SIGMA Phase 1 External Review

Final submission

June 15, 2026

THE CANOPY LAB

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Acronyms

EQ	Evaluation Question
FGD	Focus Group Discussion
GESI	Gender Equity and Social Inclusion
KII	Key Informant Interview
MEL	Monitoring, Evaluation and Learning
MSD	Market Systems Development
PCN	Project Concept Note
PDN	Project Deal Note
PSE	Private Sector Engagement
SDC	Swiss Agency for Development and Cooperation
SIGMA	Sustainable Inclusive Growth in Mountainous Armenia

1. Executive Summary

This report details the findings of an External Review of the first phase of the Sustainable Inclusive Growth in Mountainous Armenia (SIGMA) programme, funded by the Swiss Agency for Development and Cooperation (SDC) and implemented by DAI UK in consortium with AMPERA. SIGMA is a four-year effort to create more dynamic markets systems, boosting incomes and growth opportunities for agricultural households in rural, mountainous provinces of Armenia.

SIGMA aims two achieve two main outcomes:

- Outcome 1: Farmers, small agribusinesses and tourism businesses increase their net additional income and employ more people.
- Outcome 2: Market systems of selected value chains are strengthened and favor sustainable and inclusive economic growth at national and local levels.

The review used a qualitative approach consisting of an extensive document review, a larger number of key informant interviews (KIIs) and several focus group discussions (FGDs) to gather and verify information about SIGMA's relevance, coherence, effectiveness, impact and sustainability. The intended audience for this review is the SDC, SIGMA implementation partners, the Government of Armenia and the programme's other institutional partners.

This review finds that SIGMA's Phase 1 has established a credible and often promising foundation for market systems development (MSD) in Armenia's mountainous rural areas. The programme is aligned with core agricultural constraints in rural, mountainous marzes and has generated early evidence of meaningful benefits for farmers, small businesses and some vulnerable groups. At the same time, Phase 1 also reveals important strategic and operational tensions that SIGMA will need to address if it is to move from a credible first-phase portfolio toward more systemic and transformative results in Phase 2.

Relevance: SIGMA is working on the right problems. Its portfolio responds to major constraints affecting agricultural production and rural livelihoods in the target marzes, including irrigation access, mechanization, post-harvest storage and technical upgrading. The selected value chains remain broadly appropriate, and the project's work is well aligned with both government priorities and farmer demand. However, relevance is uneven for some vulnerable groups, especially households with very small plots and displaced people with limited land access. Looking ahead, the main relevance challenge is not whether SIGMA has chosen the right sectors, but whether it can identify deeper leverage points (particularly around finance, equipment access, technical advice and market access) rather than remaining focused primarily on co-financing individual service providers.

Coherence: SIGMA fits well within the broader institutional and donor landscape and has maintained constructive relationships with government and development partners. Its climate-related interventions are generally coherent with market incentives, while its gender, equity and social inclusion (GESI) efforts remain more partial and incidental than strategic. The programme's policy engagement is positive but still ad hoc rather than guided by a clearly prioritized influence agenda. Likewise, complementarity across interventions is beginning to emerge, but it is not yet strong enough to show that farmers are consistently benefiting from integrated bundles of support. In short, SIGMA is well positioned within the wider context, but it needs a more intentional approach to policy influence, GESI integration and cross-intervention synergies.

Effectiveness: SIGMA has delivered a substantial number of partnerships and has shown that a co-investment model can generate uptake, leverage private resources and produce services that farmers value. Several interventions (notably cold storage, beekeeping, seed treatment and some irrigation services) are already demonstrating their usefulness and beneficiary satisfaction. At the same time, effectiveness is constrained by a somewhat lengthy partnership processes, a governance structure that is more cumbersome than necessary, and a monitoring system that is stronger on quantitative accountability than on adaptive learning. The project has also only partially applied MSD principles in practice – it has been effective at launching partnerships, but less effective at consistently designing for systemic change, embedding capacity-building functions in markets, or using tacit learning to make timely strategic pivots.

Impact: The review found persuasive early evidence that SIGMA is making a difference in the lives of target groups. Farmers report improved yields, reduced losses, greater resilience to drought, better timing of sales and, in some cases, increased investment in production. Cold storage and beekeeping stand out as especially impactful for women and other groups able to engage productively in those markets. However, the broader transformative impact of SIGMA remains constrained by the lack of scalability of some business models, especially those depending on expensive equipment. The programme is generating real benefits, but its ability to convert these into wider systemic effects will depend on whether Phase 2 can move beyond demonstration and address the enabling conditions for replication and commercial viability.

Sustainability: Many SIGMA-supported catalysts show encouraging signs of commercial viability, and demand for several supported services suggests that benefits can continue beyond direct project support. Nevertheless, sustainability is uneven across the portfolio. Some models appear financially promising, while others remain difficult to replicate without subsidy, particularly where technology costs are high or maintenance ecosystems are weak. Institutional sustainability is also still underdeveloped – SIGMA has not yet done enough to embed knowledge, technical assistance and innovation functions in local market systems or public institutions. The programme has established several plausible pathways toward sustainability, but these pathways remain incomplete and will require more deliberate attention to replication, institutionalization and market-based service ecosystems in Phase 2.

Overall, SIGMA's first phase demonstrates strong contextual understanding, credible early results and significant potential for deeper impact. The programme's main task for the next phase is not to reinvent its sector focus, but to sharpen its strategy. It needs to deepen its use of MSD, strengthen adaptive learning, address governance and process bottlenecks, and pursue the systemic enablers that would allow successful models to spread and endure. If these shifts can be implemented effectively, SIGMA is well positioned to become a more transformative driver of inclusive rural economic growth in Armenia.

2. Introduction to the Review

The SIGMA programme, funded by the SDC and implemented by DAI UK in consortium with AMPERA, is close to the end of its first phase (running from 2023 through November 2026). This point in implementation provides an appropriate opportunity to assess SIGMA's progress and consider strategic and tactical pivots that should inform the remainder of Phase 1 and the design of Phase 2.

The Canopy Lab was selected to implement this External Review of the SIGMA programme, which has three main objectives:

- Inform evidence-based decision-making and steering of the project, cooperation strategies, networks and policy dialogue for a steady increase in relevance, effectiveness, efficiency, impact and sustainability.
- Contribute learning to improve the quality and results of the interventions by gathering lessons learned on what works and what does not.
- Contribute to accountability through reporting and communicating the results of development cooperation to stakeholders and the wider public in Switzerland and abroad, including the target populations.

2.1: Background – SIGMA and MSD in Armenia

MSD programs have been implemented in widely varying contexts around the world, from thin markets hobbled by conflict to thick markets where program staff are spoiled for their choice of highly capable partners. SIGMA works at the more challenging end of that spectrum. Armenia's rural areas are mountainous, markets are fragmented, services are strained and local institutions are weak and still (in some cases) oriented toward the extractive patterns exemplified in post-Soviet economies.

Rural communities in Armenia are scattered across mountainous terrain, where weak road infrastructure and limited transport options drive up transaction costs and restrict market access. For farmers and small businesses, simply reaching buyers, suppliers, or service providers becomes a challenge. Seasonality compounds the problem: harsh winters can isolate villages for long stretches, disrupting supply chains and interrupting the continuity that MSD programs depend on to build trust and durable relationships.

Market scale and fragmentation present an additional layer of difficulty. Rural markets are small, purchasing power is limited, and many producers operate informally at near-subsistence levels. This makes it hard to aggregate supply or maintain consistent quality standards. Trust deficits (a common hangover over the post-Soviet environment) between farmers, traders, processors, and financial institutions further weaken value chains. While financial services technically exist, collateral requirements and perceived risk keep most smallholders excluded.

Institutional capacity constraints add yet another barrier. Local government bodies often lack the resources or technical skills to effectively support market facilitation. Extension and business development services vary widely in quality, and private sector engagement outside urban centers like Yerevan remains limited. High levels of seasonal and permanent migration drain human capital from rural areas, reducing entrepreneurial energy and weakening social cohesion. For MSD practitioners, this means the basics – relationship-building, capacity strengthening, and sustained presence – require substantial time and investment, often yielding slower and less visible returns than donors typically expect. This is hard work, in other words.

Against this backdrop, SIGMA is a significant SDC investment in rural development in Armenia, working to boost incomes and employment in the mountainous rural areas of Shirak, Lori, Tavush and Gegharkunik. The project has two main objectives, embodied in its two Outcomes:

- **Outcome 1: Farmers, small agribusinesses and tourism businesses increase their net additional income and employ more people.** Most of the results SIGMA can show thus far in the first phase belong under this outcome. The project built a comprehensive portfolio of interventions that sought to influence the performance of a wide variety of products and supporting services related to agricultural productivity, numbering 21 in total across six core market systems (grains, legumes, potatoes, fruits and berries, vegetables, and beekeeping). To pursue these interventions, SIGMA filtered an initial list of 87 potential partners down to 16, using a partner catalyst typology that it developed. These partnerships are already bearing fruit, with initial data indicating a 2.7x leverage ratio as well as positive outcomes related to improved livelihoods, increased employment and improved working conditions, and early indications of female empowerment.
- **Outcome 2: Market systems of selected value chains are strengthened and favor sustainable and inclusive economic growth at national and local levels.** This is a deeper, more long-term effort to improve the enabling environment, working through influencers across government and civil society to alter key policies and other constraints to the ease of doing business. Significant results from Outcome 2 have yet to manifest, but SIGMA expects that its efforts will yield results soon.

This review focused on evidence and learning yielded by its existing set of Catalyst partnerships while also gathering information about the potential impact of its ongoing efforts to influence the enabling environment around target market systems.

3. Methodology and Evaluation Questions

The review team conducted a qualitative assessment of SIGMA consisting of a document review, KIIs and FGDs with stakeholders.

The initial document review included SIGMA operation reports, SDC comments, formative research, project concept notes (PCNs), project deal notes (PDNs), SIGMA's monitoring, evaluation and learning (MEL) manual, and MEL records. Accompanying the document review, the team interviewed project leadership to discuss the project in broad themes. That initial stage resulted in an inception report which further detailed the methodological approach, refined the evaluation questions, and included the KII and FGD data collection tools, along with a finalized list of review participants.

The inception report was followed by two weeks of in-country data collection that included 33 KIIs (11 with catalysts, 10 with national, regional and local government representatives, 1 with representatives from other donors, 2 with other partners, and 9 with SIGMA staff). At the same time, to capture beneficiary perspectives, especially related to GESI issues, the team conducted 6 FGDs with beneficiaries (2 FGDs on irrigation, 1 FGD on seed treatment, 1 FGD with clients of a cooling facility, 1 FGD on beekeeping, and another beekeeping FGD including only women and members of marginalized groups). A 7th FGD was planned for SkyAgro beneficiaries, but that was conducted in a series of separate KIIs instead, for practical purposes.

At the end of the in-country data collection, the review team presented preliminary findings with SDC in a four-hour session. After that, the team conducted additional remote KIIs with other

development actors (WB, ADA and Giz) and program partners (AI4DA), in addition to interviewing a representative from DAI's headquarters to gain perspective on key findings and the programme's governance setup.

The review draws on the full range of evidence to compose the findings below. The documents and KIIs were relevant for addressing each of the 21 evaluation questions (EQs). Beneficiary input from FGDs was important for adding farmer perspectives to the findings. In all cases, the review team triangulated information between KIIs, FGDs and documentary evidence. The review team also followed up on emergent findings to visit additional informants (e.g., an irrigation equipment buyer in a nearby village who was said to have copied the SIGMA model).

3.1: Evaluation Questions

The table below details the SIGMA review's 21 EQs, broken up by OECD/DAC criteria: Relevance (3 EQs), Coherence (4 EQs), Effectiveness (7 EQs), Impact (2 EQs) and Sustainability (5 EQs). A table in **Annex A** shows the data sources used to address each EQ.

Table 1: Evaluation Questions for the SIGMA External Review

Relevance: Is the intervention doing the right things?
EQ1: Adaptive Alignment – Given the dynamic environment and the contextual changes, does the current agricultural intervention portfolio still address the most critical, binding constraints to the target market systems or are the interventions driven primarily by available catalysts?
EQ2: Targeting and Need – To what extent are the project's chosen value chains and intervention areas (e.g., the focus on the grain value chain) relevant to the immediate and long-term economic priorities of the country and the livelihood needs of the most vulnerable target groups? Which value chains and intervention areas are more critical to remain as a priority in Phase 2?
EQ3: MSD Rationale – Is the use of the MSD approach and private sector co-investment the most appropriate and relevant strategy, considering the documented market features such as the high degree of informality and the low financial transparency among potential partners? *Are any adaptations to the methodology warranted, given the socio-economic profile of the participants?*
Coherence: How well does the intervention fit the wider context?
EQ4: Policy Coherence – How effectively does the SIGMA project leverage its interventions to influence broader policy and regulatory frameworks (e.g., related to agricultural digitalization or financing), ensuring alignment with national government strategies and avoiding conflict with other donor initiatives?
EQ5: GESI and Climate Integration – Are the GESI and climate-resilience strategies conceptually coherent with the market's current incentives, or do they rely solely on project subsidy, thereby undermining the market-driven nature of the intended systemic change? What are the gaps in design, implementation structures, or resource allocation to ensure that recommendations are not only systemic but also practical? Depending on the answer, how can the project address these issues and/or further integrate GESI and climate-resilience strategies in its implementation to improve effectiveness?
EQ6: Green MSD – If the project should shift solely and fully to a focus on green economy in Phase II, what could be the implications, e.g. will other program objectives be compromised or will the project not be coherent anymore, etc.?
EQ7: Complementarity – To what degree can SIGMA claim that participants are able to access multiple lines of support? Is there evidence that complementarity creates a larger benefit than simply accessing project-support products and services separately?
Effectiveness: Is the intervention achieving its intended results
EQ8: GESI – To what extent do the project interventions improve GESI considerations with regards to the end target groups? What were the key hindering factors to achieve better effectiveness? Which type of interventions were particularly effective in terms of GESI and why?
EQ9: Cost-Effectiveness of Catalysts – What is the cost and benefit of external private sector investment generated (crowding-in) by SIGMA, compared to traditional project delivery models? Is the high investment in administrative and financial assistance to catalysts justified by the quality or scale of the resulting interventions?
EQ10: Procurement and Time Efficiency – Are the internal due diligence and procurement processes for co-investment sufficiently streamlined for an agile MSD project? What is the average lead time for a

standard intervention compared to internal targets and how does this affect the project's ability to respond quickly to market opportunities?
EQ11: Risks – To what extent was the project mindful of various risks that were identified at the beginning? How efficient was the implementation in terms of applying Conflict Sensitive Program Management (CSPM) approach, "Do No Harm" principle and avoiding market distortion?
EQ12: Management Efficiency – Given the challenges in data collection due to partner reluctance, is the current M&E framework (especially for Outcome 2 indicators) an efficient use of monitoring resources, or should the project pivot to more qualitative/proxy indicators for systemic change? To what extent has this issue affected the due diligence and selection of the catalyst partners? *How burdensome is the data collection process for catalyst partners, and does data collection pose an opportunity to further professionalize their business models?*
EQ13: Governance – How can the project governance be more efficient? What was the key role of the local subcontracted partner? To what extent were the resources and capacities of the local partner efficiently used? Is the team structure efficient?
EQ14: Learning – Does the program's design and management demonstrate learning, and can SIGMA show how learning since the program's start has influenced the gradual (or abrupt) adaptation of its tactics and/or strategy?
Impact: What difference has the intervention made?
EQ15: Impact – What difference has SIGMA made to the lives of target population and their communities according to the underlying Theory of Change and the envisaged impact? Does the catalyst approach work in increasing, for example, the income of the rural population, especially in terms of gender equality? Are the outcomes the catalysts seek to achieve reasonable outcomes to measure the wider positive effects or how could they be improved?
EQ16: Unintended Consequences – Are there any unintended consequences? In particular, has the co-investment approach inadvertently distorted the market, crowded out smaller, non-partner businesses, or created a dependence among catalysts on donor-provided technical assistance packages?
Sustainability: Will the benefits last after the intervention ends
EQ17: Financial Viability – Are the catalyst partners financially sustainable over the long-term? Are the financial projections of the co-invested catalysts credible, and do they demonstrate a clear pathway to profitability and scale that does not rely on subsequent donor funding? If not the case, how can this issue be addressed in Phase 2?
EQ18: Institutionalization of Knowledge – What concrete mechanisms (beyond documentation) have been put in place to ensure that the project's accumulated knowledge—such as the catalyst analysis and effective technical assistance methodologies—is owned and used by local market entities (e.g., financial institutions, business service providers) to continue market development independently?
EQ19: Systemic Change – Has SIGMA successfully addressed any of the Contextual and Systemic Constraints (e.g., private sector data opacity, low financial transparency) that hinder the overall functioning of the agricultural market system and if yes to what extent?
EQ20: Depth of Change – What evidence is there that the project has created a self-sustaining cycle of innovation and investment in the target value chains, reducing the need for donor subsidies and promoting the adoption of GESI and climate-sensitive practices as market norms?
EQ21: Replicability – To what extent are the successful interventions replicable by other private sector actors using standard commercial means, and what evidence is there that this replication is already starting in the market?

3.2 Risks / Limitations

The table below details risks and mitigation strategies relevant to this evaluation.

Risk / Limitation	Description	Mitigation Strategy	Comments / Results
Compressed timeline limiting analytical depth	The shortened evaluation timeline could have constrained iterative analysis, validation of	Focus analysis on high-value evaluation questions; share emerging findings during the debrief workshop; maintain tight	The review team was able to complete all scheduled

	findings, and stakeholder reflection.	internal quality control and peer review.	KIIs and FGDs.
Limitations inherent in a qualitative design	Reliance on qualitative methods constrains attribution, quantification of impact, and generalizability of findings.	Frame conclusions in terms of contribution, plausibility, and learning; apply systematic triangulation; clearly state methodological limitations in the report.	No additional observations
Data gaps and uneven data quality	Reluctance or inability of partners to share financial, performance, or Outcome 2-related data may affect robustness of findings.	Use proxy indicators and qualitative evidence for systemic change; triangulate across sources; explicitly note data quality issues and confidence levels.	Triangulation (and occasional ad hoc site visits) was important for verifying information, especially regarding crowding-in.
Perceived bias, incomplete stakeholder coverage or lack of evaluation independence from the SIGMA program	Over-representation of Catalyst partners, under-representation of wider ecosystem actors, or reliance on SIGMA to support logistics could affect the perceived independence or usefulness of the review.	Expand KIIs opportunistically to include additional ecosystem actors (e.g. financial institutions, CSOs, private service providers); clearly document sampling logic and remaining gaps. In addition, the evaluation will rely on SIGMA staff only for logistical support, while reserving final decisions on the identities of key informants and focus group participants.	No additional observations
Involvement of an SDC representative in data collection encourages biased responses	Ms. Rashid's presence in KIIs (and potentially FGDs) may skew responses toward continued fund seeking and complementary responses, limiting negative information	Work with SDC and SIGMA to craft an explanation that allows the evaluation team to disclose the identities of all interviewers while also encouraging frank and open discussion with key informants and focus group participants.	No additional observations

4. Findings

This section presents and analyzes the review's findings for each Evaluation Question, organized under Relevance, Coherence, Effectiveness, Impact and Sustainability criteria.

4.1: Relevance – Is the Intervention Doing the Right Things?

SIGMA's Relevance, overall: SIGMA's intervention portfolio remains highly relevant to the needs of Armenia's mountainous agricultural market systems and households that rely on them, particularly through its focus on irrigation, mechanization, cold storage, beekeeping and other services that address binding constraints for farmers and rural enterprises. The project is well aligned with national and local agricultural priorities and has generated clear benefits for many smallholders, although its relevance is less consistent for the most vulnerable groups, especially displaced people and farmers with very small plots or limited land access. The MSD and co-investment approach is appropriate for the Armenian context and has helped build ownership among private catalysts, but SIGMA has so far applied MSD only partially: Phase 2 will need to move beyond financing individual service providers toward deeper leverage points in equipment access, finance, technical advice, market access and systemic replication.

EQ1 – Adaptive Alignment: Given the dynamic environment and the contextual changes, does the current agricultural intervention portfolio still address the most critical, binding constraints to the target market systems or are the interventions driven primarily by available catalysts?

SIGMA demonstrates strong alignment by targeting a range of fundamental, binding constraints, including the lack of modern mechanization and post-harvest infrastructure. At its outset, SIGMA identified a few main challenges that inhibited agricultural market systems growth in Armenia's mountainous regions. These included:

- Underdevelopment of irrigation systems
- Low level of mechanization
- Lack of aggregation facilities on settlement level
- Insufficient supply of seeds meeting the needs of higher value markets
- Insufficient levels of qualified agrarian specialists
- Underperforming agri-tech industry and innovations

Since then, the constraints that SIGMA seeks to address have not fundamentally changed, although the broader environment may be dynamic. Furthermore, while the thin market of available partners requires SIGMA to choose partners from within a limited pool of catalysts, the project's co-investment requirement and extensive co-creation process helps ensure that partners are "bought-in" regarding the partnership and capable of achieving contractual objectives.

SIGMA's relatively extensive, yearlong inception phase helped project leadership design the program to focus on key constraints and work through existing capacities at the service provider level, ensuring its relevance for agricultural market systems in mountainous regions. The irrigation, cold storage, mechanization and beekeeping interventions appear to be among the most relevant intervention areas.

Other donors corroborated the program's relevance as well. One donor representative commented that "there seems to be a real issue with ag inputs in general…On one hand it's difficult to get access to high quality [inputs and equipment]. On the other hand, it's difficult to persuade farmers and firms to use these more sophisticated and expensive equipment out there." The demonstrations created by SIGMA support to field high-quality technology are of obvious relevance. As another donor representative noted, "There are many new machines available, but input suppliers aren't bringing them because they're not sure they'll sell."

However, while SIGMA has been able to create momentum by partnering directly with catalysts, it has not been successful yet in addressing some deeper constraints, especially regarding equipment access without donor support. Lack of access to mechanization is symptom of underperformance in other market systems, particularly low access to finance that could incentivize importers to stage more equipment in Armenia and incentivize service providers and farmers to take more risks in purchasing advanced machinery. By focusing on equipment access instead of the deeper constraints, the project risks functioning primarily as an equipment-financing mechanism – in the next phase it will need to explore partnerships with equipment importers and financial institutions in order to fundamentally alleviate the equipment access constraint, beyond the demonstration level.

SIGMA's project-funded approach to agrarian training faces a similar challenge. Without finding opportunities to embed the training into commercial relationships and assist the Government of Armenia to amplify its own extension services, SIGMA is not yet fully utilizing the opportunity to fundamentally address the challenge it identified around an insufficient supply of qualified agrarian specialists.

EQ2 – Targeting and Need: To what extent are the project's chosen value chains and intervention areas (e.g., the focus on the grain value chain) relevant to the immediate and long-term economic priorities of the country and the livelihood needs of the most vulnerable target groups? Which value chains and intervention areas are more critical to remain as a priority in Phase 2?

SIGMA's value chains and intervention areas are fully in line with national, regional and local agricultural priorities, according to KIIs with national and local government officials, most of whom were quite enthusiastic about SIGMA's work. The 2022 supply crisis and the government's resulting emphasis on developing potato and grain value chains are amply reflected in SIGMA's strategy. Optimistically, SIGMA serves as a sort of laboratory for government, testing and validating technologically enabled interventions (such as hose-reel irrigation services) that the state is not yet ready to scale. This role allows SIGMA to identify systemic gaps and provide the government with evidence-based results that can eventually be integrated into government support programs, should government bodies have the capacity and interest to do so.

At the beneficiary level, there is significant benefit (described in more detail in the Impact section, below), demonstrating that SIGMA's work meets the livelihood needs of small farmers. One FGD participant noted, "now the weather reaches 30–33 [degrees Celsius], and sometimes [up to] 35. Under this weather, irrigation is absolutely necessary." Another farmer commented that the availability of SIGMA-supported cold storage had encouraged farmers to invest, saying, "Because of the cold storage, people are already excited – as there's the possibility to store their produce, they're already establishing orchards on different hectares."

At the same time, evidence regarding the degree to which SIGMA is aligned with the livelihood needs of vulnerable groups is mixed. While the beekeeping and cold storage interventions stand out as particularly relevant for these groups, some farmers (including women) who participated in FGDs said their extremely small plots mean that it is was not worthwhile to use mechanized harvesters, and that they could not convince an irrigation service provider to come for such a small piece of work.

For displaced groups, lack of access to land and a lack of interest in crop agriculture meant SIGMA was less relevant for them (although beekeeping is an exception). Thus, while women were successfully reached through the beekeeping, horticulture and berry sectors, reaching displaced persons is hindered by their lack of land ownership. Furthermore, many displaced persons are more naturally engaged in animal husbandry (sheep and pigs) than the specific crop value chains currently supported by the project.

Looking ahead to Phase 2, there is no evidence that existing value chains should be dropped. Instead, SIGMA should seek deeper leverage points for equipment access and technical advice, while also investing in a more coherent and integrated strategy for impacting vulnerable groups. Some members of those groups gave insights during FGDS, highlight needs such as stone removal, water access that makes irrigation feasible, technical advice, market access and financial solutions for equipment purchase. An FGD participant commented, “There’s no one who comes and says to me, ‘This year you plant cabbage or potatoes on one hectare, I will sign a contract with you,’” while another participant pleaded for technical support, saying, “We need a proper specialist – one who looks and shows what’s wrong, tells us clearly, and gives reasons.”

EQ3 – MSD Rationale: Is the use of the MSD approach and private sector co-investment the most appropriate and relevant strategy, considering the documented market features such as the high degree of informality and the low financial transparency among potential partners? Are any adaptations to the methodology warranted, given the socio-economic profile of the participants?

SIGMA is a trailblazer, as the first project in Armenia to apply MSD to such a great degree. Based on its experience and the insights of observers, we find that the MSD approach is appropriate and relevant in Armenia.

MSD is fundamentally a way of pursuing economic development goals that prioritizes four principles:

- Understanding fundamental constraints,
- Intervening through local actors in a way that minimizes distortion and promotes ownership,
- Managing adaptively to take advantage of new opportunities and find deeper leverage points, and
- Measuring success by focusing on systemic outcomes.

SIGMA shows the first and second principles in its work and thereby demonstrates their relevance to the context of Armenia’s mountainous marzes. Addressing the first principle, SIGMA made significant efforts to identify and explore fundamental constraints through months of meetings with farmers, businesspeople and local government. Addressing the second principle, its 50/50 (minimum) co-investment strategy helps to mitigate the risk of poor catalyst performance by filtering for high-commitment catalysts while ensuring that the methodology adapts to the socio-economic constraints of local participants.

At the same time, we question the degree to which SIGMA applies MSD to its fullest potential when designing interventions. As mentioned above, SIGMA effectively acts as an equipment financier and, in many cases, there seem to be few opportunities for replication of the technologically enabled service provision model the project is seeking to demonstrate (see EQ21: Replicability, below, for more detail on this topic). In addition, SIGMA funds and provides direct training to beneficiaries, which is generally discouraged in MSD practice except under specific conditions. The team identifies capacity building as vital but has not planned to embed that function in market systems (to their credit, project staff agreed this is an important question).

By more fulling embracing MSD and using some of its standard tools (like results chains) in a meaningful way, SIGMA staff will be more capable of focusing on underlying constraints and clearly identifying the systemic change that they expect will result from their work. Moreover, SIGMA could dedicate far more effort to capturing and incorporating tacit (primarily qualitative) information into its work through regular sensemaking sessions with staff and other counterparts, which would help it identify challenges and pivot more quickly to adapt its partnerships and strategic approach. This finding is explained more under the EQ14: Learning, below.

In addition, while SIGMA has a robust monitoring and evaluation (M&E) system, that system is overwhelmingly focused on quantitative data. Results chains, useful tools that help teams plan interventions and identify the specific systemic changes they expect to result from their work, are disregarded by program staff as of limited value – one of them referred to the development of results chains as a "tickbox." As a result, SIGMA staff point to examples of crowding in – a key piece of systemic evidence in the MSD toolkit – that do not really qualify (e.g., they copy the technology but not the model) and the project risks relegating itself to being transactional rather than transformative.

In sum, while MSD is clearly a relevant approach for SIGMA's work, during Phase 2 SIGMA can do far more to follow it, becoming more adaptive and effective, and better able to specify and demonstrate systemic change.

Lastly, all MSD projects adapt their tactics to fit their context, and SIGMA is no different. The evaluation team did not observe any features of the Armenian socio-economy that would cause us to caution against using the MSD approach in the future.

4.2: Coherence – How Well Does the Intervention Fit the Wider Context?

SIGMA's Coherence, overall: SIGMA is broadly coherent with Armenia's national agricultural priorities, the wider donor landscape and the market incentives shaping climate-resilient service provision, particularly through its alignment with government priorities and its promotion of commercially useful technologies such as irrigation and cold storage. However, its coherence is less developed in three important areas: policy influence remains opportunistic rather than guided by a prioritized agenda; GESI is not yet systematically embedded in market analysis, partnership design or resource allocation; and complementarity across interventions is still emerging rather than consistently producing integrated benefits for farmers. Phase 2 should therefore build on SIGMA's strong institutional positioning by adopting a more intentional policy strategy, integrating GESI into core MSD practice, maintaining climate resilience as a cross-cutting commercial logic

rather than a narrow green-economy mandate, and deliberately designing intervention packages that allow farmers to access mutually reinforcing services.

EQ4 – Policy Coherence: How effectively does the SIGMA project leverage its interventions to influence broader policy and regulatory frameworks (e.g., related to agricultural digitalization or financing), ensuring alignment with national government strategies and avoiding conflict with other donor initiatives?

While SIGMA demonstrates alignment with national government strategies and available evidence suggests that it operates constructively in a context of multiple donor initiatives, its approach to influencing policy is more ad hoc than strategic.

SIGMA has strong working relationships with key actors in national and regional governments, especially the Ministry of Economy. A government representative noted that, "SIGMA and the state are in cooperation from the very beginning, because if we have priorities, the program itself also prefers to be guided by those priorities." Another individual cited SIGMA's support for the annual Sevan Agritech Summit and the accompanying Agrithon as a case in which "we asked [the project] to prioritize it and it was very well received." In addition, SIGMA's close partnerships with regional government actors may, over time, be important for promoting crowding-in, as regional agencies steer government support toward other market actors eager to replicate SIGMA models.

However, SIGMA has not yet developed an overarching plan to address critical policy issues, such as the absence of government extension or the importance of carefully targeting the Ministry of Econ's broad agriculture financing activities to build a base of mechanized capacity among small and medium-sized service providers, for example. Some members of the SIGMA team have significant access to high-level decision-makers in the Armenian government. If SIGMA had a plan that prioritized a set of policies and predicted a credible pathway toward influencing them, instead of the fragmented or opportunistic approach it currently takes, it would be more likely to use that access strategically.

Other donors spoke highly of SIGMA's work as both relevant and complementary to their own initiatives. In terms of opportunities for future collaboration, a representative from Germany's Gesellschaft für Internationale Zusammenarbeit (GIZ) offered to include the professional profiles demanded by SIGMA partners in its vocational training project.

EQ5 – GESI and Climate Integration: Are the GESI and climate-resilience strategies conceptually coherent with the market's current incentives, or do they rely solely on project subsidy, thereby undermining the market-driven nature of the intended systemic change? What are the gaps in design, implementation structures, or resource allocation to ensure that recommendations are not only systemic but also practical? Depending on the answer, how can the project address these issues and/or further integrate GESI and climate-resilience strategies in its implementation to improve effectiveness?

SIGMA's climate-resilience strategy is a core focus of the project's market-based intervention package, serving the needs of mountainous region farmers who face increasingly unpredictable climate conditions. The sustainability of those interventions relies on market incentives to encourage service providers to continue offering their services, and for new actors to enter the market. SIGMA's GESI strategy, on the other hand, is less coherent, showing a lack of integration in the context analysis and design of the project's market-based approach.

Water-saving technologies, such as the hose reel systems, provide clear economic incentives through reduced labor and resource costs. These climate-resilient practices are adopted because they solve immediate operational bottlenecks, such as the scarcity of irrigation labor and high water loss in open canals. The profitability of cold storage and aggregation services offers a sustainable model for smallholders to access higher winter prices for fruits. This market-driven incentive encourages farmers to expand their orchards because they have a guaranteed, climate-controlled storage solution that prevents post-harvest loss.

However, GESI is not systematically embedded in intervention design and partnership development. While there are clear examples of women's economic empowerment and participation (primarily in the cold storage and beekeeping interventions), these are context-driven and value chain specific, rather than the result of a systematic, cross-cutting GESI strategy. This is likely the result of the relatively late hiring of a GESI advisor, in September 2025, who lacked experience working with a private sector development project. In short, SIGMA has not yet resourced or operationalized GESI sufficiently to support consistent inclusion outcomes, investing the resources needed to make GESI a real consideration and prioritizing GESI so that it can plausibly claim to be impacting vulnerable groups strategically, rather than sporadically.

EQ6 – Green MSD: If the project should shift solely and fully to a focus on green economy in Phase II, what could be the implications, e.g. will other program objectives be compromised or will the project not be coherent anymore, etc.?

Throughout the review, the evaluation team received consistent feedback that a pivot to solely and fully focusing on green agricultural practices is not warranted. First, in light of accelerating climate change, integrating green practices is a fundamental necessity for climate resilience and therefore a key element of business viability in Armenia's agricultural sector. Second, by virtue of its effort to be relevant, SIGMA already promotes a range of technologies with obvious implications for climate resilience, as discussed in the previous section. Even the tech startups that go through the Agrithon incubator process are mostly "green" in some way. Third, restricting SIGMA to a green economy focus could prohibit it from moving into other promising intervention areas, including marketing and logistics – not because these actors are promoters of climate change, but because it may be difficult to make the argument that they are sufficiently climate friendly. Fourth, adding an explicit Green MSD mandate could add significant cost to new models in an environment in which SIGMA is only just now testing the commercial viability of the services it already promotes – the project should wait until it can prove viability before trying to force a new standard onto its work.

At the same time, during Phase 2, SIGMA could continue to give greater consideration for how SIGMA can embed green considerations into commercial incentives, particularly in the case of the climate adaptation training it funds. For example, similar to how it can incorporate GESI in a meaningful way, SIGMA can establish one or several checkpoints in its partnership development process that force it to review the partnership's climate-related impact. During routine monitoring, staff can be instructed to explicitly discuss climate-related benefits or impacts its partners might be seeing, and bring those back to the larger team for discussion. During future evaluations, external reviewers can be asked to bring an explicit Green MSD expertise to the team and make it a significant section of the evaluation.

The finding is not that SIGMA should ignore climate considerations – rather, it is that SIGMA should not unnecessarily limit itself to interventions that are purely climate friendly.

EQ7 – Complementarity: To what degree can SIGMA claim that participants are able to access multiple lines of support? Is there evidence that complementarity creates a larger benefit than simply accessing project-support products and services separately?

Complementarity is one of the reasons for an MSD program to target multiple services in a given value chain – by supporting the emergence of a range of affordable services, MSD projects seek to induce sustainable performance changes, resilient to shocks and stresses, at the beneficiary level.[1] SIGMA has yet to show significant complementarity, which is not unexpected at this stage because there are simply not enough catalyst service providers yet. The project's M&E system has not yet recorded instances of complementarity, although the evaluation team was able to uncover a few examples, including overlap between EdAgro (see cleaning) and cold storage clients, and overlap between EdAgro and SkyAgro (drone-based spraying) clients.

Across the FGDs, farmers demonstrated a clear understanding that different types of support are interdependent – e.g., recognizing that seed quality affects germination, irrigation determines whether crops successfully grow, and storage enables produce to be sold profitably. However, in practice these elements are not accessed as a bundled package and are instead experienced as separate, disconnected interventions, partly due to geographic dispersion. At the same time, FGDs provide implicit evidence that combining these services would generate greater outcomes.

In sum, while SIGMA is working to create the operational conditions for complementarity, it has not yet influenced a sufficient volume of service improvements by catalysts or copiers to show widespread complementarity. The project should expect to record (and avoid double counting) instances of complementarity as it expands its partnerships and sees more crowding in, based on catalyst demonstrations.

4.3: Effectiveness – Is the Intervention Achieving the Intended Results?

SIGMA's Effectiveness, overall: SIGMA has been effective in building a substantial portfolio of catalyst partnerships, demonstrating that co-investment can mobilize private resources, generate valued services and produce early benefits for farmers, especially through cold storage, beekeeping, seed treatment and selected irrigation models. However, its effectiveness is constrained by weaknesses that cut across the portfolio: GESI outcomes are meaningful but mostly incidental rather than systematically designed; partnership development and approval processes are too lengthy for an agile MSD programme; governance arrangements are more cumbersome than necessary; and the MEL system is stronger at tracking quantitative accountability than at supporting adaptive learning and systemic analysis. Phase 2 should therefore preserve the strengths of the catalyst model while streamlining decision-making, taking more calculated risks, embedding GESI and climate considerations in partnership design, strengthening qualitative learning and using MSD tools more deliberately to translate promising pilots into systemic change.

EQ8 – GESI: To what extent do the project interventions improve GESI considerations with regards to the end target groups? What were the key hindering factors to achieve better

[1] "M4P Operational Guide," DCED, 2015, p3: https://beamexchange.org/documents/443/m4pguide_context.pdf

effectiveness? Which type of interventions were particularly effective in terms of GESI and why?

This review found strong evidence of women's economic empowerment driven by viable business models in beekeeping and cold storage. These interventions incentivized sustained participation by women especially, encouraging not only the productive use of the services, but also investment in productive capacity. However, as mentioned previously, GESI has not been systematically embedded in SIGMA's intervention design thus far. As a result, GESI outcomes are partially integrated within market systems, but largely emerge organically rather than through intentional design. In most cases, GESI appears to remain secondary to core partnership design and market analysis.

The cold storage intervention represents a strong example of market-coherent GESI integration, despite not being explicitly designed as such. It had a large number of female users, a fee-based model ensuring financial sustainability, and integrated services (storage, harvesting, direct purchasing, and occasionally transportation to help women bring their goods to the storage facility). The cold storage model addresses key constraints faced by women, particularly labor shortages and price volatility, and enables increased production and investment. Participants linked access to cold storage directly to productive investments. One woman commented, "This year, for example, we've already planted one more small orchard. One of the reasons is because there is such a service." Another woman noted, "Because of the cold storage, people are already excited. If there's the possibility to store their produce, they're already establishing orchards on different hectares." This suggests a reinforcing dynamic centered on the cold storage model, where risk reduction leads to increased investment and production, with women among primary beneficiaries, which in turn boosts the viability of the cold storage business by increasing demand.

The beekeeping intervention also illustrates a more intentional approach to GESI integration, combining training, asset provision and market access. FGDs with women participants revealed a wide range of benefits. One noted that, "After attending the training, I realized that I truly didn't know a lot… now I would be able to sell everything." Some women participants of Beekeeping Forge said were transitioning from subsistence activities to commercial, profit-oriented operations, including higher-value activities such as queen breeding. Another commented, "I'm very interested in queen breeding now... It's more advantageous and profitable. I can breed queens and sell them."

For other interventions, however, there are key gender-specific constraints, including labor access and service pricing structures disadvantaging small-scale producers, that hinder better effectiveness. Among economically vulnerable households that do possess land, there is a tendency to lease out land rather than cultivate it. For displaced groups, their expressed lack of interest in crop agriculture means that SIGMA is left with little opportunity to support them.

To assess likely inclusion effects more systematically, with a clearer idea of the degree to which vulnerable groups might benefit from its interventions (instead of waiting to see who benefits), SIGMA might consider assessing the basic set of farmer characteristics (e.g., access to sufficient land) required to productively use a given service. With its strong quantitative capacity, this is certainly within its abilities and would be a useful data point in future deal notes.

EQ9 – Cost-Effectiveness of Catalysts: What is the cost and benefit of external private sector investment generated (crowding-in) by SIGMA, compared to traditional project

delivery models? Is the high investment in administrative and financial assistance to catalysts justified by the quality or scale of the resulting interventions?

Under the assumption that SIGMA can reach its impact target of nearly 2,000 farmers benefiting from increased incomes, along with significant systemic change in the form of crowding in by new service providers throughout target value chains, SIGMA's high administrative investment will be offset by its impact. One SIGMA team member characterized the expected return as substantially higher than under traditional delivery models, saying, "From the investment perspective, costs are much higher here, but from the results perspective it's 100 times higher than the traditional approach."

However, full justification of those costs will be contingent on showing the scale of beneficiary impact and the depth of systemic change, which is currently premature. However, SIGMA has established conditions that could improve the cost-benefit ratio over time – it has a large number of partnerships and is about to add additional catalysts to its portfolio. Moreover, now that it is in position to identify and work on deeper leverage points, the cost/benefit ratio will continue to improve over the next phase.

On a related note, the focus on the highest-possible-quality technology (e.g., German versus Russian or Chinese combine harvesters) increases the cost of demonstration while also setting expectations unrealistically high – it could be advisable for SIGMA to consider more affordable technology for future partnerships, purely from a cost/benefit perspective.

EQ10 – Procurement and Time Efficiency: Are the internal due diligence and procurement processes for co-investment sufficiently streamlined for an agile MSD project? What is the average lead time for a standard intervention compared to internal targets and how does this affect the project's ability to respond quickly to market opportunities?

SIGMA has developed a predictable but lengthy due diligence and procurement process, with each partnership requiring up to six months to roll out, while the overall timeline from partnership development to equipment delivery can be up to one year. While catalysts unanimously expressed satisfaction with the process, the extensive nature of the due diligence process combined with the SDC's two touch points – the project concept note (PCN) for a 'no-objection' decision, followed by a thorough review and approval of the more detailed project deal note (PDN) – slows it down by introducing an incentive for SIGMA to ensure that each proposed catalyst partnership is highly defensible.

From the catalyst perspective, SIGMA's partnership process seems efficient (or they were unwilling to express dissatisfaction with it). Each catalyst representative said he or she was happy with the process, which is quite rare in our experience. The team works intensively with catalysts to co-create the partnership, and catalysts are kept updated on the progress of agreements as they move through SIGMA and SDC reviews. In one characteristic remark, a catalyst said, "With any questions we had [during partnership development], project staff addressed [them] in a timely manner. Very few people from such organizations are working like they do." The only significant delay we found was with Uroot Flour Mill, for a reason (electricity access) that was outside of SIGMA's control.

However, the process could be shortened – for example, by "bypassing the PCN no-objection stage for those interventions that are similar to already operational SIGMA projects," as SDC has suggested already. From this perspective, the project was designed with a level of SDC

involvement that SDC rules do not require. This gives SIGMA room to relax its standards while maintaining compliance with SDC procurement rules. Going beyond the step of eliminating the PCN stage, SIGMA and SDC might consider creating a threshold, as a euro amount, below which SIGMA can roll out new partnerships without explicit SDC approval at all. As it seeks to scale up partnerships in the rest of Phase 1 and into Phase 2, gaining greater freedom to move quickly will help it show even greater momentum.

EQ11 – Risks: To what extent was the project mindful of various risks that were identified at the beginning? How efficient was the implementation in terms of applying Conflict Sensitive Program Management (CSPM) approach, "Do No Harm" principle and avoiding market distortion?

The project established a robust risk-monitoring baseline during its design phase by integrating multiple specialized assessments: the Risk Assessment, the CEDRIG Assessment and the CPSM Strategy. These documents collectively addressed climate, security, and socio-political threats to ensure the project's design was resilient to the complex Armenian context. SIGMA has kept these risks in focus during the first phase.

At this point, the main risk that remains relevant is the challenge of finding "appropriate local partners." In this regard, it may have moved too far toward risk aversion. To find local partners, the team spends significant amounts of time in the marzes explaining the approach and searching for actors with whom SIGMA could partner productively. It began engagements with more than 100 potential partners. But the project has a 15% acceptance rate for applications from potential catalysts and, according to team members, all of the partnerships are successful. This leads us to wonder whether SIGMA takes sufficient risk with partnerships – most MSD projects can point to several unsuccessful interventions and the learning that emerged from them.

It is possible that SIGMA's extensive due diligence process and SDC's two-point approval of each partnership incentives SIGMA to only propose the least risky partnerships, with other potential opportunities left aside. If SIGMA can relax its due diligence process (as advocated in **EQ10**, above), it may open the space to take greater risks in the future.

The lack of government support was also rated as a risk, and that remains today if we interpret it as lack of government support for agriculture. The SIGMA team has close relations with the Ministry of Economy and recounted that, in a high-level meeting, they told ministry counterparts that "we are doing your job" regarding extension. However, as pointed out in the policy discussion under EQ4, the project does not yet have a plan for addressing the government's lack of extension support.

Finally, market distortion is always a risk of any project that directly supports private sector actors. We did not find evidence that SIGMA had helped any catalysts artificially capture a market or suppress competitors by virtue of the support they received. However, if SIGMA scales up the current catalyst-by-catalyst approach, rather than seeking deeper leverage points during Phase 2, market distortion would be a more likely outcome in the future.

EQ12 – Management Efficiency: Given the challenges in data collection due to partner reluctance, is the current M&E framework (especially for Outcome 2 indicators) an efficient use of monitoring resources, or should the project pivot to more qualitative/proxy indicators for systemic change? To what extent has this issue affected the due diligence and selection of the catalyst partners? How burdensome is the data collection process for

catalyst partners, and does data collection pose an opportunity to further professionalize their business models?

There are two distinct issues to address under this question. First, the M&E framework for Outcome 1 is sufficient to track key changes associated with SIGMA's support to catalysts. However, Outcome 2's output and outcome indicators should be redesigned to be more internally coherent and more useful for showing project changes. Second, the data collection process for catalysts does not seem burdensome, but most catalysts also do not find the data to be useful for their own operations, and some have difficulty collecting basic client information.

We do not recommend any changes to the Outcome 1 M&E framework. However, the output and outcome indicators for Outcome 2 are not sufficiently coherent. The output indicators focus on policy influence and market linkages, while most of the outcome indicators focus on instances of crowding-in, or the Expand level of the AAER systemic change framework. As a result, the M&E framework misses an opportunity to document outcomes in the policy and operative environment, which are as important as (and likely a more direct result than) the Expand indicators.

In addition, some Outcome 2 indicators are very difficult to collect and verify. For OC 2.2 (investments by new catalysts crowding in) and OC 2.3 (new smallholder farmers crowded in), SIGMA will likely not be able to reliably report that data. While some copying firms might report it, the project will not know if that information is accurate and others will not give that information at all – the result will not be a valid picture. SIGMA could estimate these figures based on data from a few copying catalysts and could include that data in periodic reports to SDC, but these should not necessarily be raised to the point of being formal indicators in the SIGMA logframe.

Regarding the data collection process from the catalyst's perspective, partners do not complain about the time burden of collecting information. At the same time, most catalysts said the info is not useful for them, while some catalysts complained that their clients (and therefore SIGMA beneficiaries) refused to provide some information. In a characteristic remark, one catalyst dismissed the utility of client information to his own business, saying, "Only for SIGMA it's good." The same catalyst noted that, among his clients, "There are around 50 people who refuse to provide their data. They provided their names but not the contacts." He indicated that clients' main concern was reporting of their information to tax authorities.

Businesses clearly have an interest in knowing their clients well, allowing them to tailor their services to clients' preferences. In these situations, SIGMA can work with catalysts to agree a monitoring framework that more obviously serves the interests of both the partner and the project, clarifying uncertain about the utility (and confidentiality) of data collected and making it easier for catalysts to explain to their clients the purpose of collecting this information.

Regarding qualitative data collection, see this report's response to **Q14: Learning**.

EQ13 – Governance: How can the project governance be more efficient? What was the key role of the local subcontracted partner? To what extent were the resources and capacities of the local partner efficiently used? Is the team structure efficient?

Under this question, the report first addresses the question of how governance can be more efficient. It then addresses the local subcontracted partner, resource utilization and the team structure.

First, the project governance structure is inefficient in two ways – SDC is too heavily involved in every partnership decision, and the Steering Committee plus Advisory Committee structure is duplicative. As mentioned previously, it is unusual for SDC to be so closely involved in each partnership decision. It could be much more efficient for SIGMA to adopt a threshold (such as €75,000, for example), below which SIGMA can move forward independently.

At the same time, the committee makeup supporting SIGMA could be streamlined. The current structure is that a steering committee (consisting of DAI headquarters staff, SDC and SIGMA team members) meets periodically to discuss the project's progress and sensitive issues, while an advisory committee (consisting of a wider group of stakeholders, including government representatives) meets as a platform for discussing more strategic and thematic issues. Given the close, informal working relationship between SDC staff and SIGMA management, SIGMA could streamline this structure by eliminating the steering committee, which one informant characterized as "a bit redundant because they had updates anyways." In its place, it can hold a semi-annual advisory committee timed to coincide with the release of the semi-annual report.

From DAI's perspective, the intense donor involvement in program decisions was institutionalized partly to comply with SDC's interest to be closely involved and partly to formalize the process for taking SDC input into consideration. There seems to be appetite among both SDC and DAI to relax the client check-in points that currently exist, but both appear to believe that the other party wants them to remain – this suggests scope for a constructive discussion between SDC and DAI.

Second, the role for SIGMA's local partner role, Ampera, includes the PSE Lead and the MEL Manager and is both appropriate and well-utilized by SIGMA. However, the current MEL Manager position is only 80% dedicated to SIGMA (also working on significant non-related evaluations that divert his attention from SIGMA), and we recommend dedicating a full-time MEL Manager to Phase 2 who will sit in the SIGMA office as a core part of the team.

Third, SIGMA's budget for short-term consultant support has been underutilized. That could be usefully spent on financial sector, commercial irrigation and equipment market advisors, in addition to bringing in experts on climate-appropriate technology – all priorities for SIGMA going forward.

Fourth, in terms of the core team, SIGMA should consider bringing a full-time Portfolio Manager into the team, with a mandate to bridge the gap between the project's tactics and its systemic objectives. The gap in implementation of the MSD strategy that was highlighted in **EQ3** could be difficult to bridge with the existing team structure – existing team members appear to have limited capacity to take on this function, and no single team member has the background to drive the project in this direction. However, it may be difficult to source MSD expertise from Armenia, and SIGMA and SDC should carefully weigh the costs of bringing a regional or otherwise international advisor into a full-time position on the project.

Lastly, also on the topic of the core team, SIGMA should move quickly to bring a new, full-time GESI advisor onboard and fully incorporate that position into intervention and partnership design discussions. A GESI advisor with a background in PSE (or some corporate experience) rather than a typical human rights background would be advantageous, helping ensure that this advisor's counsel aligns with SIGMA's market-based approach, especially in the challenging area of GESI impact.

EQ14 – Learning: Does the program's design and management demonstrate learning, and can SIGMA show how learning since the program's start has influenced the gradual (or abrupt) adaptation of its tactics and/or strategy?

MSD projects rely on continual learning to inform strategic and tactical pivots that help them discover and pursue greater opportunities for impact – this learning can be explicit (tracked by indicators, showing up in formal reports) or tacit (the more nuanced, primarily qualitative learning that team members gather every day).2 SIGMA shows a strong grasp of contextual knowledge and significant explicit learning, but it could do more to capture and employ the tacit knowledge that team members collect.

SIGMA's main Phase 1 pivot was to drop the tourism sector, a mandated response to a shift in SDC policy rather than an internally identified necessity. Meanwhile, interviews with team members reveal significant learning about pilots – such as challenges to the commercial viability of hose-and-reel-based irrigation services – that do not seem to result in changes to program design (or have not done so yet). In our view, this is at least partly because SIGMA prioritizes explicit data and formal reviews that focus on targets and expenditures. The project does not take sufficient time to hold less formal "sensemaking" sessions where team members gather around a table for relatively unstructured discussions about what is working, what is not working, what is unexpected, and what new opportunities are arising.

In other words, SIGMA is learning but not learning fast enough because it has yet to tap one of its greatest resources – the nuanced, qualitative information its team members collect. The project would benefit from more internal debate. On a related note, the MEL function within SIGMA has an overwhelmingly quantitative focus and could also begin doing small qualitative data collection activities (e.g., rapid outcome harvests focused on changes related to irrigation access) that can help the project capture and incorporate important early lessons from the experiences of their catalysts and beneficiaries so far.

4.4: Impact – What Difference Has the Intervention Made?

SIGMA's Impact, overall: SIGMA has generated persuasive early evidence of positive impact for target farmers and rural households, including improved yields, avoided crop losses, better timing of sales, stronger beekeeping productivity, new investment in orchards and meaningful benefits for some women and marginalized participants through cold storage and beekeeping. The catalyst approach is producing valued services and appears to be increasing incomes where farmers can access and use those services, while no significant negative market distortion or crowding out was found at this stage. However, SIGMA's broader impact remains constrained by awareness gaps, limited service capacity, uneven access for very small farmers, weak integration of technical assistance into market relationships and unresolved questions about whether some high-cost service models can scale or replicate commercially. Phase 2 will therefore need to focus on

[2] "The Road to Adaptive Management: Knowledge, leadership, culture and rules," BEAM Exchange, 2016: https://beamexchange.org/documents/2091/the_road_to_adaptive_management..pdf

converting strong beneficiary-level results into wider systemic impact by addressing the enabling conditions for replication, access and long-term market viability.

EQ15 – Impact: What difference has SIGMA made to the lives of target population and their communities according to the underlying Theory of Change and the envisaged impact? Does the catalyst approach work in increasing, for example, the income of the rural population, especially in terms of gender equality? Are the outcomes the catalysts seek to achieve reasonable outcomes to measure the wider positive effects or how could they be improved?

The review gathered significant evidence at the level of the target population and their communities of genuine, valued, and in some cases transformative impact from many SIGMA interventions. The catalyst-driven approach to creating impact leverages the commercial incentives of local entrepreneurs to boost the incomes of rural farmers and, in some cases, has served the interests and preferences of female-headed households. At the same time, wider systemic barriers to GESI integration have impeded SIGMA from reaching its full impact potential, as mentioned in previous sections (**EQ5** and **EQ8**). These barriers include limited institutional commitment for GESI integration, a lack of a market-driven approach to inclusion, and an insufficient understanding of vulnerable groups' constraints and opportunities.

In the case of each catalyst, project documents, catalyst interviews and FGDs with beneficiaries show how households are already being impacted by the availability of SIGMA's newly technologically enabled catalysts. Seed treatment services like EdAgro are improving germination rates and building foundational knowledge about modern production methods. One EdAgro client noted, "The germination capacity is very good. I planted 1,000 seeds, 980 germinated. But those wouldn't have germinated before when disease had eaten them, they had rotted."

Irrigation services are preventing total crop failure in drought years and enabling transition to higher-value crops in some cases. One irrigation service client in Shirak noted, "Last year there was drought. For more than two months not a single drop of rain fell. The potato fields were saved precisely because of this machine." At the same time, some women and farmers with extremely small plots complained that it was difficult for them to access the service, given high demand. In a characteristic comment, one farmer in Lori said, "Last year when it was very hot, every 15 days wasn't enough. And by the time the machine got to some people, 60 days might have passed."

As mentioned previously, cold storage and beekeeping were the two interventions that stand out thus far as being particularly impactful for marginalized groups. Cold storage infrastructure is enabling price arbitrage, reducing post-harvest losses, and catalyzing new agricultural investment – this has been especially attractive for female-headed households (in areas in which many male household members have traveled abroad for work), who not only cite significant income gains, but also frequently mention their decisions to invest in expanding fruit orchards because of the service. Even accounting for the storage fee of 100 drams per kilogram, this service helps farmers earn a revenue multiple of five to six times the immediate harvest-time sale price, according to FGD participants.

Meanwhile, the Beekeeping Forge Center has constructed an entirely new professional ecosystem for a sub-sector previously without structured support, generating measurable improvements in colony survival, honey yields, and beneficiary livelihoods. FGD participants spoke of significant income gains – one of them said, "Thanks to [my new] knowledge, last year I recorded a 300% growth in my apiary, both in terms of productivity and colony increase." Speaking of the support

they receive from the Beekeeping Forge, another participant said, “For a beekeeper, it’s like having everyone standing behind your back on all questions. There’s not a single question that can arise with your bees that you can’t solve.”

Across these interventions, data from FGDs consistently shows strong beneficiary satisfaction and perceived relevance, evidence-based adoption driven by observed outcomes rather than mandates, peer-learning dynamics that create self-sustaining awareness and adoption, and service delivery through trusted local intermediaries embedded in community social networks. SIGMA has also demonstrated significant seasonal employment opportunities.

However, there are significant constraints to reaching full potential for impact. For one, awareness gaps limit their reach to potential beneficiaries (particularly acute for the cold storage facility). In addition, capacity limitations in single-provider service models (particularly for irrigation) make it hard for smaller farmers to attract their attention. More broadly, systemic agricultural challenges of climate variability, irrigation scarcity, labor shortages, market failure, and input cost inflation continue to make agricultural a risky choice, especially for vulnerable households.

EQ16 – Unintended Consequences: Are there any unintended consequences? In particular, has the co-investment approach inadvertently distorted the market, crowded out smaller, non-partner businesses, or created a dependence among catalysts on donor-provided technical assistance packages?

This review did not find evidence of unintended consequences at this stage. SIGMA has not produced significant negative market distortion or crowding out of the private sector; on the contrary, there is some emerging evidence of positive "crowding in" through independent replication. While the project is effectively filling service voids in thin markets through its co-investment model, the inability of catalysts to embed technical assistance in their services is a partial systemic failure that risks long-term donor dependency. In addition, the reliance on exclusive dealerships for high-end equipment (e.g., Italian irrigation equipment) demands careful monitoring to ensure that current interventions do not inadvertently consolidate anti-competitive market power.

Going forward, SIGMA’s MEL system should be ready to detect and respond to negative unintended consequences as they arise.

4.5: Sustainability – Will the Benefits Last After the Intervention Ends?

SIGMA’s Sustainability, overall: SIGMA’s sustainability prospects are encouraging but uneven: many catalyst partners show credible commercial motivation, strong demand for their services and early revenue streams that suggest benefits can continue after direct project support, especially in cold storage, beekeeping, seed treatment and selected service models. However, financial viability at the catalyst level does not yet amount to system-level sustainability, because several models – particularly those dependent on high-cost irrigation, harvesting or mechanization equipment – remain difficult to replicate through ordinary commercial means, while technical knowledge, advisory capacity and innovation functions are still insufficiently embedded in local market actors, public institutions or commercially viable service relationships. Phase 2 should focus less on whether individual catalysts can survive and more on whether the wider market functions needed for durability and replication are in place, including finance, equipment import

and maintenance ecosystems, mid-market technology options, commercially embedded technical assistance.

EQ17 – Financial Viability: Are the catalyst partners financially sustainable over the long-term? Are the financial projections of the co-invested catalysts credible, and do they demonstrate a clear pathway to profitability and scale that does not rely on subsequent donor funding? If not the case, how can this issue be addressed in Phase 2?

SIGMA shows a high level of performance regarding financial sustainability, with the majority of catalyst partners on a clear trajectory toward independent profitability. The overwhelming demand for their services indicates that several services will continue after SIGMA support ends.

Catalyst partners have successfully established functional revenue streams through service fees, storage charges, and product sales. One catalyst offering cold storage generated 20 million AMD in storage fees with a 30% gross margin last year, while an irrigation service provider earned 2 million AMD annually from service provision. The Beekeeping Forge generates 60–70% of its income from queen bee sales (a function it developed with SIGMA support), though it remains in a high-investment phase due to significant infrastructure and renovation costs.

Market demand for SIGMA-supported services has outpaced projections in some cases, leading to rapid scaling and occasionally independent replication. Hatik Ag Cooperative reached its three-year target of serving 180 farmers in a single year with its combine harvester service.

In this regard, SIGMA support acts as a market accelerator rather than a survival mechanism, as catalysts start with the intent to grow independently. The Beekeeping Forge founders estimated that independent development of their center would have taken ten years, whereas SIGMA support compressed this timeline to three years. Other catalysts echoed this statement.

At the same time, in some cases, breaking even would be difficult without significant cost-share, which challenges the possibility of replication. This is especially true for the combine harvester partnerships, with their relatively high equipment costs, but it also holds for lower cost technology such as irrigation. When asked whether he could purchase a hose-and-reel system on his own, one catalyst noted, “I could not pay off such a loan.” This topic is addressed further under **EQ21: Replicability**.

EQ18 – Institutionalization of Knowledge: What concrete mechanisms (beyond documentation) have been put in place to ensure that the project's accumulated knowledge—such as the catalyst analysis and effective technical assistance methodologies—is owned and used by local market entities (e.g., financial institutions, business service providers) to continue market development independently?

SIGMA has not yet made significant progress creating mechanisms that institutionalize the knowledge it has created since the start of Phase 1, in part because its partnerships are still mainly limited to catalysts. Nonetheless, there are number of promising developments in this area, including the Beekeeping Forge’s newly established technical capacity, the Sevan Agritech Summit, SIGMA’s contribution to a potential national SME strategy, and the expressed interest of regional governments in promoting successful SIGMA assistance models.

The Beekeeping Forge is actively positioning itself as a driver of knowledge intensification in the beekeeping sector. It operates a periodic, three-month vocational education program and a formal beekeeping union that currently supports more than 250 members. These structures provide

continuous professional development and specialized services, such as an emergency bee response, effectively filling the gap in academic and state-led training for the sector.

The Sevan Agritech Sumit and its accompanying Agrithon could become a permanent platform for agritech innovation in Armenia. The summit is well attended, with increasing interest from regional and international actors each year, and the Agrithon expanded from 5 to 21 startups in a year. While it will take several years for these startups to demonstrate any level of commercial viability, the summit and the interest and energy it creates should contribute to increased knowledge exchange and a faster pace of innovation in Armenia's agricultural sector over time.

SIGMA has frequent, informal collaboration with the Ministry of Economy and, according to project documents, supported the Ministry to design a regional state support ecosystem for small and medium-sized enterprises. This engagement has led to the project's pilot models being formally incorporated into a forthcoming national strategy for the 2026–2030 period. However, the strategy has yet to materialize.

Lastly, several regional government representatives expressed interest in using state resources to follow the SIGMA example, promoting private service provision through private sector actors in the future. Other donors also mentioned being inspired by the SIGMA example, but none could give specific examples of interventions (aside from the Beekeeping Forge) that were worth copying.

There is a significant tension between these successful catalyst-driven models and the near-total lack of public advisory services, which were eliminated in previous government reforms. This question highlights the importance of embedding the training (or capacity building) function that SIGMA plays in the market system during Phase 2.

EQ19 – Systemic Change: Has SIGMA successfully addressed any of the Contextual and Systemic Constraints (e.g., private sector data opacity, low financial transparency) that hinder the overall functioning of the agricultural market system and if yes to what extent?

SIGMA has two routes to systemic change. On one hand, its catalyst-driven approach relies (in many cases) on crowding-in by other actors who seek to copy the models it promotes – there is little evidence that this is happening yet, but it also early in the project's life to expect to see significant signs of copying by non-supported actors. On the other hand, some of the catalysts it supports play "keystone" functions that do not require crowding-in to be systemic – these include the beekeeping center and seed treatment (on a regional basis).

For service models that rely on crowding-in to qualify as systemic (particularly the irrigation and harvesting service models), SIGMA has started the journey toward systemic change by using a co-investment model that prioritizes private sector ownership, challenging the prevailing donor-dependency mindset in Armenia. However, the likelihood of replication in many of these cases is low, as discussed in more detail under **Q21: Replication**, below. The review's recommendation that SIGMA should seek deeper leverage points (particularly for finance, capacity building and equipment access) reflects this observation – SIGMA has yet to address fundamental constraints to the proliferation of these models in a systemic way.

On a related note, in some cases, SIGMA team members mentioned examples of crowding in, but in at least one of those cases the review team found the entrepreneur in question and discovered that he had copied the technology (hose-and-reel irrigation) but not the service model (he was

using it on his own land). For this reason, we think it would be useful for SIGMA to use results chains to more clearly specify what should and what should not qualify as systemic change.

In the few cases in which a catalyst's model is performing a keystone function, SIGMA fosters systemic change merely by supporting one or a few of them. EdAgro's success as a seed cleaning and disinfection service provider means that other farmers in Gegharkunik marz can access formal state certification and spread access to elite varieties. Again, these points are explored in more detail under EQ21, below.

EQ20 – Depth of Change: What evidence is there that the project has created a self-sustaining cycle of innovation and investment in the target value chains, reducing the need for donor subsidies and promoting the adoption of GESI and climate-sensitive practices as market norms?

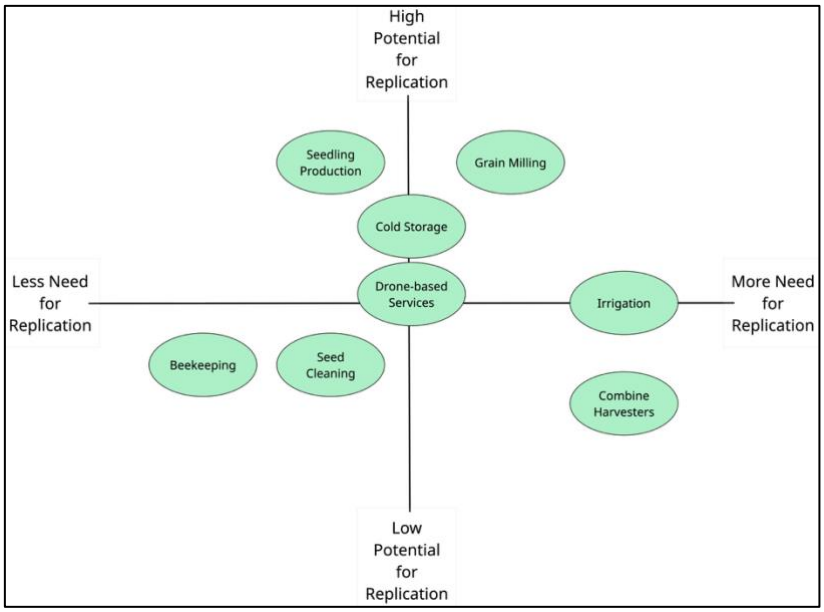
There is not much evidence yet of a self-sustaining cycle of innovation and investment for most SIGMA interventions – the Beekeeping Forge is an exception. However, SIGMA started from a low base – it had to spend a significant portion of its year-long inception phase convincing local government and private sector actors that the co-investment strategy was a smarter way to promote agricultural development than simply giving assets away. In this context, SIGMA has made laudable progress by experimenting with a wide variety of service models at this stage.

Rather than being able to sit back and watch a self-sustaining cycle of innovation and investment take off, SIGMA is entering a phase in which it will need to accelerate its experimentation through more partnerships, assiduously measure the successes and challenges of each, promote successful models and find a way to embed capacity building into market-based relationships. In other words, the self-sustaining cycle can be more realistically expected toward the end of Phase 2.

EQ21 – Replicability: To what extent are the successful interventions replicable by other private sector actors using standard commercial means, and what evidence is there that this replication is already starting in the market?

As mentioned under **EQ19: Systemic Change**, the potential for autonomous replication of SIGMA models by other actors is mixed. Some innovations, such as cold storage and irrigation, are already proving to attract a few copiers (both private actors and some regional governments that want to promote them). At the same time, models that require the purchase of expensive equipment, like high-end harvesters, remain difficult to replicate through commercial means because the purchase price for key equipment far exceeds typical bank loan limits. This would lead a copying service provider to choose cheaper, less efficient alternatives.

However, the need for replication varies by model; for example, the beekeeping and seed treatment models may not require large numbers of equivalent providers to generate systemic value. The diagram below illustrates this distinction by arranging SIGMA models on two axes: the vertical axis shows the potential for a model's replication, while the horizontal axis shows the need for replication.



On the horizontal axis, beekeeping, seed cleaning and seedling production models do not require a wave of replication, while irrigation and combine harvester models do need a critical mass of actors offering those services nationwide in order to be transformative. Cold storage, drone-based services and grain milling services sit between these two groups.

Simultaneously, the diagram shows how some critical services that need replication to be transformative are less likely to be replicated because of the considerable fixed and variable costs involved.

Grain harvesters, using German or American machines, are not viable investments for many service providers because the 55-million-dram cost of one machine significantly exceeds the standard commercial loan threshold of 10-to-20-million drams. As a result, without SIGMA assistance any normal Armenian business would opt for cheaper "Nova" harvesters from Russia, which cost around 20 million drams but are less efficient and result in higher crop losses. Without specialized financial products or higher credit limits, the market will continue to prioritize cheaper, lower-quality machinery over more efficient technology. Plus, even if a service provider could afford a high-end machine, realistically, it would be difficult to break even with a service model that prioritized the needs of small farmers.

The situation is slightly different for Italian irrigation equipment. For replicators of irrigation, the lack of a local retail network and few mechanics create significant barriers to widespread adoption. Thus, one of the main obstacles to the adoption of technologies like the Marani hose reels is a lack of physical demonstration and retail presence rather than a pure lack of funds. However, a SIGMA team member warned that “irrigation stations are not profitable as a business," according to his experience, so the question of the cost of the equipment is still relevant.

In both cases, the review raises the question of whether SIGMA’s insistence on showcasing the best possible technology creates a perception that the service models are impossible to copy without donor support. If this is the case, it would likely undermine the systemic pathway SIGMA envisions for those models, and SIGMA should consider more feasible technologies – effectively, aiming for the middle of the technology market, rather than the top. In both cases, the cost of the equipment and the difficulty of maintaining it mean that the two models that most require replication are also two of the least likely to be replicated on a broad scale.

Going forward, in addition to thinking about middle vs high-end technology, SIGMA should also experiment more with ownership models. For services that are difficult to make profitable at the smallholder level, it might consider alternatives such as community-owned models, even if these are not strictly in line with a conventional MSD approach. But given the uncertainty around what a viable model might look like, SIGMA’s best response is to support a variety of different ownership

models and assess which models are viable, under which conditions, and for which farmer segments.

5. Conclusions

Overall, SIGMA is a good program that could be a great program. It has an excellent contextual understanding of challenges of agricultural market development in Armenia, a dedicated team with significant capacity, and is positioned to be far more impactful in Phase 2. It has established a credible first-phase platform, but its potential for systemic impact remains only partially realized.

SIGMA is highly relevant to the needs of farmers and rural enterprises in mountainous marzes because it addresses real constraints around irrigation, mechanization, cold storage, seed quality, beekeeping, technical knowledge and post-harvest management. It is also broadly coherent with national agricultural priorities, local government interests and the wider donor landscape. The programme has shown that a co-investment model can mobilize capable private actors and generate services that farmers value. However, the review also concludes that SIGMA has often operated more as a high-quality asset-financing programme than as a fully developed MSD programme. Phase 2 should therefore preserve SIGMA's practical orientation and strong relationships while shifting more deliberately toward the deeper market functions that enable replication, adaptation and long-term service provision.

A central positive conclusion is that **SIGMA is already producing meaningful beneficiary-level results**. Farmers report better yields, avoided crop losses, improved seed germination, access to higher-value sales windows, reduced vulnerability to drought and greater confidence to invest in orchards and productive assets. Cold storage and beekeeping stand out as especially strong examples of commercially grounded impact, including for women and some marginalized participants. These results demonstrate the value of working through local catalysts and show that demand exists for the services SIGMA has helped introduce or strengthen. At the same time, impact remains uneven and will not automatically become systemic. Awareness gaps, capacity constraints, high equipment costs, limited finance, weak repair and retail ecosystems, and the absence of embedded technical advice all limit the ability of successful models to spread beyond the directly supported catalysts.

A second conclusion is that **SIGMA's sustainability prospects are promising but incomplete**. Many catalysts appear commercially motivated, and several are already generating credible revenue streams, which suggests that benefits can continue after project support ends. Yet financial viability at the catalyst level is not the same as system-level sustainability. Some models, especially those involving high-end irrigation or harvesting equipment, are difficult to replicate through normal commercial means and may remain dependent on subsidy unless SIGMA works more directly with equipment suppliers (selling more moderately-priced machines), financial service providers, maintenance networks and alternative ownership models. Similarly, SIGMA has created important knowledge through its partnerships, but much of that knowledge is still held by the project or individual catalysts rather than institutionalized in market actors, public systems or commercially viable advisory services.

A third conclusion is that **SIGMA's inclusion, policy and learning functions need to become more strategic**. GESI results exist, particularly in cold storage and beekeeping, but they are often incidental rather than the product of systematic market analysis, partnership design and

resourcing. Policy engagement is positive and well positioned, but it remains opportunistic rather than guided by a prioritized influence agenda. The programme also learns a great deal through day-to-day implementation, but its systems and management culture do not yet make enough use of tacit, qualitative learning to drive timely adaptation. These weaknesses do not undermine SIGMA's achievements, but they do limit the programme's ability to explain why some models work, identify who is excluded, decide when to pivot and influence the wider rules and relationships that shape agricultural market systems.

Overall, we conclude that SIGMA should not radically change its value chain focus in Phase 2. The existing portfolio remains relevant, and the strongest opportunities lie in deepening rather than replacing it. The key shift should be from supporting individual service providers toward strengthening the conditions that allow viable services to emerge, improve, replicate and endure. This means more intentional work on finance, equipment markets, technical assistance, market access, climate-resilient commercial practices, GESI-responsive business models, adaptive MEL and policy influence. If SIGMA makes this shift, it can move from demonstrating useful services to changing how agricultural market systems function in Armenia's mountainous regions. In that sense, SIGMA's Phase 1 should be understood as a successful foundation-building phase; Phase 2 should be designed as the phase in which promising pilots and partnerships are converted into wider, more inclusive and more durable systemic change.

6. Recommendations

The recommendations below are organized using a **Stop, Start, Continue** logic and prioritized according to their importance for Phase 2 design and implementation. **Priority 1** recommendations are essential to SIGMA's ability to move from strong pilots to systemic change; **Priority 2** recommendations would materially improve effectiveness, inclusion and sustainability; and **Priority 3** recommendations should be pursued as opportunities and capacity allow.

Priority 1 – Start: Shift from financing individual service providers toward deeper market functions. In Phase 2, SIGMA should deliberately target the enabling systems that determine whether successful models can replicate and endure: equipment import, retail and repair networks; financial products for machinery and working capital; commercially embedded technical advice; market access; and practical ownership models for services that are difficult to make profitable at smallholder level. This does not require changing SIGMA's value chain focus; rather, it requires using existing services as entry points to address the constraints that keep them from spreading through normal market channels.

On a practical level, SIGMA should begin by mapping the machinery import and maintenance/repair market system – this will introduce programme staff to the key actors in the market and create the knowledge base needed to identify feasible entry points. Alongside this effort, SIGMA should engage an Armenian financial services expert and explore the full range of existing and potential machinery finance offers that are available to farmers and service providers. These are indispensable pieces of rapid research that will be needed to design a more impactful strategy, helping the project pivot away from its role as an equipment financier.

Priority 1 – Start: Strengthen MSD practice, adaptive learning and portfolio management. SIGMA should use results chains, qualitative learning, regular sensemaking sessions and clearer

definitions of systemic change to guide decisions about when to scale, adapt, stop or redesign interventions. A dedicated portfolio management function should be created to connect day-to-day partnership management with systemic objectives, support calculated risk-taking and ensure that Phase 2 does not become a larger version of the current catalyst-by-catalyst model.

Priority 1 – Stop: Stop treating high-end equipment purchase as the primary pathway to market change. SIGMA should avoid reinforcing the perception that improved irrigation, harvesting or mechanization services are only possible with donor-subsidized, top-tier technology. Where replication is important, the programme should test more commercially realistic technologies, mid-market equipment options, leasing or service models, and financing arrangements that can be adopted by ordinary Armenian service providers without continued donor subsidy.

Priority 2 – Start: Make GESI a core design function rather than a secondary safeguard. SIGMA should hire a strong GESI advisor with private sector development experience and require every partnership to assess who can realistically benefit, who is likely to be excluded and what commercial incentives could make inclusion viable. GESI checkpoints should be built into partnership design and approval, with particular attention to women, displaced people and very small farmers, while also recognizing that some target groups may require services beyond current crop-focused interventions.

Priority 2 – Start: Streamline governance and approval processes. SIGMA and SDC should reduce approval bottlenecks by bypassing repeated concept-note approvals for models similar to existing partnerships, establishing a funding threshold below which SIGMA can proceed after internal review, and simplifying the committee structure by replacing the current Steering Committee and Advisory Committee arrangement with a semi-annual Advisory Committee linked to reporting and strategic learning. These changes would make SIGMA more agile without weakening accountability.

Priority 2 – Start: Rebalance MEL toward learning and systemic evidence. SIGMA should keep its strong quantitative monitoring for Outcome 1 but redesign Outcome 2 indicators so they capture policy influence, market-function change, crowding-in and institutionalization more coherently. The MEL function should be full-time, embedded in the team and equipped to conduct light-touch qualitative studies, mini-outcome harvests and practical client-data systems that are useful to catalysts as well as to the project.

Priority 2 – Continue: Keep the existing value chain focus but deepen the service logic. The review does not support a major shift away from SIGMA's current agricultural portfolio. SIGMA should continue working in irrigation, mechanization, cold storage, seed systems, beekeeping and related services, while adding market access, finance, technical advice and climate-resilient commercial practices (focused on embedding these sustainably in market systems) where these strengthen the viability and reach of existing models.

Priority 3 – Continue: Build on the strongest catalyst models while clarifying which models need replication. SIGMA should continue supporting promising keystone models such as beekeeping and seed treatment, where one or a few capable actors may generate systemic value without broad replication. For models such as irrigation and harvesting, where transformation requires many service providers, SIGMA should focus less on individual demonstrations and more on the market conditions that make replication feasible.

Priority 3 – Stop: Stop relying mainly on project-funded training as the answer to technical knowledge gaps. SIGMA should continue valuing technical assistance, but Phase 2 should focus on embedding advice in commercial relationships, catalyst services, input supplier models, public-private extension arrangements and regional knowledge platforms. This will be especially important for climate adaptation, crop management, beekeeping and post-harvest practices.

Priority 3 – Continue: Preserve SIGMA's practical strengths. SIGMA should continue its strong field presence, close collaboration with government and regional actors, intensive co-creation with catalysts and disciplined use of co-investment to secure private sector ownership. These strengths are the foundation for Phase 2; SIGMA's challenge now is to use them more strategically to influence the wider rules, relationships and support functions of Armenia's agricultural market systems.

7. Annexes

a. Evaluation Questions and Sources Used
b. SDC's Assessment Grid of the DAC Criteria
c. List of review participants
d. Analysis of the intervention logic (logframe and TOC): extent to which objectives have been achieved

Annex A: Evaluation Questions

Table 2: Evaluation Questions and Data Sources Used to Answer Them

Question	Data Sources Used to Answer Each Questions
Relevance: Is the intervention doing the right things?	
Adaptive Alignment: Given the dynamic environment and the contextual changes, does the current agricultural intervention portfolio still address the most critical, binding constraints to the target market systems or are the interventions driven primarily by available catalysts?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives.
Targeting and Need: To what extent are the project's chosen value chains and intervention areas (e.g., the focus on the grain value chain) relevant to the immediate and long-term economic priorities of the country and the livelihood needs of the most vulnerable target groups? Which value chains and intervention areas are more critical to remain as a priority in Phase 2?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives, FGDs with beneficiaries, including women farmers.
MSD Rationale: Is the use of the MSD approach and private sector co-investment the most appropriate and relevant strategy, considering the documented market features such as the high degree of informality and the low financial transparency among potential partners? *Are any adaptations to the methodology warranted, given the socio-economic profile of the participants?*	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives.
Coherence: How well does the intervention fit the wider context?	
Policy Coherence: How effectively does the SIGMA project leverage its interventions to influence broader policy and regulatory frameworks (e.g., related to agricultural digitalization or financing), ensuring alignment with national government strategies and avoiding conflict with other donor initiatives?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives.
GESI and Climate Integration: Are the GESI and climate-resilience strategies conceptually coherent with the market's current incentives, or do they rely solely on project subsidy, thereby undermining the market-driven nature of the intended systemic change? What are the gaps in design, implementation structures, or resource allocation to ensure that recommendations are not only systemic but also practical? Depending on the answer, how can the project address these issues and/or further integrate GESI and climate-resilience strategies in its implementation to improve effectiveness?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives, FGDs with beneficiaries, including women farmers.
Green MSD: If the project should shift solely and fully to a focus on green economy in Phase II, what could be the implications, e.g. will other program objectives be compromised or will the project not be coherent anymore, etc.?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives.
Complementarity: To what degree can SIGMA claim that participants are able to access multiple lines of support? Is there evidence that complementarity creates a larger benefit than simply accessing project-support products and services separately?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives, FGDs with beneficiaries, including women farmers.
Effectiveness: Is the intervention achieving its intended results	
GESI: To what extent do the project interventions improve GESI considerations with regards to the end target groups? What were the key hindering factors to achieve better effectiveness? Which type of interventions were particularly effective in terms of GESI and why?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives, FGDs with beneficiaries, including women farmers.

Cost-Effectiveness of Catalysts: What is the cost and benefit of external private sector investment generated (crowding-in) by SIGMA, compared to traditional project delivery models? Is the high investment in administrative and financial assistance to catalysts justified by the quality or scale of the resulting interventions?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives.
Procurement and Time Efficiency: Are the internal due diligence and procurement processes for co-investment sufficiently streamlined for an agile MSD project? What is the average lead time for a standard intervention compared to internal targets and how does this affect the project's ability to respond quickly to market opportunities?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives.
Risks: To what extent was the project mindful of various risks that were identified at the beginning? How efficient was the implementation in terms of applying Conflict Sensitive Program Management (CSPM) approach, "Do No Harm" principle and avoiding market distortion?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives.
Management Efficiency: Given the challenges in data collection due to partner reluctance, is the current M&E framework (especially for Outcome 2 indicators) an efficient use of monitoring resources, or should the project pivot to more qualitative/proxy indicators for systemic change? To what extent has this issue affected the due diligence and selection of the catalyst partners? *How burdensome is the data collection process for catalyst partners, and does data collection pose an opportunity to further professionalize their business models?*	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives.
Governance: How can the project governance be more efficient? What was the key role of the local subcontracted partner? To what extent were the resources and capacities of the local partner efficiently used? Is the team structure efficient?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives.
Learning: Does the program's design and management demonstrate learning, and can SIGMA show how learning since the program's start has influenced the gradual (or abrupt) adaptation of its tactics and/or strategy?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives.
Impact: What difference has the intervention made?	
Impact: What difference has SIGMA made to the lives of target population and their communities according to the underlying Theory of Change and the envisaged impact? Does the catalyst approach work in increasing, for example, the income of the rural population, especially in terms of gender equality? Are the outcomes the catalysts seek to achieve reasonable outcomes to measure the wider positive effects or how could they be improved?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives, FGDs with beneficiaries, including women farmers.
Unintended Consequences: Are there any unintended consequences? In particular, has the co-investment approach inadvertently distorted the market, crowded out smaller, non-partner businesses, or created a dependence among catalysts on donor-provided technical assistance packages?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives, FGDs with beneficiaries, including women farmers.
Sustainability: Will the benefits last after the intervention ends	
Financial Viability: Are the catalyst partners financially sustainable over the long-term? Are the financial projections of the co-invested catalysts credible, and do they demonstrate a clear pathway to profitability and scale that does not rely on subsequent donor funding? If not the case, how can this issue be addressed in Phase 2?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives.
Institutionalization of Knowledge: What concrete mechanisms (beyond documentation) have been put in place to ensure that the project's accumulated knowledge—such as the	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives.

catalyst analysis and effective technical assistance methodologies—is owned and used by local market entities (e.g., financial institutions, business service providers) to continue market development independently?	
Systemic Change: Has SIGMA successfully addressed any of the Contextual and Systemic Constraints (e.g., private sector data opacity, low financial transparency) that hinder the overall functioning of the agricultural market system and if yes to what extent?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives, FGDs with beneficiaries, including women farmers.
Depth of Change: What evidence is there that the project has created a self-sustaining cycle of innovation and investment in the target value chains, reducing the need for donor subsidies and promoting the adoption of GESI and climate-sensitive practices as market norms?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives, FGDs with beneficiaries, including women farmers.
Replicability: To what extent are the successful interventions replicable by other private sector actors using standard commercial means, and what evidence is there that this replication is already starting in the market?	Project documents, KIIs with other donors, catalysts, SIGMA staff and government representatives, FGDs with beneficiaries, including women farmers.

Annex B: SDC's Assessment Grid of the DAC Criteria

The table below provides short explanations for each of the EQs used to guide this review. Each question is also given a score from 0 to 4, with 0 indicating extremely poor performance and 4 indicating excellent performance.

Key aspects based on DAC Criteria	**Score** (0, 1, 2, 3 or 4)	**Justification** (Short explanation for your score or why a criterion was not assessed)
Relevance **Note**: the assessment here captures the relevance of objectives and design *at the time of evaluation*. In the evaluation report, both relevance at the design stage as well as relevance at the time of evaluation should be discussed.		
Adaptive Alignment: Given the dynamic environment and the contextual changes, does the current agricultural intervention portfolio still address the most critical, binding constraints to the target market systems or are the interventions driven primarily by available catalysts?	3	SIGMA's portfolio continues to address core binding constraints in mountainous agricultural market systems, including irrigation, mechanization, storage, seed quality and technical knowledge. However, some interventions are still shaped by the availability of capable catalysts, and Phase 2 should move toward addressing deeper constraints such as finance, equipment markets and advisory services.
Targeting and Need: To what extent are the project's chosen value chains and intervention areas (e.g., the focus on the grain value chain) relevant to the immediate and long-term economic priorities of the country and the livelihood needs of the most vulnerable target groups? Which value chains and intervention areas are more critical to remain as a priority in Phase 2?	3	The chosen value chains and intervention areas are broadly aligned with national agricultural priorities and the livelihood needs of many small farmers. Relevance is weaker for displaced people and very small farmers, so Phase 2 should retain the current portfolio while designing more intentional inclusion pathways.
MSD Rationale: Is the use of the MSD approach and private sector co-investment the most appropriate and relevant strategy, considering the documented market features such as the high degree of informality and the low financial transparency among potential partners? *Are any adaptations to the methodology warranted, given the socio-economic profile of the participants?*	3	MSD and co-investment are appropriate for Armenia's thin and informal markets because they promote ownership and reduce direct delivery. SIGMA should nevertheless apply MSD more fully by using results chains, adaptive learning and systemic-change logic to move beyond asset financing.
Coherence		
Policy Coherence: How effectively does the SIGMA project leverage its interventions to influence broader policy and regulatory frameworks (e.g., related to agricultural digitalization or financing),	2	SIGMA is well aligned with government priorities and donor initiatives and has strong access to public counterparts. Its policy influence remains opportunistic, so

ensuring alignment with national government strategies and avoiding conflict with other donor initiatives?		Phase 2 should define a clearer policy agenda linked to extension, finance and market-system constraints.
GESI and Climate Integration: Are the GESI and climate-resilience strategies conceptually coherent with the market's current incentives, or do they rely solely on project subsidy, thereby undermining the market-driven nature of the intended systemic change? What are the gaps in design, implementation structures, or resource allocation to ensure that recommendations are not only systemic but also practical? Depending on the answer, how can the project address these issues and/or further integrate GESI and climate-resilience strategies in its implementation to improve effectiveness?	2	Climate-resilient interventions are generally coherent with market incentives because they solve practical production and post-harvest constraints. GESI is less systematically integrated and needs stronger analysis, staffing and design checkpoints to become a core part of the market approach.
Green MSD: If the project should shift solely and fully to a focus on green economy in Phase II, what could be the implications, e.g. will other program objectives be compromised or will the project not be coherent anymore, etc.?	3	A full shift to a narrow green-economy focus is not warranted and could limit relevant work in marketing, logistics and other market functions. SIGMA should instead continue embedding climate resilience where it strengthens commercial viability and farmer resilience.
Complementarity: To what degree can SIGMA claim that participants are able to access multiple lines of support? Is there evidence that complementarity creates a larger benefit than simply accessing project-support products and services separately?	2	Evidence of complementarity is still limited, although farmers clearly understand the value of combining services such as seed quality, irrigation and storage. Phase 2 should deliberately design and monitor service bundles so that farmers can access mutually reinforcing support.
Effectiveness		
GESI: To what extent do the project interventions improve GESI considerations with regards to the end target groups? What were the key hindering factors to achieve better effectiveness? Which type of interventions were particularly effective in terms of GESI and why?	2	SIGMA has generated meaningful GESI benefits, especially through cold storage and beekeeping, where women and some marginalized participants can engage commercially. These results are mostly incidental rather than systematically designed, and stronger GESI expertise and screening are needed.
Cost-Effectiveness of Catalysts: What is the cost and benefit of external private sector investment generated (crowding-in) by SIGMA, compared to traditional project delivery models? Is the high investment in administrative and financial assistance to catalysts justified by the quality or scale of the resulting interventions?	3	The catalyst model has mobilized private investment and generated valued services, but its cost-effectiveness depends on whether SIGMA can show scale and systemic change. The current approach is promising but should reduce reliance on

		expensive high-end technology where replication is unlikely.
Procurement and Time Efficiency: Are the internal due diligence and procurement processes for co-investment sufficiently streamlined for an agile MSD project? What is the average lead time for a standard intervention compared to internal targets and how does this affect the project's ability to respond quickly to market opportunities?	3	SIGMA's partnership process is predictable and appreciated by catalysts, but it is too slow for an agile MSD programme. Removing repeated approval steps and setting reasonable delegation thresholds would help the project respond faster to market opportunities.
Risks: To what extent was the project mindful of various risks that were identified at the beginning? How efficient was the implementation in terms of applying Conflict Sensitive Program Management (CSPM) approach, "Do No Harm" principle and avoiding market distortion?	3	SIGMA has been mindful of key contextual and market risks and no major negative market distortion was found. However, the programme may be overly risk-averse in partner selection, which could limit experimentation and learning.
Management Efficiency: Given the challenges in data collection due to partner reluctance, is the current M&E framework (especially for Outcome 2 indicators) an efficient use of monitoring resources, or should the project pivot to more qualitative/proxy indicators for systemic change? To what extent has this issue affected the due diligence and selection of the catalyst partners? *How burdensome is the data collection process for catalyst partners, and does data collection pose an opportunity to further professionalize their business models?*	3	Outcome 1 monitoring is broadly adequate, but Outcome 2 indicators are not well suited to capturing policy influence, crowding-in or systemic change. MEL should remain quantitative where useful while adding qualitative learning and partner-facing data systems.
Governance: How can the project governance be more efficient? What was the key role of the local subcontracted partner? To what extent were the resources and capacities of the local partner efficiently used? Is the team structure efficient?	3	Governance is more cumbersome than necessary, especially because of repeated SDC approvals and overlapping committee structures. Phase 2 should streamline approval thresholds, simplify committees and strengthen portfolio, MEL and GESI roles.
Learning: Does the program's design and management demonstrate learning, and can SIGMA show how learning since the program's start has influenced the gradual (or abrupt) adaptation of its tactics and/or strategy?	3	SIGMA demonstrates strong contextual learning, but much of its tacit learning is not yet systematically used to adapt strategy. Regular sensemaking, qualitative studies and clearer results chains would help the programme pivot more quickly.
Impact		
Impact: What difference has SIGMA made to the lives of target population and their communities according to the underlying Theory of Change and the envisaged	3	SIGMA has produced persuasive early impacts, including improved yields, avoided losses, better sales timing and stronger

impact? Does the catalyst approach work in increasing, for example, the income of the rural population, especially in terms of gender equality? Are the outcomes the catalysts seek to achieve reasonable outcomes to measure the wider positive effects or how could they be improved?		beekeeping and cold-storage outcomes. The catalyst approach is working for many farmers, but wider impact depends on improving access, replication and market viability.
Unintended Consequences: Are there any unintended consequences? In particular, has the co-investment approach inadvertently distorted the market, crowded out smaller, non-partner businesses, or created a dependence among catalysts on donor-provided technical assistance packages?	3	The review did not find significant negative unintended consequences or evidence of market distortion at this stage. SIGMA should nevertheless monitor risks of donor dependency, exclusive supplier advantages and crowding out as the portfolio expands.
Sustainability		
Financial Viability: Are the catalyst partners financially sustainable over the long-term? Are the financial projections of the co-invested catalysts credible, and do they demonstrate a clear pathway to profitability and scale that does not rely on subsequent donor funding? If not the case, how can this issue be addressed in Phase 2?	3	Many catalyst partners show credible commercial motivation and early revenue streams, suggesting that several services can continue after project support. Financial sustainability is weaker for high-cost equipment models unless finance, maintenance and ownership constraints are addressed.
Institutionalization of Knowledge: What concrete mechanisms (beyond documentation) have been put in place to ensure that the project's accumulated knowledge—such as the catalyst analysis and effective technical assistance methodologies—is owned and used by local market entities (e.g., financial institutions, business service providers) to continue market development independently?	~~2~~	SIGMA has created useful knowledge, but it is not yet sufficiently institutionalized in market actors, financial institutions or public systems. Promising platforms such as the Beekeeping Forge, Agritech Summit and government engagement should be used more deliberately to embed knowledge beyond the project.
Systemic Change: Has SIGMA successfully addressed any of the Contextual and Systemic Constraints (e.g., private sector data opacity, low financial transparency) that hinder the overall functioning of the agricultural market system and if yes to what extent?	~~3~~	SIGMA has begun addressing systemic constraints by demonstrating viable services and promoting private-sector ownership, but deeper constraints remain largely unresolved. Stronger work on finance, equipment markets, advisory services and policy influence is needed for more durable systemic change.
Depth of Change: What evidence is there that the project has created a self-sustaining cycle of innovation and investment in the target value chains, reducing the need for donor subsidies and promoting the adoption of GESI and climate-sensitive practices as market norms?	~~3~~	Evidence of a self-sustaining cycle of innovation and investment is still limited, except in stronger cases such as beekeeping. Phase 2 should accelerate experimentation while embedding knowledge, climate resilience and inclusion into commercially viable market relationships.

Replicability: To what extent are the successful interventions replicable by other private sector actors using standard commercial means, and what evidence is there that this replication is already starting in the market?	3	Replicability is mixed: some models such as cold storage and irrigation show early copying, while high-cost harvesting and mechanization models are difficult to replicate commercially. SIGMA should distinguish between keystone models that do not need broad replication and service models that require many market actors to scale.

Annex C: List of Review Participants (internal only)

Implementer	KII	Nayeem Kasem (DevLearn)
Implementer	KII	Zanga Sadiq (DAI HQ)

Annex D: Analysis of the intervention logic (logframe and TOC)

Under this section, the review analyzes SIGMA's Theory of Change (TOC) and logframe, as the two central frameworks for describing its overall intervention logic, to assess the degree to which they are appropriate to the program.

In general, the **TOC is adequate as a high-level narrative for Phase 1**, but it is outdated and insufficiently specific. Because it still includes tourism, it no longer reflects the current programme scope. More importantly, it does not clearly articulate the pathways from SIGMA's interventions to market-system change: for example, how co-investment with catalysts (under OC1) is expected to produce replication and improved service markets. Under OC2, it does not adequately explain how outputs could lead to institutionalized knowledge, stronger finance, policy changes or better advisory systems.

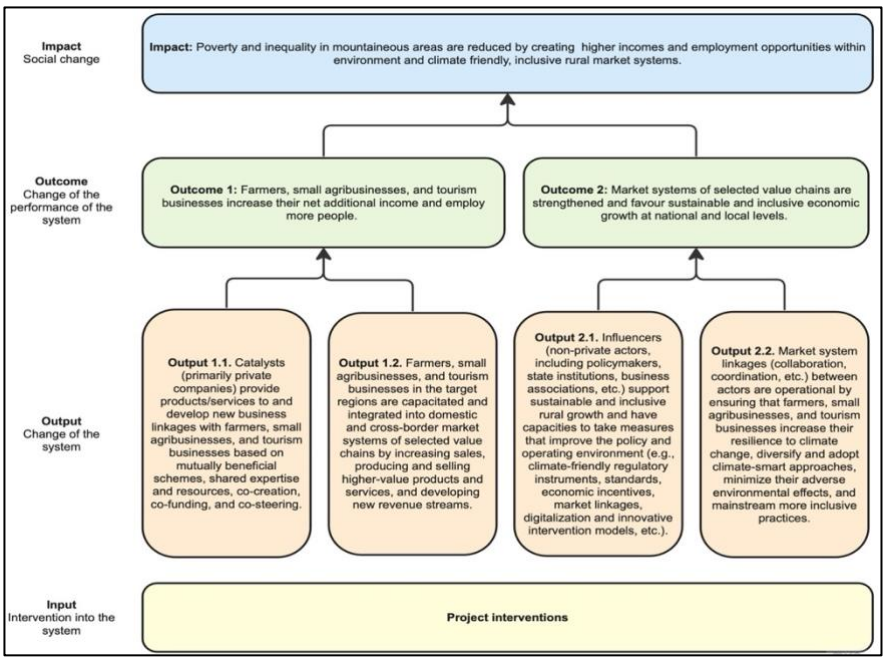
The **logframe is more operationally useful than the TOC**, especially for tracking Outcome 1 results. However, it is weak regarding Outcome 2 because, while the TOC points toward policy, climate resilience and systemic change, the logframe's Outcome 2 indicators focus heavily on crowding-in, exports and linkages, with no strong policy-level or market-function indicators.

There are other inconsistencies. For example, farmer income is the focus of Outcome 1 in the TOC. But in the logframe farmer income is one of the three impact indicators. Taking these reasons together, it seems that the TOC and logframe do not describe the same program.

Looking ahead to Phase 2, SIGMA should significantly revise both the TOC and the logframe to describe a clearer pathway toward systemic change. This section gives a brief review and recommendations for revising the TOC and logframe.

SIGMA's TOC

The TOC is detailed in the diagram below. It still includes tourism and has not changed since the ProDoc.



On its own, it depicts the broader rationale for SIGMA's interventions, although it has several weaknesses. For one, it lacks sufficient detail to be convincing from a systemic change perspective.

In addition, it does not show the line of influence SIGMA interventions theorize. Systemic change should result from the demonstrations created by interventions under Outcome 1 and be supported by policy and other interventions. In both the TOC and the logframe, however, systemic change results only from interventions under Outcome 2.

Going forward, SIGMA should consider revising the TOC to focus on three main pathways of influence:

- **Pathway 1:** Working through catalysts to improve availability of high-quality, mechanized service provision to farmers.
- **Pathway 2:** Working through equipment suppliers, financial service providers and other key actors to fundamentally change the market for equipment and advice.
- **Pathway 3:** Influencing the policy environment to improve enabling conditions, creating a business environment that is more conducive to a dynamic agricultural market system

Above these pathways, SIGMA aims to achieve sustainable, systemic outcomes that will lead to sustained impacts on farmer income.

SIGMA's Logframe

The logframe (below) has several weaknesses that could be resolved by making it more consistent with a well-designed TOC. It should keep income as an impact (and bring the TOC into alignment with that) while making sure that it can speak to significant policy changes (currently missing as an outcome) and the higher-level systemic changes that should result from complementary interventions.

Level	Indicator
Impact	I1.1. Poverty rate in Shirak, Lori, Tavush, and Gegharkunik.
	I1.2. Change in yearly net income (salary/wage or profit) of individuals in reporting currency, adjusted for inflation. (IED_TRI_1)
	I1.3. Number of persons from left behind groups benefiting from the project to reduce exclusion, discrimination and inequality. (POV_ARI_1)
Outcome 1	OC1.1 Number of smallholder farmers with increased incomes from agricultural production. (AFS_ARI_1, SPO 3.7)
	OC1.2. Number of persons having new or better employment. (IED_ARI_2, SPO 3.1
	OC1.3. Number of persons who consider that they are more resilient to deal with the adverse effects of climate change and/or that their livelihoods have improved thanks to better management of natural resources.
	OC1.4. Number of migrants and forcibly displaced persons reached by interventions that improved their livelihoods and employability. (MIG_ARI_2)
	OC1.5. Proportion of women with a positive perception on their influence on business and economic-related decision-making (IED_TRI_5)
Outcome 2	OC2.1. Number of new catalysts crowded in
	OC2.2. Total value of investments into intervention models from new catalysts crowded in.
	OC2.3. Number of new smallholder farmers crowded in.
	OC2.4. Volume of exports facilitated by the project in agriculture.
Output 1.1	OP1.1.1 Number of private partners that the project partners with to develop and implement project interventions. (IED_CSI_2)
	OP1.1.2 The value of investments made by private partners to develop and implement project interventions. (IED_CSI_3)
	OP1.1.3 Number of new products/services initiated by catalysts.
Output 1.2	OP1.2.1 Number of smallholder farmers reached by catalysts and/or SIGMA.
	OP 1.2.2. Number of persons trained on climate change, DRR and environmental issues. (CCE_ARI_2)
Output 2.1	OP2.1.1 Number of knowledge exchanges and multi-stakeholder dialogues organized on climate change and environmental issues.
	OP2.1.2 Number of initiatives involving influencers to improve the policy and operating environment
	OP2.1.3 Measures taken by influencers to improve the policy and operating environment
Output 2.2	OP2.2.1 Number of new linkages established within core market systems across different regions.
	OP 2.2.2 Number of new cross-border market linkages established in the supported value chains.

For systemic change, it should not try to capture OC2.2 and OC2.3 – those will be extremely difficult to collect and even more difficult to verify. While they may be useful bits of information for project staff to consider, they should not be raised to the level of the logframe.

Instead, it could include more specific outcome indicators covering:

- new service providers copying SIGMA models,
- new equipment suppliers/importers adapting their sales approaches,
- new financial institutions introducing and adapting products to meet the needs of all types of actors, and
- significant policy changes.

These outcomes should be the result of the three intervention pathways described in the TOC section. Copying SIGMA models should be the main outcome indicator for the first pathway, while outcomes related to new equipment suppliers and financial institutions would relate to the second pathway. Significant policy changes would obviously be the result of the third pathway.

In summary, **the current TOC and logframe have been adequate for Phase 1 accountability but are not adequate for Phase 2 strategic management**. They should be revised to align with SIGMA's current agricultural focus, remove outdated elements, connect catalyst work to systemic pathways, and introduce stronger indicators for replication, finance and equipment ecosystems and policy influence.

Management response to the External Review: Sustainable Inclusive Growth in Mountainous Armenia (SIGMA), Phase I, 2023 - 2026

The Management Response (MR) outlines the SDC's stance on the recommendations of the 'External Review: Sustainable Inclusive Growth in Mountainous Armenia (SIGMA), Phase I, 2023 - 2026.

Assessment of the review

The review was conducted by the Canopy Lab including Tim Sparkman (lead) and Anna Harutyunyan (local consultant), based on the terms of reference by the Swiss Cooperation Office (SCO) in Armenia. For peer-reviewing the team was accompanied by Zinia Rashid, the Programme Manager of the SCO Bangladesh.

The review process was well managed and included the close involvement of Ursula Läubli, the Deputy Head of Mission/Deputy Regional Director of SCO South Caucasus and Artur Pokrikyan, the Inclusive Economic Development Programme Lead/Economic Advisor of the SCO Armenia.

The main objective was to assess SIGMA Phase 1, with a focus on systemic change, sustainability, catalyst selection, gender equality and social inclusion (GESI), governance and the efficient use of resources. SDC appreciates the comprehensiveness of the external review report. It provides valuable qualitative insights into the key dimensions of SIGMA Phase 1 performance. While parts of the report could have been more analytical and concise, particularly by reducing repetition, we value the review team's ability to identify both achievements and areas for improvement and to recognize the project's continued relevance. Overall, the review provides a balanced and constructive assessment of the project and the recommendations in the report are considered useful for guiding the project's orientation, effectiveness and efficiency of the next phase of SIGMA.

Main findings

The review concludes that SIGMA Phase 1 demonstrates strong contextual understanding, credible early results and significant potential for deeper impact. At the same time, SIGMA needs to sharpen its strategy, better comply with the Market Systems Development (MSD) principles, strengthen adaptive learning, address governance and process bottlenecks, and pursue the systemic enablers that would allow successful models to spread and endure.

The external review team provided recommendations which are prioritized according to their importance for Phase 2 design and implementation. Priority 1 recommendations are essential to SIGMA's ability to move from strong pilots to market systems transformation; Priority 2 recommendations would materially improve effectiveness, inclusion and sustainability; and Priority 3 recommendations should be pursued where opportunities and capacity allow. There are no recommendations requiring immediate action already within Phase 1 implementation. SCO Armenia is fully committed to addressing these recommendations and ensuring that the project continues to evolve and contribute meaningfully to Armenia's agricultural sector development in a more effective way.

These recommendations will be discussed with the implementing partner DAI Global UK during the SIGMA Phase 2 design workshop (date TBD), which will provide a basis for developing the ProDoc based on the measures outlined below. The SIGMA Phase 2 design workshop will also provide the platform to engage and exchange with the key political stakeholders such as the Ministry of Economy.

Of the ten recommendations for the strategic priorities of Phase 2, eight are 'fully agreed' (green) and two are 'partially agreed' (orange) – see the table below:

1. Priority 1 – Shift from financing individual service providers toward deeper market functions.	
2. Priority 1 – Strengthen MSD practice, adaptive learning and portfolio management.	
3. Priority 1 – Stop treating high-end equipment purchase as the primary pathway to market change.	
4. Priority 2 – Make GESI a core design function rather than a secondary safeguard.	
5. Priority 2 – Streamline governance and approval processes.	
6. Priority 2 – Rebalance MEL toward learning and systemic evidence.	
7. Priority 2 – Keep the existing value chain focus but deepen the service logic.	
8. Priority 3 – Build on the strongest catalyst models while clarifying which models need replication.	
9. Priority 3 – Stop relying mainly on project-funded training as the answer to technical knowledge gaps.	
10. Priority 3 – Preserve SIGMA's practical strengths.	
Fully agree	Partially agree / Disagree

Overview of recommendations, management response and measures

Recommendation 1		
Shift from financing individual service providers toward deeper market functions.		
Management response		
Fully agree	Partially agree	Disagree
Comment: Financing individual service providers, despite its catalytic value, is insufficient to drive systems-level change across priority value chains. Growth and market systems transformation should become a central focus of future interventions through new entry points and engagement with stakeholders operating at the micro, meso and macro levels. Direct co-financing of catalyst partners should gradually be phased out and replaced by approaches that unlock sustainable and inclusive market development.		
Measures	Responsibility	Timing
a) Revisit SIGMA intervention strategy to focus more on market functions supporting priority value chains (access to inputs and machinery, access to finance, policy changes, etc.). Consequently, the Theory of Change (ToC) and results chains will require a significant revision as well.	SDC/Implementing partner	Phase 2 Design Workshop
b) Strengthen the project's role at the policy level and use existing government access more strategically rather than opportunistically. Create a prioritized policy-level objectives and translate those into items of policy dialogue at different levels by aligning with the government's economic reform agenda (e.g. export diversification, quality standards of agricultural produce, productivity, etc.). Further suggestions on the engagement and encouragement of regional governments to replicate successful service models, turning successful results into public-sector scaling mechanisms shall be explored.	SDC/Implementing partner	Phase 2 Design Workshop

Recommendation 2			
Strengthen MSD practice, adaptive learning and portfolio management.			
Management response			
Fully agree	Partially agree	Disagree	
Comment: The review identifies a need to strengthen MSD capacities within the local team and portfolio-level ambitions that promote complementarity. The team should make more systematic use of MSD principles, DCED Standard and tools, including results chains, clear definitions of systemic change and structured adaptive management processes that allow regular sensemaking.			
Measures		Responsibility	Timing
a) Ensure that SIGMA Phase 2 design, implementation, monitoring, evaluation and learning (MEL) are fully compliant with the DCED Standards, international and local evidence.		Implementing partner	Phase 2 ProDoc
b) Ensure that there is a dedicated full-time MSD specialist in the local team for the overall portfolio management.		Implementing partner	Phase 2 ProDoc
c) Ensure that strong capacities, up-to-date expertise and access to global good practice are leveraged to deliver results in line with MSD principles together with strengthened result-based management and strategic steering.		Implementing partner	Phase 2 ProDoc

Recommendation 3			
Stop treating high-end equipment purchase as the primary pathway to market change.			
Management response			
Fully agree	**Partially agree**	Disagree	
Comment: We agree that SIGMA is expected to move away from being an equipment funder and fully embrace the facilitation role by ensuring that end beneficiaries have access to the sustainable agricultural inputs and machinery with viable solutions. However, the procurement decisions should not only be guided by the price but also the added value. Value-for-money assessments should consider market incentives and support a systems approach.			
Measures		Responsibility	Timing
a) SIGMA will need to explore if and how they can work with input suppliers or other entry points to ensure that private sector actors such as service providers, especially those that have catalytic capacity, have equal access to quality and affordable agricultural inputs and machinery.		SDC/Implementing partner	Phase 2 Design Workshop
b) SIGMA will need to address replication constraints by mapping machinery import, maintenance and repair systems, exploring equipment and machinery financial schemes and ownership models.		Implementing partner	Phase 2 ProDoc

Recommendation 4		
Make GESI a core design function rather than a secondary safeguard.		
Management response		
Fully agree	Partially agree	Disagree
Comment: Mainstreaming GESI should be a first priority in the recommendations of the review. Phase 2 should therefore integrate GESI considerations into core project design, implementation and learning processes rather than treating them as a secondary safeguard.		

Measure	Responsibility	Timing
a) Strategically revise the GESI approach and ensure that it is addressed and practiced at all levels with priority, especially also the project management level. Review and strengthen existing GESI requirements to effectively address it throughout the whole project cycle management. Develop profiling methods for target groups to study in detail their needs, the accessibility requirements and take up by interventions.	SDC/Implementing partner	Phase 2 Design Workshop
b) Explore strategies to facilitate GESI uptake by project team and partners and stakeholders. All partnerships shall assess likely target groups, excluded groups and inclusion barriers as part of intervention design.	SDC/Implementing partner	Phase 2 Design Workshop
c) Ensure that a full-time GESI specialist is part of the local team with enough empowerment and decision-making capacity to nudge the project implementation.	Implementing partner	Phase 2 ProDoc

Recommendation 5		
Streamline governance and approval processes.		
Management response		
Fully agree	Partially agree	Disagree
Comment: During Phase 1, the intervention approval process proved overly burdensome and should be revised. In a mandate project with MSD approach as SIGMA, the implementing partner has the full responsibility and necessary level of flexibility to reach the expected results.		

Measures	Responsibility	Timing
a) Reconsider the governance and approval processes of the project to make it fit for purpose. Establish a budgetary threshold that allows SIGMA to approve interventions independently. Assess the existing partnership models to suggest a meaningful threshold.	SDC/Implementing partner	Phase 2 Design Workshop
b) Reconsider the team structure, competences, roles and responsibilities, including clarifying the roles of DAI HQ, DAI Armenia, AMPERA and other actors involved in implementation, also in regard of financial management.	Implementing partner	Phase 2 ProDoc
c) Revise the approach of Steering and Advisory Committees and streamline the decision-making levels.	SDC/Implementing partner	Phase 2 Design Workshop

Recommendation 6		
Rebalance MEL toward learning and systemic evidence.		
Management response		
Fully agree	Partially agree	Disagree
Comment: We appreciate SIGMA's strong quantitative approach (e.g., commercial feasibility of interventions, cost-benefit assessments, etc.). Given the contextual developments and phasing of the project, this should remain a critical element of SIGMA. While monitoring and evaluation processes are largely established, learning processes remain inconsistent. On this foundation the project processes should allow qualitative learning, regular sensemaking, capture tacit knowledge and qualitative insights from monitoring.		

Measures	Responsibility	Timing
a) Develop a MEL framework with a stronger focus on learning and adaptive management. Streamlined internal processes should ensure that also important	Implementing partner	Phase 2 ProDoc

qualitative information is systematically captured, reflected upon and translated into implementation decisions.		
b) Introduce practical tools such as outcome harvesting target group case studies or market actor outcome stories to capture qualitative information while keeping the monitoring capacity feasible.	Implementing partner	Phase 2 ProDoc
c) Co-design monitoring systems that generate also useful information to catalysts and other partners. Additionally, the project is expected to ensure that learning is shared and used by these stakeholders.	Implementing partner	Phase 2 ProDoc
d) Ensure a full-time MEL specialist as part of the team with strong focus on learning.	Implementing partner	Phase 2 ProDoc
e) Ensure that project indicators, such as currently Outcome 2, are adapted based on a new TOC and result chains.	Implementing partner	Phase 2 ProDoc

Recommendation 7		
Keep the existing value chain focus but deepen the service logic.		
Management response		
Fully agree	**Partially agree**	Disagree
Comment: We acknowledge that all the priority value chains are relevant for Armenia. However, if the service logic is to be deepened and given the limited funding, some of the value chains might not remain a priority at an equal scale. The potential consolidation and prioritization of value chains should be carefully assessed during Phase 2 design in light of available resources and the ambition to achieve deeper systemic outcomes.		
Measures	Responsibility	Timing
a) An assessment of the priority value chains should be conducted considering the recommendation to deepen the service logic (e.g. adding finance or technical advice) Contextual developments should be fully reflected in the analysis and corresponding risk assessment.	Implementing partner	Phase 2 ProDoc
b) In addition to the above, SIGMA Phase 2 should focus explicitly more on feasible improvements towards green approaches. It should, for example, mainstream climate and environment assessment into each intervention design.	SDC, Implementing partner	Phase 2 Design Workshop
c) Similarly, the project should continue to systemically evaluate the potential of using digital solutions throughout interventions and partnerships.	SDC, Implementing partner	Phase 2 Design Workshop

Recommendation 8		
Build on the strongest catalyst models while clarifying which models need replication.		
Management response		
Fully agree	Partially agree	Disagree
Comment: Based on the recommendation to improve the systemic change and deepen the service logic, which requires a reduction in directly co-funding catalysts, the following needs to be discussed: Which catalyst models can be a) kept largely as they are due to their existing promising potential for systemic change, b) which models can be replicated while at the same time new entry points for systemic change added (deepening the service logic) and c) which models should no longer be actively replicated.		
Measures	Responsibility	Timing

a) The review's "need vs potential for replication" framework provides a useful basis to discuss the highlighted three pathways. A further discussion needs to consider also the structural barriers that affect the potential for replication.	SDC, Implementing partner	Phase 2 Design Workshop

Recommendation 9		
Stop relying mainly on project-funded training as the answer to technical knowledge gaps.		
Management response		
Fully agree	Partially agree	Disagree
Comment: The direct provision of trainings to the end beneficiaries by the project team should not continue. SIGMA needs to ensure that within the priority market systems capacity-building, training and advisory services are available and accessible for target groups based on market incentives.		
Measures	Responsibility	Timing
a) Address how trainings can be provided not through direct donor support and which of the suggested examples from the review are the most viable, namely, commercial market training, catalysts providing training services, input supplier models, etc.	Implementing partner	Phase 2 ProDoc
b) Facilitate partnerships that strengthen public-private advisory systems and ensure access to business development services.	SDC, Implementing partner	Phase 2 Design Workshop
c) Support the institutionalization of technical knowledge and explore synergies with MAVETA to facilitate access to VET institutions and other related stakeholders.	SDC, Implementing partner	Phase 2 Design Workshop

Recommendation 10		
Preserve SIGMA's practical strengths.		
Management response		
Fully agree	Partially agree	Disagree
Comment: We appreciate the SIGMA team's strong relationship building, contextual understanding, practical approach and openness to learning and adaptation. We also appreciate the positive feedback on SIGMA's practical strengths by the review. The project has demonstrated its ability to exchange closely with different types of stakeholders and achieve results. However, these relationships and networks should be leveraged strategically to promote systemic change while avoiding dependency, market distortion and preferential treatment. In line with Recommendations 1, 2 and 4, the team should further strengthen its MSD and GESI mindset and capabilities.		
Measures	Responsibility	Timing
a) Ensure that practical strengths are preserved and utilized effectively for Phase 2 while successfully addressing the key recommendations above.	Implementing partner	Phase 2 ProDoc

Artur Pokrikyan
Inclusive Economic Development Programme Lead | Economic Advisor

Ursula Läubli
Deputy Head of Mission/Deputy Regional Director Swiss Cooperation for the South Caucasus