiatives to convince policy makers at all levels of governance.
2. Create a separate space for marketing of products in local as well as urban markets in government and main markets.
3. Characterisation of landraces collected from different villages before these are provided to farmers for production and sale.
4. Capacity building of different implementing partners particularly product development, product nutrition, packaging, shelf life, etc.
5. Policy needs to help create demand of products in the market.
6. Duplication of work (cultivar evaluation trials conducted for government officials duplicates the existing mother and baby trials) by both PUSH and POLICY group needs to be resolved.
7. The project villages are located in deep forests. Fencing (solar) of fields is required to save crops from elephants, wild boar, monkey, other wild animals.
8. Transport facilities required to sell products in the local markets.

In conclusion, the project should focus on addressing infrastructure needs, capacity building, policy advocacy, promotion of local enterprises, and fostering collaborative research and knowledge sharing to ensure continued progress and performance improvement.

1.2 Chad site visits to the Doba region

Various project sites were visited on the 23rd-24th February. Highlights from this visit are provided.

Groupement de Femmes Transformatrices MENDA

Discussions were provided in relation to a range of training courses relating to composting and production of crops (including NUS crops). There are a total of 18 products that are produced. The need to provide additional training relating to marketing was identified. Current training is provided to women's groups affiliated with CELIAF. The project initiatives are supported by organisations such as CELIAF and BELACD, who are both SWISSAID implementing partners.

The group are confident that with improvements in their packaging of their products, they will be able to attract greater demand from an expanded customer base for product sales. Their marketing strategy is to maintain a higher price for products, rather than having to discount price for otherwise unappealing products (and packaging). The addition of a processing unit would be a welcome addition that would allow them to boost their output and production over the next 5 year period.

Groupement Feminin Espoir (GFE)

GFE are focused on processing of 12 agricultural products . They have also established a sales point (through the CROPS4HD project) where they sell a total of 20 products (including NUS). Through the project, their members have received training in food hygiene, which has assisted in their products developing a reputation for quality. Additional training on processing has been provided, with women engaged in the project becoming self-employed and more able to support her family. The increase in household income has allowed them to invest in livestock production. The group consider that there has been a good level of integration between push and pull components.

In order for the group to expand their operations they have identified the need to secure a plot of land to establish a processing unit. They also have a vision of establishing sales outlets across multiple sub-regions, in addition to continuing with their original GFE packaging of products.

Cacopa Miandoum (Bendjono Village)

The group have been active in undertaking composting activities and the use of pesticides. The development of a seed bank is in its' early stages of development.

The group would like to see the type of groups expanded into market garden (vegetables), given that the majority of members of the group are women. There are limitations in terms of the availability of water for crop irrigation. The group have diversified into beekeeping and fish farming, with women taking on training roles. Group members are satisfied with the approaches to training and participation, in addition to the important (and recognised role) that women are playing in the group.

In terms of out scaling, the group tend to be focused on expanding bee keeping and fish farming, as opposed to expansion of NUS crops and products.

Cacopa (Nangkesse Village)

Activities have focussed on composting (and related training). Some senior members have been involved in formal "train the trainer" courses, to equip them with the necessary skills to train other farmers. Farmers have embraced AE farming principles (including the use of biopesticides), following the on-set of pesticide resistance in banana production. Market gardening activities (based on AE principles) have expanded amongst the group members.

In terms of expansion, the main limitation is the availability of suitable materials to produce composting. The provision of small livestock is seen as an opportunity to boos material inputs. There is some work with NUS crops (Moringa) which is providing a source of income for the sale of leaves and seeds. Amaranths and eggplants are gown for family rations.

In terms of required support, the group would welcome the provision of small scale faming equipment. Some groups also noted that access to animals for cultivation would also be valued. It is also considered that the Cacopa network could be expanded further through active engagement by producers in supporting others in neighbouring villages. Farmers adopting AE practices tended to be those farmers who have had production failures under traditionally accepted farming systems.

Summary

From the visit it is evident that the CROPS4HD project is supported by local authorities. The project's approach to demonstrating new practices (as a means of convincing farmers of the specific benefits) is working as a worthwhile approach to tempting them to try and experiment with the new practices. There have been demonstrated yield increases as a result of the adoption of AE practices (primarily composting) that has been claimed by those visited. The availability of raw materials for composting poses a major threat to future expansion of the practice by farmers.

1.3 Discussions with policy project team members

A Zoom session was held with a range of project delivery team members engaged in policy-related project work. This provided the team to provide an overview of the specific nature of their work, the types of activities they undertake, overall contributions to the project and the notable achievements to date. The participants were provided with several specific questions before the Zoom session, and were requested to respond to these questions during the interactive session.

General overview

- The policy group is made up of different partners across multiple countries.
- Online workshops tackling policy.
- Tend to have bilateral activities and engagement.
- Have objectives that are provided on an annual basis.
- Strong focus on farmer-managed seed systems through international policy review.
- Countries are being involved in policymakers – with farmer-friendly policies.
- The out scaling of the work is dependent upon food systems.
- Policy changes are required at national continental and international; so SDC investment needs to be focused. A stocktake on prioritisation is required to consider a country-by-country context.
- Central and West Africa Research (development commercial seeds) their level of funding is extremely high. We receive few funds. Sustainable food systems require additional support.

The understanding of farmer seeds in African countries.

- A greater awareness of farmer seed systems is now being considered at the government level.
- AFSA's achievements are evident in providing support to farmer organisations.
- CROPS4HD we are now developing linkages across different partners. So, in Niger, there are more than 25 organisations whilst there are 10 organisations both in Chad and Tanzania. All organisations collectively are active in trying to promote farmer seed systems and reforms.
- Development of position papers in Niger to help guide the MOA in policy reform. This is a slow and gradual process, with the "windows of government" gradually opening up.

Tanzanian situation

- Different policy activities with an engagement in the government.
- Farmer-managed seed systems are now being recognised in the national agricultural agenda.
- National agro-ecological strategy is now helping to guide agro-ecological systems in Tanzania lodged in 2023. The Minister will also develop a focus for agro-ecological farming as an alternative approach to conventional farming.
- Building seed banks and policy action directed at supporting seed bank policy reform and the farmers managing them.
- Identifying specific weaknesses in the "pull area", and how can these needs can be supported.
- In Tanzania, some support in terms of organic certification for farmers marketing their produce into the local markets and are also looking at certification of farmer seeds.

Community seed banks

- Seed banks operate in Latin America (example of policy interventions in operation).
- These are being established in the first phase and hopefully, this will gain further importance as the project progresses.
- AFSA and GRAIN need to do more campaigning to help sensitise consumers.
- Push and pull partners plan to support policy. The push and policy plan to have input and indicate to POLICY what need to be done and what reform is required. We are exploring unchartered waters in the project and so these elements take time.
- Some 60-80% of farmers source seed from other farmers; this has been identified through this project and is different to traditional thinking. Therefore, policy reform is critical.
- Community seed banks need to be developed in a sustainable and long-term manner, as opposed to policy makers thinking that they need to prop up seed banks.
- Research in mother and baby trials is providing evidence to policymakers in relation to the productivity of farmer-derived varieties (dispelling policy thinking that such developed varieties are unproductive; thus, providing the scientific evidence).

Governments In Africa are now demanding organic agricultural products

- Collaboration between researchers.
- Pan-African Seeds conference.
- Lock of interaction and collaboration across all sectors in Africa to support the outcomes.
- We are involved in supporting regional farmer's platforms across regional communities.
- Information is resented via webinars; for example, the African seed harmonisation and specific threats as well as awareness of-farmer managed seed systems and seed banks.
- This workshop was also attended by EU seed policy reps who have since invited farmer seed banks to other regional policymakers .
- Seed fairs (AFSA) are actively supporting the linking of farmers with policy makers and other influencers in regional areas. Slowly municipalities are gradually adjusting and supporting farmer seed markets and farmer sourced seed. Examples provided in Senegal, and now important to replicate similar initiatives across the four participating countries

Limitations in the policy focus

The question arises as to what degree are the team focused on delivering broader policy agendas, as opposed to delivering specific outcomes form the CROPS4HD and the SDC funding. It is recognised that activities tend to be focused on the biggest international seed policy issues that are not always directly related to the types of policy issues that are of concern to those delivery partners working locally with producers and other actors. The question arises to what degree would these "global" outcomes be achieved without an investment from SDC in their specific work that is more global in nature. Further to this, whilst recognising the importance of this work, such an investment may be better directed as a separate stand-alone project investment. This would allow policy input into the CROPS4HD project to be more closely aligned to the needs of farmers and local value chain actors.

Appendix V: Session plan Shared Solutions Workshop (Chad and India)

SHARED SOLUTIONS WORKSHOP PROGRAM

DAY 1	
Timing	**Subject**
9am to 9.10am	**Welcome to participants** Overview of the CROPS4HD project (objectives, methodology) Introduction to evaluator Prof. Jay Cummins
9.10am to 9.40am	**Introduction to workshop participants; Dr Amrit Riar**
9.40am to 10am	**Workshop introduction "setting the scene"; Prof Jay Cummins** (1) Overview of the MTR; purpose, outcomes and methodology (2) Workshop program content and overview (3) Workshop methodology and participatory approaches (4) "Housekeeping rules" for the workshop
10am to 11.30am	**Presentation by the country teams** (1) Overview of each organisation's role based on **PULL PUSH POLICY** framework. (2) Status of activities with examples provided from 2023 (3) Examples of demonstrated impact and achievements. (4) Self-assessment of achievements and "where things could have been done better" (5) Overview of future priorities and focus for their work 12 minutes presentation followed by 3 minutes of questions for each presenter
11.30am to 12 noon	**Morning tea break (30 minutes)**
12 noon to 1pm	**"Where have we come from and where are we heading?":** This exercise will involve the develop a timeline of activities (past and present) and set a future vision for the project as described by participants. Participants will be allocated to one of 6 groups.
1pm to 2pm	**Lunch break (60 minutes)**
2pm to 3.30pm	**CROPS4HD Project "Challenges and Opportunities": T**his group activity will identify and drill down into the project challenges and impediments to date. In this activity groups will focus on (1) identifying the challenges and opportunities (2) prioritising these in terms of importance and their focus according to PULL PUSH POLICY.
3.30pm to 3.50pm	**Afternoon tea break (20 minutes)**
3.50pm to 5.10pm	**CROPS4HD "Challenges and Opportunities" what actions can take place?**
5.10pm to 5.30pm	**Logistics and arrangements for Day 2** Small teams will be assigned specific roles for assessing the impacts and effectiveness of the project activities and stakeholder engagement. Teams will identify specific lines of questioning and observing, and assign specific roles and responsibilities in teams.

	Groups will be assigned one of the following “themes of enquiry”; **(1) Impact and Practice Change:** assess the impact and practice change that is being achieved at each of the site and organisational visits. **(2) Project Implementation, Communication and Engagement**; identify opportunities for improvement in project implementation, communication and engagement with the stakeholders targeted **(3) Integration of PULL PUSH POLICY**; assess the integration of these three key elements **(4) Integration of cross-cutting themes**; evidence of integration of cross-cutting themes of gender equity, women and young people participation and leadership, climate change and disaster risk reduction. **(5) Out scaling and future project legacy**; identify specific opportunities for out-scaling and leaving a “lasting legacy” for long term impact , including required resources. **(6) Evidence of cross organisational cooperation** Provide evidence of the different organisations who successfully work together on the project. Are there any relationships that should be stronger?
Day 2	
	Visits will represent current project activities and include markets, products processing, seed banks, policy people etc. Teams will report back on their specific observations and provide a key summary according to their theme of enquiry.
DAY 3	
Timing	**Subject**
9am to 10am	**Reflections from Day 2:** Participants will summarise the key “take-home messages” from the field visits; including the key achievements, specific challenges, the integration and linkages of PULL PUSH POLICY as well as unrealised opportunities.
10am to 11.00am	**Project Assessment Matrix:** Groups undertake a self-assessment in relation to evaluation criteria framework. (gender, climate and DRR elements will be integrated into all 6 group sessions): in the context of information presented, field visits workshop discussions and personal experiences.
11 am to 11.30am	**Morning tea break (30 minutes)**
11.30am 12.30pm	**Reporting back**; each group will present a summary of their responses to each of the questions they addressed. Time allowance; 10 minutes per group. Group 1: Relevance; Group 2: Coherence; Group 3: Effectiveness; Group 4: Efficiency; Group 5: Impact and Group 6: Sustainability
12.30pm to 1.30pm	**Lunch break (60 minutes)**
1.30pm to 2.30pm	**Developing Shared Solutions (small group sessions)** Each of the six groups will address the specific themes/issues identified for further investigation. Refer to E. Group Activity Instructions.
2.30pm to 4pm	**Shared Solutions Group Feedback**; groups will report back on their specific theme for investigation and responses to the specific questions posed. Timing; 15 minutes per group for reporting back.
4pm to 4.20pm	**Afternoon tea break (20 minutes)**
4.20pm to 4.50pm	**The next steps and future actions**; facilitated group discussion that will identify and summarise specific actions and commitments that participants will implement in the future. Priorities for the field visit (by the national consultant post-Shared Solutions Workshop) will be briefly discussed.
4.45pm to 5pm	**Closing summary and remarks**

Appendix VI: Summary visit to project sites to Odisha, India

Summary observations and recommendations from the Odisha Regional Field Visit (India) 12 -15th Feb 2024
Dr Randhir Singh, National Consultant

February 13, 2024: Project Evaluation Report

Partner: Bhittibhnumi, Odisha

Location: Bargarh and Gaisellete cluster (Bhuttibahal, Kathaumal)

Activity 1: Visit to Ahinsha Community Seed Bank
Establishment: The Ahinsha community seed bank and processing unit, established in 2008, serves as an example of agricultural diversity preservation.

Crop Diversity, seed storage and quality assurance: Housing an impressive 376 varieties across 20 crops, managed by a core committee of 17 members and engaging over 2000 individuals, the seed bank actively promotes crop diversity mapping and inventory. Rigorous quality assurance protocols ensure seed purity, including checks for physical cleanliness, germination, and freedom from pests. Seeds from the Diversity Blocks are stored in the centralized seed bank, while bulk quantities are distributed to farmers and seed producers for storage in their homes, ensuring decentralized accessibility and preservation.

Challenges and Needs: Despite its successes, challenges such as climate change impacts, seed production quality, and storage limitations persist. The project seeks infrastructural support for enhanced seed storage and capacity building initiatives for quality seed production.

Activity 2: Farm Field Visit and Interaction with Farmers
Farmers: Notable interactions with AE farmers, Satyadev Putel and Sushila Putel, showcased innovative practices including soil solarization, seed treatment, and bio-input preparation.

Crop Cultivation: Diverse crops such as bitter gourd, amaranth, and papaya were cultivated utilizing sustainable practices like line sowing and own bio-input preparation.

Livestock Integration: Integration of livestock such as goats and cows, along with the production of farmyard manure and compost, highlighted the holistic approach to farming.

Marketing strategies include direct farm gate sales and the establishment of a separate market created through project initiatives, ensuring efficient distribution and consumer access to project produce.

Activity 3: Multi-Stakeholder Interaction on Policy Issues and Crop Diversity
A crucial multi-stakeholder session convened, featuring KVK scientists, OMM staff, NGO representatives, and peasant organizations within the framework of the CROPS4HD Project. WASSAN's presentation on policy initiatives catalysed discussions on the synergy between push-pull strategies and policy frameworks. Notably, demo trials under policy frameworks were discussed, aimed at providing evidential support for policy advocacy. Objectives included identifying conserved landraces, addressing crop diversity conservation challenges, and characterizing community-conserved landraces. This session fostered collaborative dialogue crucial for informed decision-making and strategic planning tailored to the project's agricultural objectives.

Activity 4: Visit to Maa Samaleswari SHG Millet Processing Unit, Bhutibahal, Bargarh
Products: The Maa Samaleswari Self Help Group operates a millet processing unit producing millet cookies (sweet, salted) and multi-millet Chattua powder.

Branding: Products are branded under the Ahinsa Farmer Producer Company.

Market Reach: With 9 selling points across Bargarh, Padampur, and Gaisilet clusters, the products enjoy wide accessibility.

Processing Facilities: The processing unit utilizes advanced ovens and brick kiln ovens to ensure efficient production. The brick kiln oven have issues of maintaining temperature affecting the quality of products.

Summary: February 13, 2024
Our evaluation on February 13th, 2024, in collaboration with Bhittibhnumi, Odisha, encompassed diverse activities showcasing the project's multifaceted approach to rural development. Our visit to the Ahimsha Community Seed Bank revealed an impressive array of 376 varieties across 20 crops, emphasizing the importance of crop diversity preservation amidst challenges like climate change and seed quality. Engaging interactions with AE farmers highlighted innovative farming practices and livestock integration, underscoring the project's commitment to sustainability. Furthermore, discussions with stakeholders on green gram trials and a visit to the Maa Samaleswari SHG Millet Processing Unit showcased initiatives fostering local entrepreneurship and value addition. This comprehensive evaluation reinforced the project's holistic approach towards agricultural development, encompassing seed conservation, sustainable farming practices, and support for local enterprises.

February 14, 2024: Project Evaluation Report

Partner: BAIF, Odisha

Location: Burda, Bhatli, and Chhamunda Village in Jujomura Block, Sambalpur District

Activity 1: Visit to Community Seed Bank at Burda Village
Seed Saver Committee: The Maa Samaleshwari Seed Saver Committee, formed in October 2023, comprises 12 members from five villages, actively engaging 46 farmers. They undertake crop diversity mapping, inventorying, and safe storage, preserving 68 accessions of 23 crops.

Community Level Seed Production: The committee is instrumental in community-level seed production of 13 varieties across five crops, emphasizing participatory varietal selection and traditional storage systems.
The visit showcased activities encompassing crop diversity mapping, safe storage practices, and community engagement in seed conservation, cultivation, and promotion, along with efforts made on farmer training in participatory seed selection and varietal ranking.

Activity 2: Visit to Participatory Research Trials
Exploring trial farms managed by local farmers like Mr. Jaysingh Kalo, Trilochan Naik, Mr. Jadhab Biswal, and Mr. Sukal Bhoi provided insights into participatory research endeavours. These trials, focusing on crops including horse gram, cow pea, black mustard, and mung bean, demonstrated the collaborative approach to agricultural experimentation and knowledge dissemination within the community. Notably, Mr. Jaysingh Kalo's baby trials consisted of 3 cultivars each of horse gram, cow pea, and mung bean, while Mr. Trilochan Naik's mother trials showcased 8 varieties of black mustard. Similarly, Mr. Jadhab Biswal and Mr. Sukal Bhoi's trials featured 6 and 3 varieties of mung bean and cow pea respectively.

Activity 3: Seed Diversity Exhibition and Interaction with Seed Savers (Chhamunda Village)
Exhibition: An exhibition of local crops and their diversity from project villages, featuring 70 accessions across 20 crops, facilitated experience sharing among seed savers and producers. The event aimed to identify unique crop varieties conserved by communities, understand traditional wisdom about crop diversity, and address issues associated with conservation and promotion.

February 14, 2024: Summary
Our evaluation on February 14th, 2024, in collaboration with BAIF, Odisha, encompassed insightful visits to various villages within the Jujomura Block, Sambalpur District. The day commenced with a visit to the Maa Samaleshwari Seed Saver Committee at Burda Village, where we witnessed meticulous efforts in crop diversity mapping and safe storage practices, preserving 68 accessions across 23 vital crops. Additionally, participatory research trials conducted by local farmers like Mr. Jaysingh Kalo, Mr. Trilochan Naik, Mr. Jadhab Biswal, and Mr. Sukal Bhoi showcased the experimentation with multiple cultivars of horse gram, cow pea, black mustard, and mung bean, demonstrating a collaborative approach to agricultural innovation. The day concluded with a vibrant seed diversity exhibition in Chhamunda Village, facilitating experience sharing among seed savers and producers and furthering our understanding of traditional wisdom and innovative conservation practices. These activities underscored the project's commitment to grassroots-level engagement and the preservation of agricultural Biodiversity, laying a solid groundwork for sustainable rural development in the region.

KEY RECOMMENDATIONS:

PULL
1. Branding, packaging, nutritional profile and standardization of products.
2. Machines for product making for uniform size and content as they prepare the products manually.
3. Develop promotional material for social media.
4. The Farmer Producer Companies (FPCs) need exposure and capacity development programs.
5. Developing Business Models for specific FPCs.
6. Facilitate market reach in local as well as urban markets.
7. Strong linkages with different institutions having expertise in product development, business models, marketing, FPOs, product promotion.

PUSH
1. To get more volume of raw material, adopted villages need to be saturated with the technological interventions.
2. Strong linkages with different schemes of central and state government.
3. Most of the areas in this part of Odisha is rainfed, therefore, irrigation infrastructure is required.
4. One Partner in One District (OPOD) is desirable for better efforts.
5. Seed collected by different farmers has admixture, therefore, a sustainable mechanism is required to get pure seed.
6. There is need of seed processing units and seed certification process.
7. Standardized Package of Practices for Agro-ecological approach.
8. Quality supply of inputs.
9. Efforts need to be made to maintain seed quality as there are no storage facilities affecting germination of seeds.

POLICY
1. Create database of different initiatives to convince policy makers at local, district, state and centre level.
2. Create a separate space for marketing of products in local as well as urban markets in government and main markets.
3. Characterisation of landraces collected from different villages before these are provided to farmers for production and sale.

4. Capacity building of different implementing partners particularly product development, product nutrition, packaging, shelf life, etc.
5. Creating demand of products in the market.
6. Duplication of work (mother and baby trials) by both PUSH and POLICY group needs sorting.

MISCELLANEOUS

The project villages are located in deep forests. Fencing (solar) of fields is required to save crops from elephants, wild boar, monkey, other wild animals.
Transport facilities required to sell products in the local markets.

Overall, the project should focus on addressing infrastructure needs, capacity building, policy advocacy, promotion of local enterprises, and fostering collaborative research and knowledge sharing to ensure continued progress and performance improvement.

Appendix VII: Summary visit to project sites in Doba region, Chad

by National Consultant Mr Bianpambe Pallet February 23-24 2024.

Dates	**Feb, 23, 2024**
Location	**DOBA CITY**
Entities or persons met	**Groupement de Femmes Transformatrices MENDA**
Impact and Practice Change	The various training courses are well assimilated and implemented, we produce compost in seven (07) days for our crops and sell the surplus to other producers. We process transformation of many agricultural products, including NUS. Unfortunately, we use recycled packaging, which limits the market penetration of our products.
Project Implementation, Communication and Engagement effectiveness	A good approach that has enabled us to improve our NUS and agricultural product processing techniques, with more product ranges on offer (from 12 to 18 products), and more food hygiene. Areas for improvement : Training on conservation and marketing and other initiatives through study tours.
Integration of PULL PUSH POLICY	Supported by CELIAF and BELACD, both SWISSAID implementing partners. CROPS4HD activities are further implemented within MENDA through BELACD. Intercommunication Push - Pull collaboration. Shea butter extraction at SODEFIKA (Koumra)
Integration of cross-cutting themes	Training and activities as part of the synergy between women's groups affiliated to CELIAF.
Out scaling and future project legacy	We believe that with our own packaging, we will attract more customers and avoid set very low prices. We believe that in addition to having our own packaging, a Mini Processing Unit would give us a boost over the next 05 years. This will help us market our products and ensure that we have at least one point of sale in major cities.
Dates	**Feb, 24, 2024**
Location	**DOBA CITY**
Entities or persons met	**Groupement Féminin Espoir (GFE)**
Impact and Practice Change	We specialize in the processing of a dozen agricultural products. With CROPS4HD, we have a processing unit for; **a Sales Point** where we display a range of over 20 products, including NUS. Thanks to CROPS4HD, who trained us in food hygiene techniques, our products are better known and better consumed.
Project Implementation, Communication and Engagement effectiveness	The project's approach is convincing, as the effect is immediately felt, not only by the group, but also by the individual, who becomes a specialist through practice. The training courses on processing and the cross-fertilization between the different active groups in the project have created a knock-on effect, enabling each woman to become self- employed and to have a minimum for her needs and to look after her family. The dynamic created over the three years of the project has enabled each active member of the group to own at least one head of small ruminants (goats or sheep). Improvements are expected in the conservation of products, availability of original packaging for good marketing; An area dedicated to headquarters, offices

Integration of PULL PUSH POLICY	Accompanied by BELACD, we approached the Commune authorities and were promised a plot of land. It's proof that our authorities attach importance to our activities. Intercommunication Push -Pull collaboration is much more evident between the CELIAF antenna groups in Koumra and Goré, as well as some NUS producers around Doba.
Integration of cross-cutting themes	Through the synergy between the umbrella groups affiliated to CELIAF, we have received training in women's leadership and empowerment. This training has enabled us to integrate several young girls into the GFE, such as our daughter who is the Focal Point of our organization in Komé. All orders for oil site work go through her.
Out scaling and future project legacy	At our level, we have two options for extending and perpetuating the project's achievements: A plot of land dedicated to our organization and its activities (processing unit and processing of other products); Sales outlets in every sub region of Province Logone Oriental ; Original GFE packaging to attract customers and prevent customers from devaluing our products.

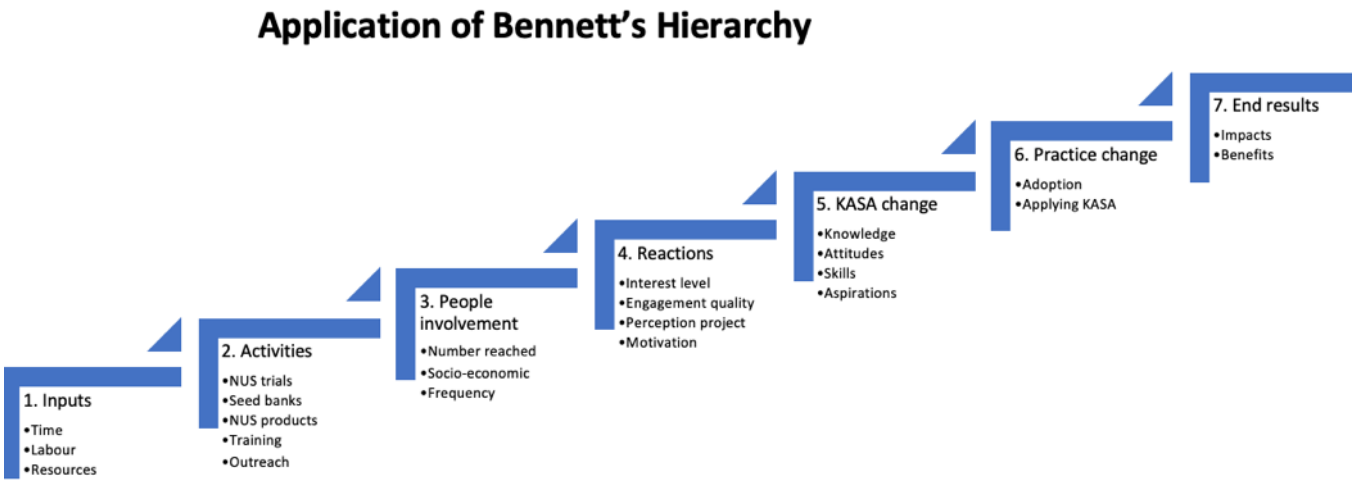
Dates	**Feb, 24, 2024**
Location	**MAÏKERI VILLAGE**
Entities or persons met	**CACOPA Miandoum**
Impact and Practice Change	Composting and the use of biopesticides have been well adopted and practiced, with remarkable added value for crops grown over the three (03) years. The impact is highly satisfactory. The Seed Bank is in its infancy, and is well appreciated.
Project Implementation, Communication and Engagement effectiveness	An approach that is much appreciated and justified by the results of the growing number of CACOPAs in a short time. Another possibility for improving the implementation of the project would be to take into account market gardening, an activity much practiced by women, who are in the majority in CACOPA. But one challenge is the mobilization of water for irrigation.
Out scaling and future project legacy	Market gardening would support expansion over the next few years, as it is practiced by a large number of women. The important thing is to : Meeting the challenge of insufficient water points for irrigation; Meeting the challenge of water drainage and protecting market garden perimeters from transhumant animals Support the seven- day composting system.

Dates	**Feb, 25 2024**
Location	**BEDJONDO VILLAGE**
Entities or persons met	**YINGHIRI Martine**: Local producer, promoter, processor and trainer of AE practices
Impact and Practice Change	AE practices, compost, have had an impact on the yield of my fields. Beekeeping and fish farming have also increased my income. Thanks to the CROPS4HD project, I'm in particular agricultural AE practices, in particular agricultural production using compost, have had an impact on the yield of my fields. Beekeeping and fish farming have also increased my

	income. Thanks to the CROPS4HD project, I'm known as a trainer in the Koumra area. I support three (03) of my children in higher education, two of whom are at university in Cameroon. My production more than covers my family's annual food requirements. I am fulfilled and honored.
Project Implementation, Communication and Engagement effectiveness	The project has a good approach that allows the learner to discover his or her own potential and supports him or her in taking the plunge and flying solo. The project brings together arrange of complementary players. The project has a good approach that enables the connection between the beneficiaries, which include producers, promoters and/or processors and consumers. In short, a perfect value chain.
Integration of PULL PUSH POLICY	I negotiated and obtained from the "Chef de Canton", a place for a sales outlet in view of my commitment and dynamism in promoting AE practices.
Integration of cross-cutting themes	I'm a woman trainer committed to promoting AE practices. I've trained over 100 people, so I've noted 45 women who have followed and put into practice my training. The Koumra CACOPA, to which I belong, is made up of as many women as men.
Out scaling and future project legacy	Looking at my own activities, I see scope for expansion in beekeeping and fish farming, namely doubling the current number of hives (from 06 to 12) doubling the number of ponds (from 02 to 04) and fencing them off from the oxen that destroy them in hot, dry periods.
Dates	**Feb, 25 2024**
Location	**NANGKESSE VILLAGE**
Entities or persons met	**Djelassem Francois**: Producer, promoter and trainer of AE practices
Impact and Practice Change	Starting with compost in 45 days, I benefited from the project the method to get a compost in 07 days, i.e. five times more compost in the same time. Having gained practical experience, I took the training of trainers' course With the Agricultural Advisors in Nov. 2021. From Nov. 2022 to January 2023, 113 people trained by me. Involved by my interest in the project's themes, I've been included among the producers carrying out AE trials by the project. I've also added new crops (Vandzou and Fonio) to my range of products, and the values of NUS are known and appreciated by my family. My history with biopesticides is that resistance to chemical pesticides by a pest on a banana plant led me to the use of biopesticides, which convinced me, and observation of their effects led me to understand the effectiveness of AE practices AE practices, composting in 07 days and biopesticides have boosted agricultural production on my farm. For me, no compost means no large area over the season
Project Implementation, Communication and Engagement effectiveness	Each one reproduces the concepts acquired during training. Supervision of trainees. Market gardening has grown considerably over the past three years, thanks to the compost used in off-season crops, so the impact is real at every level. Those who have adopted AE practices are farmers who have experienced agricultural failure due to the poor soils in this area.
Integration of PULL PUSH POLICY	Training courses are given by the implementing NGOs to a number of women in our canton. Processors in Doba and Ndjamena are in contact with me and place intermittent orders.
Integration of cross-cutting themes	For CC, the agro-ecological approach is the answer, and soil amendment with compost restores the soil and trees could also increase their useful density for the climate.

Out scaling and future project legacy	Expansion possible, but competition on raw materials as many are trained and many are already practicing. Difficult access to material, especially transport. Extension possible if each producer has at least one pair of zebus; poultry heads available. **Necessary resources** So we need to involve livestock farming in the project's practices. To reduce competition for organic matter, it would be a good idea to provide producers with small livestock. Or a few poultry and/or small ruminants for the start and producers to progress in conquering their autonomy in the face to competition on organic materials and they're of decreasing. In the NUS, there are many advantages, especially the Moringa, which provides regular income from both its leaves and seeds. Amaranths and eggplants are for the family ration. **Challenge:** in the trials, the results do not convince the growers in view of the volume of work. Support for producers through small-scale farming equipment. Intensify specific training to be at the same level as other CACOPA members. Synergy between producers can be an asset for expanding the number of CACOPA producers and villages.
Dates	**Feb, 25 2024**
Location	**NANGKESSE VILLAGE**
Entities or persons met	**CACOPA Nangkessé**
Impact and Practice Change	Yields have doubled: before 07 quintals on 0.5 ha current 16 quintals on 0.5 ha. The project has not yet really been implemented in Canton Nangkessé, but many producers have shown an interest in composting and everyone did the transplanting in their own fields. Without any real involvement of the project in the village, given the results of the practices popularized through CROPS4HD, many of the producers showed interest in the project's activities, and agreed to create CACOPA.
Project Implementation, Communication and Engagement effectiveness	Not yet a direct intervention, but through peer training and a convincing and successful visual effect, the techniques of composting and soil amendment through compost alone, will be our cultivation habits. One member co-hosts programs on AE practices on community radio stations, with a good listening rate among producers.
Integration of PULL PUSH POLICY	Not yet fully involved in the CROPS4HD project, we don't have any other exchange slots apart from our trainers who support us in composting practices and biopesticide production.
Integration of cross-cutting themes	With composting, the use of compost restores soils and increases tree regeneration, which is useful for the climate.
Out scaling and future project legacy	Individually and collectively, over the last 3 years, our areas under agro-ecological control have increased every year. We expect to recover all our leached soils through organic fertilization. However, there are challenges: lack of raw materials for composting; means of transport (of organic matter to and to the field), insufficient water points and rustic means of water mobilization **Resources required**: Pairs of oxen, 04 horses and carts; small farmer's equipment (wheelbarrow, rickshaw, shovels, rakes, etc.); Intensive training of members and extension of CACOPA.

Appendix VIII: Bennett's Hierarchy for achieving practice change



Application of Bennett's Hierarchy framework

The Bennett's Hierarchy framework is described as a logical progression of stages that a project endures from its resource base to achieving community focussed outcomes. The model has been used extensively in the agricultural extension field for many years, and serves as a useful model for describing the steps required to support capacity building and practice change (adoption) as part of managing project implementation.

The logic is based on the following presumptions: If you (1) have sufficient resources to undertake the right activities or processes; (2) involve the appropriate people (with the right skills and capabilities); (3) you achieve a positive reaction it can then (4) lead to desirable changes in Knowledge, Attitude, Skills and Aspirations which in turn (5) provides the basis for practice change (adoption of specific practices or recommendations) thus resulting in positive community/industry outcomes.

The framework can be separated into "internal project factors (Hierarchical levels 1 and 2); direct effects (hierarchical levels 3, 4 and 5) and broader outcomes (Hierarchical level 7). A range of specific objectives (and indicators) can then be linked to each of the stages as a means of assessing and monitoring the achievement of each of the steps in the framework, and in turn practice change and impacts/benefits arising from the interventions.

Appendix IX: Acronyms used in this report

AE	Agro-Ecological
ADA	Assistant Director of Agriculture
AH	Animal Husbandry
APMC	Agricultural Producer Market Committee
ATMA	Agriculture Technology Management Agency
BDO	Block Development Officer
CACOPA	Consultation Framework for the Promotion of AE Practices)
CROPS4HD	Consumption of Resilient Orphan Crop Products for Healthier Diets
CSB	Community Seed Bank
DAC	Development Assistance Committee
DAHO	District Animal Husbandry Officer
DAO	District Agriculture Officer
DEO	District education officer
DHO	District Health Officer
DIO	District information officer
DUS	Distinctness, Uniformity and Stability
F2F	Face to face
FiBL	Forschungsinstitut für biologischen Landbau
FPC	Farmer Producer Co-operatives
FO	Farmer Organisation
FPO	Farmer Producer Organisations
GI	Geographical Indicators
GIS	Geographical Information Systems
GPDP	Gram Panchayat Development Plan
GST	Goods and Service Tax
Hort	Horticulture
ICDS	Integrated Child Development Services (India)
JDA	Joint Director of Agriculture
KVK	Krishi Vigyan Kendra
ICDS	Integrated Child Development Service
OECD	Organisation for Economic Cooperation and Development
DDR	Disaster and Risk Reduction
MOA	Ministry of Agriculture
MDM	Mid-day Meal
MSP	Minimum Support Price
MTR	Mid-term Review
NF	Natural Farming
NUS	Neglected and Underutilised Species
PKVY	Paramparagat Krishi Vikas Yojna
PoP	Persistent organic pollutant
PSS	Principal Secretary of State
PVS	Participatory Variety Selection
RBK	Rythu Bharosa Kendralu (Farmer Assurance Centre)
RDE	Research, Development and Extension
RSK	Raitha Sampark Kendra (Farmer Contact Centre)
SDC	Swiss Development Agency for Cooperation
SHG	Self-help group
SUFOSEC	Sustainable Food Systems and Empowered Community
TOR	Terms of Review
VC	Vice-Chancellor