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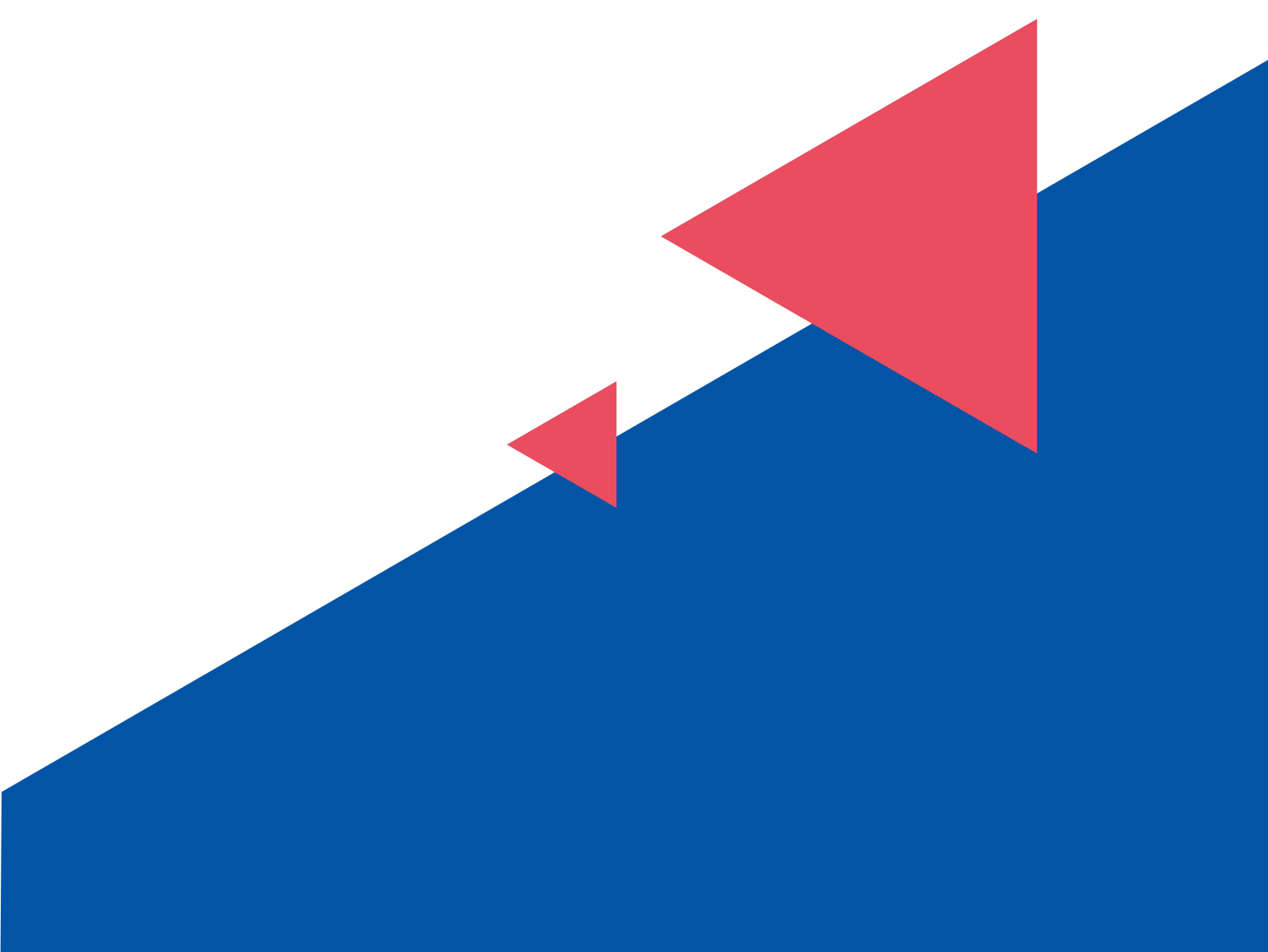
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► Value Chain Development of Egypt's Dairy Sector Pilot Intervention Design

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FOREWORD

“Egypt Youth Employment (EYE): Jobs and Private Sector Development in Rural Egypt (RAWABET)” is one of the key projects managed by the International Labour Organization (ILO) – Cairo Office. Funded by the Norwegian Ministry of Foreign Affairs and implemented in partnership with the Egyptian Ministry of International Cooperation, the EYE RAWABET project aims to contribute to economic rural development through promoting decent work opportunities in priority economic sectors/ value chains in rural Egypt, by stimulating the role of the private sector, particularly micro, small and medium enterprises, including small-scale producers/ farmers and support their economic empowerment.

Building on ILO’s Value Chain Development for Decent Work approach, the project has identified the dairy value chain as one of the promising subsectors that holds high potentials for inclusive growth and economic empowerment, not to mention that dairying constitutes a key element of the rural economy in Egypt, being one of the main economic activities assumed by rural households in general. With the dairy value chain determined as one of the project’s target subsectors, it was, therefore, necessary to conduct an in-depth study of the dairy “market system” to map out and investigate the key market actors and stakeholders, the main supporting services and functions, and the applicable rules and regulations, in addition to identify underlying constraints and bottlenecks that may hold back desired performance, and, also, to highlight potential market opportunities that can serve as entry points to future interventions.

To prepare for implementation, an intervention model is designed to reflect the outcome of the dairy market system research and analysis. The intervention is primarily designed to facilitate effective linkages between key market actors of the dairy/liquid milk value chain including small-scale dairy farmers in selected villages of Egypt’s Delta, and to upgrade and improve their contribution, as means to address decent work deficits and, hence, to support their livelihoods and to promote rural development at large. However, empowering dairy farmers requires that the project work towards the engagement of all market actors within the sector. Key dairy market actors include milk collection centers, dairy processors, and small-scale milk traders, in addition to veterinary and extension service providers. Involvement of all the different actors would not only create a conducive environment to promote farmers’ development, but would also ensure the sustainability of the intervention beyond the lifetime of the project.

It is worth noting that the intervention model at hand is intended to serve as a pilot initiative that we hope that it induces systemic changes in the dairy market system at the village level and that it gives rise to favourable impact, particularly in terms of improved better and sustainable income, improved working conditions of dairy farmers and enhanced access to social protection schemes. The success of the ILO EYE RAWABET dairy intervention and its sustainability will be vital to ensure further upscaling and replication at a wider scale.

At this point, I would like to express my gratitude to the EYE RAWABET team and Mr. Wael Refaat, agribusiness consultant for their efforts to produce the document at hand. We are also grateful to the Egyptian Ministry of International Cooperation and the Norwegian government for their ongoing support. Thanks are also due to our dear colleagues in the SECTOR department at ILO Headquarters, and to the SME Unit in ENTERPRISES department for their cooperation and guidance along the development of this document.

Eric Oechslin

Director of the Decent Work Team for North Africa
Country Director for Egypt and Eritrea



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EXECUTIVE SUMMARY

The International Labour Organization – Cairo Office is implementing the project “Egypt Youth Employment: Jobs and Private Sector Development in Rural Egypt (RAWABET)” that supports the creation of decent jobs and the improvement of working conditions in Egypt’s rural economy. One of the project’s key interventions is the development of the dairy value chain within selected rural areas of Egypt’s Delta.

The intervention is designed to integrate small and medium-scale farmers within the dairy value chain, by upgrading their contribution, developing milk-handling practices, enhancing milk quality and increasing yields. Empowering dairy farmers will, however, require the engagement of all market actors within the sector. Key dairy market actors include milk collection centres, dairy processors, and small-scale milk traders, in addition to service providers. Involvement of all the different actors would not only create a conducive environment to promote farmers’ development, but would also ensure the sustainability of the intervention beyond the lifetime of the project.

Because the milk collection centre (MCC) is the main buyer of milk produced within a given area/village, the design of RAWABET’s dairy value-chain-development intervention sets MCCs as the anchors of the dairy value chain within rural communities. In that sense, MCCs are perceived as key agents of change within the rural context of milk production. Milk collection centres typically operate through a network of small and medium dairy farmers who supply the centre with its daily flow of milk. Their role does not usually go beyond milk collection, storing or refrigerating and transferring to dairy processors. However, given MCCs’ crucial function vis-à-vis the dairy community of small and medium farmers in rural areas qualify them to assume a more overarching role. MCCs can be positioned as a “dairy hub” that offers priced services for its network of farmers in return for liquid milk with enhanced qualities.

This pilot intervention targets 2 MCCs in the Delta region of Egypt with a network of 200 small and medium scale farmers (rearing up-to 1,000 dairy animals) per MCC. Dairy farmers in the selected region will be invited to participate in the project on equal terms. A transparent system of milk purchases and payments will be introduced and farmers shall be offered training in milk production as well as in hygienic milking practices. Accountability and trust between the MCCs and the milk producers is important and key to the success of this project.



Background

The project “Egypt Youth Employment (EYE): Jobs and Private Sector Development in Rural Egypt” aims to promote decent private sector employment in rural Egypt through increased employment opportunities within large enterprises and also rural micro, small and medium enterprises (MSMEs) along value chains with high employment creation and growth potential. Implemented in partnership with the Ministry of Investment and International Cooperation, the Federation of Egyptian Industries (FEI) and the private sector, the project is intended to capitalize on the ILO’s expertise and experience in the promotion of decent employment in the rural economy to scale-up and build upon previous rural-focused initiatives implemented in Egypt.

The first critical step is the selection of sectors and sub-sectors suitable for value-chain development interventions, based on a number of criteria that have been prioritized to reflect the objectives of the project. Accordingly, the selection criteria required that selected sectors/value chains should indicate high growth potentials based on expectations of an increase in market demand. They should also maintain prospects for employment creation, inclusion of disadvantaged groups and prospects for value addition. Selected sectors/value chains have to have the capacity to generate favourable impact on rural communities at large.

Within this framework and following the selection of the sector/ value chain, the project will provide relevant technical support, as well as necessary business management and advisory services to develop the capacities of existing suppliers (MSMEs) within the targeted value chains. The aim is to boost their competitiveness and growth potential, thereby improving their ability to generate decent work opportunities. Moreover, the project will facilitate the provision of tailored vocational and technical training for employment programmes to promote decent jobs along targeted subsectors and value chains, within participating lead firms and their suppliers.

During the inception phase of the project, and building on preliminary technical consultations with key stakeholders, the dairy sub-sector (of the agri-business sector) was identified as a potential target for project interventions, given the key role it plays in Egypt’s rural economy and its high potential for growth and employment creation. Initial review revealed that the structure of the dairy value chain incorporated several elements that supported the feasibility of the planned project interventions. This outcome was confirmed through a rapid market assessment (RMA) study produced by the project, which found that the dairy subsector had strong potential for inducing systemic change and realizing inclusive growth.

Following this result, an in-depth market system analysis (MSA) was developed to further understand the structure of the dairy sub-sector and its various value chains, and to map out the key actors, stakeholders, supporting functions, and relevant rules and regulations. In addition, the MSA study identified the bottlenecks, market incentives, pathways of change and entry points. At large, the MSA study was intended to lay down the building blocks of market-system-based interventions and tools that are most conducive to the project’s approach, its duration and scope.



1.THE DAIRY SECTOR IN EGYPT: SYSTEMIC CONSTRAINTS AND POTENTIAL OPPORTUNITIES

1. Background

Animal production in Egypt represents about 33 per cent of total agricultural production, with a ruminant population of 4 million buffaloes and 5 million cattle producing 4.7 million tons of milk annually. Despite a 3 per cent annual increase, milk production meets only 72 per cent of domestic demand. Liquid milk, as one form of milk products, constitutes 34.8 per cent of the marketable milk, almost 80 per cent of which is supplied through the informal sector where milk quality is largely compromised. With milk production falling short of the needed quantity and quality, dependency on imports of milk powder have become an inevitable alternative for dairy processors.

Against this backdrop, the dairy industry in Egypt, as described above, has hitherto been unable to capture the full potential of the sector. Almost 80 per cent of milk production comes through micro and small dairy farmers who keep one to ten cows per household. This segment of dairy farmers maintains the largest share of the animal inventory in Egypt of 89 per cent, whereas large dairy farms, with more than 100 cows, account for only 5 per cent of total number of dairy animals in Egypt.

In that sense, not only is the dairy industry missing out on opportunities to generate consistent supplies of quality milk, the current state of the dairy sector further entrenches the disadvantageous conditions of small dairy farmers within the dairy supply chain. Traders (middlemen) and wholesalers are, to a great extent, building on the flaws of the present transactional arrangements, attaining as many gains as possible at the expense of small and medium scale dairy farmers. Middlemen is mixing different qualities of milk to average the milk price, they also may adulterate milk with other substances for preservation or by adding water to increase their profits.

The important question that needs to be answered is therefore how can the dairy value chain be developed to encourage the integration of farmers and the improvement of their livelihoods?

1. System Constraints: Underdeveloped Dairy Production System

The MSA study identified the underlying constraints and gaps that are present in the market systems and, accordingly, propose sectoral interventions that would address these constraints and gaps. According to the MSA, the main challenge to dairy/milk production in Egypt is the inconsistency of milk supply in terms of quantity and quality, a situation that is largely attributed to underdeveloped dairy production systems. It is, therefore, easy to come to the conclusion that unlocking the potential of the dairy production sub-sector cannot be achieved unless interventions are carried out to enhance the capacities of small-scale subsistence farmers and traditional production systems, which account for more than 80 per cent of milk production in Egypt.

Nevertheless, working to enhance small-scale-farmers' milk production capacities can only be feasible if necessary actions are in place to address inefficiencies, constraints and weaknesses of the whole eco-system. A number of backward and forward linkages, including input supplies of animal feed and health care, access to improved animal breeds, and to adequate extension services will be required. Addressing weaknesses and gaps in post-production activities such as collection, storage and transportation is equally important to maintain and improve the value added during production.

► Figure 1:





2.THEORY OF CHANGE: TOWARDS EMPOWERING INDIVIDUAL FARMERS THROUGH DAIRY HUBS

Poverty reduction and the creation of decent work opportunities is the ultimate goal of the proposed intervention. More specifically, the key objective is to help micro, small and medium-scale dairy farmers increase their income and, hence, improve their livelihoods. Towards that end, the main proposition of the intervention is to help micro, small and medium dairy farmers improve the quality and the yield (productivity) of their milk production, and, therefore, their earnings, provided that enhancing the quality of milk would be directly reflected in an increase in earnings.¹

With their inability to deliver milk that meets the demand of the market in terms of quality and quantity, dairy farmers have to submit to unfair fixed prices usually imposed by middlemen and traders. Therefore, reaching out directly to micro and small farmers and linking them to formal markets will enable them increase their productivity and enhance the quality and yield of milk they produce, and that would be translated into higher earnings and better margins of profit.

Furthermore, enabling micro, small and medium dairy farmers to produce improved milk, in terms of quality and quantity, would require allowing them access to a number of services, including quality feed, regular veterinary and animal healthcare, training on good milking and handling practices, in addition to necessary business development and financial services. The core of the intervention will, therefore, be to ensure and facilitate the delivery of the mentioned services. This will require inducing a number of changes in the market system, primarily, at the village level.

Having smallholder dairy farmers produce as “individuals” constitutes a major constraint to their development and growth. As individuals, smallholder dairy farmers tend to generate inconsistent, small amounts of milk. In this context, a plausible approach could be to bringing farmers, in a given area, together within a collective system that would allow them an opportunity to function as a single farm and expand their scale of production. In fact, organizing small dairy farmers under a joint framework can help them attain quality extension and veterinary services.

Extending “business” linkages between dairy farmers and larger value chain actors, milk collectors/bulkers, can prove to be viable and sustainable. These business linkages are founded primarily on the fact that micro and small dairy farmers will be generating a good-quality product that milk collectors will want to buy at higher prices. In other words, enabling micro and small dairy farmers to upgrade their contribution to the dairy value chain at the village level will automatically empower their position vis-à-vis milk collectors.

Drivers of Change

In this context, and with an aim to stimulate systemic change in the milk-production value chain in rural areas of Egypt, the design of an intervention model will have to address key constraints that inhibit the potentials of the sector, through three major entry points (drivers of change):

Developing and enhancing product quality, i.e. liquid milk, through providing technical support on good farming, harvesting and handling practices, and, also, by providing access to necessary

¹ Although the price of milk is largely determined by large dairy processors, a bonus system is applied to make up for good milk quality, whereby dairy processors provide additional remuneration for milk of enhanced qualities that maintains high levels of protein and fat and low levels of bacterial count, and that does not include added water or antibiotics.

equipment/ high-quality facilities. Improving milk quality will increase its value and competitiveness/ marketability, and, therefore, will secure decent profit for small-scale producers eventually improving their livelihood;

Developing an enabling business environment by allowing small and micro enterprises, engaged in the intervention, to access necessary business and financial services, enhancing their capacity for development and growth;

Improving system efficiency and productivity by eliminating value-chain inefficiencies and introducing innovative solutions that can reduce cost, increase efficiency of business transactions, and also open up opportunities for full, productive employment opportunities.

It is important to note that in order to realize lasting impact, any intervention should work to have the three drivers of change operating in harmony.

Improving the Conditions and Performance of Dairy Farmers and Milk Collection Centres:

Dairy Farmers Capacity Development

To ensure the production and flow of good-quality milk, extensive capacity building programmes are required to enhance the knowledge and skills of micro, small and medium-scale dairy farmers. The proposed intervention model should allow for the provision of necessary extension services and relevant training on good farming, harvesting and handling practices, including clean milk production, while applying principles of enhanced nutrition and animal welfare. At large, the training will focus on improvements needed to increase yields and the quality of milk produced.

Establishing a sustainable mechanism for small dairy farmers to easily access the required extension services, animal healthcare and veterinary amenities, poses a significant challenge. Normally, it is quite difficult for small dairy farmers to receive good-quality services at an affordable price, given the poor living conditions of dairy farmers and the unavailability/inadequacy of such services at the village level.

Initially, the proposed intervention will engage university professors to provide dairy farmers with technical knowledge on good farming and hygienic handling practices. Later on, this role will be assumed by private extension service providers.

Congregating small dairy farmers under one enabling structure, a collective platform, through which they can seek out necessary services, could offer a solution. Milk collection centers represent a significant candidate to serve as this congregating framework, and to function as a one-stop-shop, through which dairy farmers obtain all services, and possibly input supplies. In such a system, it is expected that a dairy farmer with a sick cow will access the milk collection center for help. The center will in return refer the farmer to a recommended veterinarian. By the same token, milk collection centers are expected to guide and advise dairy farmers through available extension service providers of good quality.

Upgrading Milk Collection Centers

In many ways, milk collection centers are envisaged, within the proposed intervention design, to serve as the anchor/coordinator for dairy market actors in rural communities. As the main buyer of milk produced within a given area/village, they can be positioned as a producer's organization that

offers priced services for its network of farmers in return for quality liquid milk. Building on their strategic placement within the dairy value chain, the project's intervention model has placed relative importance on milk collection centers as potential drivers of change within the dairy sector at the rural level. Therefore, a key component of the intervention is to upgrade two pilot privately-owned milk collection centers within Egypt Delta's governorates. In that sense, and in order for the upgraded milk collection center to maintain and transfer the produced milk to dairy processors, investments may be required to improve the storage capacity and develop the transportation/collection system. In fact, the selection of the two milk collection centers will largely depend on their willingness to make necessary investments in equipment and infrastructure that fulfils the requirements of the National Food Safety Authority (NFSA).

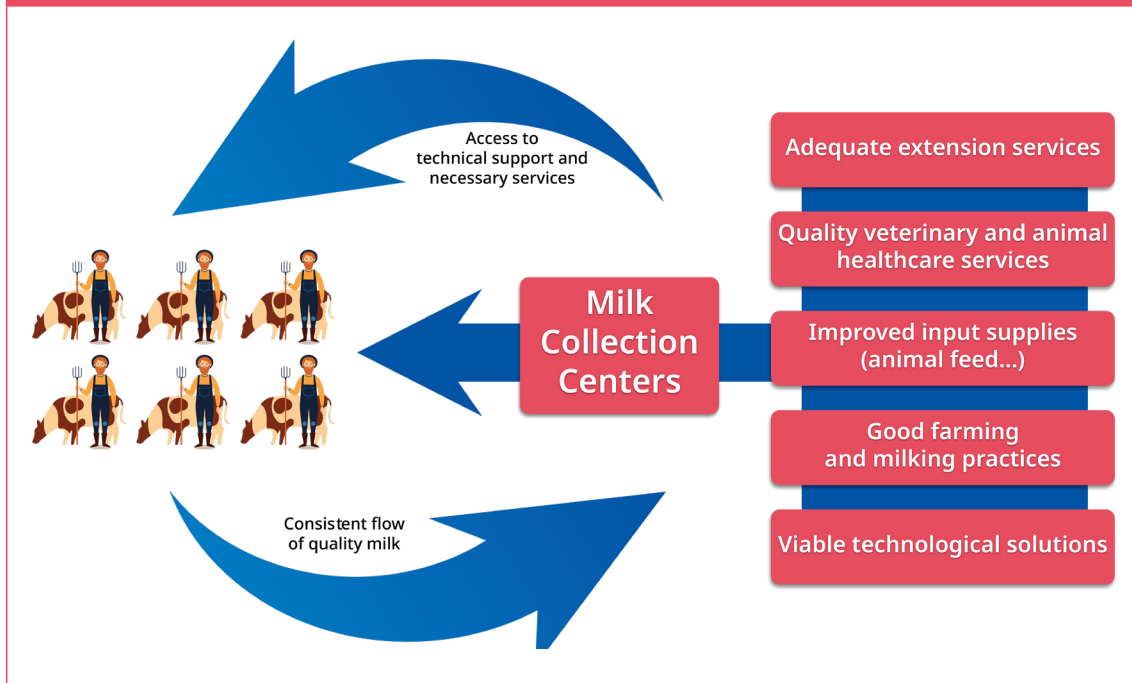
In this context, milk collection centres (MCCs) are perceived as the key agent of change within the rural context of milk production. Normally, milk collection centres operate through a network of micro, small and medium dairy farmers who supply the centre with its daily flow of milk. Usually, the role of milk collection centres does not go beyond milk collection, storing, refrigeration (bulking and chilling) and transferring to dairy processors. The positioning of MCCs within the dairy community of micro, small and medium farmers in rural areas, however, qualifies them to assume a more overarching role. From a value-chain-development perspective, MCCs may serve as congregating platform, through which farmer members could enjoy preferential services, on credit, in return for agro-products of specified quality. From a similar standpoint, the proposed intervention works to equip MCCs with the required capacities to serve as a one-stop-shop where micro and small dairy farmers are linked to quality feed, animal healthcare, and extension services. Basically, the MCC will act as the referral point. It is by no means expected that the MCC will carry on the mentioned services, instead, they will act as the interface for the network of farmers in the identified villages.

Registering dairy farmers under the framework of the milk collection center rests on the notion of reciprocal benefits, whereby dairy farmers, on one hand, enjoy adequate access to extension and veterinary services and higher prices of milk, whereas the milk collection center, on the other hand, secures a consistent source of good-quality milk.

Proposed System Innovation

In general, the role of the MCCs is confined to collecting milk from farmers and/or traders, storing it, and, later on, transporting it to dairy processors. In this capacity, MCCs are downplaying their potential as agents of change within the dairy value chain of rural communities. In fact, the positioning of MCCs within the value chain suggests a more strategic role vis-à-vis dairy farmers is possible. Here is where the concept of the dairy hub comes into play. Basically, the dairy hub concept attaches new roles and functions to the normal MCC, capitalizing on its established network of farmers. New roles and functions will entail the provision of necessary veterinary facilities, good-quality animal feed as well as other relevant extension services. In that sense, the dairy hub will serve as a know-how centre or as the "one-stop-shop" where farmers are provided with reliable access to technical support, hands-on training, relevant technological application, as well as with business knowledge and skills to help them effectively run their milk production enterprises. Access to finance is another service that a dairy hub should facilitate for farmers. It is, however, important to mention that the dairy hub will not be providing finance services itself. It will act as a referral point that dairy farmers can consult for a variety of services as needed.

Figure 2:



Besides educating and empowering micro, small and medium scale dairy farmers, it is expected that the dairy hub will introduce a traceability system that will register all participating dairy farmers and their cattle, and maintain a close follow-up mechanism that is updated with each relevant occurrence for each cow

Inducing Favourable Changes in the Market System of the Dairy Market:

Establishing Value-Chain Linkages among Rural Market Actors

The dual approach of working with farmers on one side and milk collection centers on the other constitutes sizeable work. Managing the entire system to ensure the integration of all potential actors at different stages of milk production, and, most importantly, to confirm the validity and marketability of the improved product, constitutes a serious challenge. Engaging lead firms in the process of developing the dairy value chain is essential to stimulate the necessary actions to ensure the supply of quality milk to the market of dairy processors. Working to harmonize market actors towards a shared outcome is quite complicated and requires delicate management.

The proposed intervention model seeks to allocate room for supporting functions that can be vital to the effectiveness of the process. Supporting functions, in this context, may be supplied by relevant research and academic institutions, agri-business enterprises, business associations, among others. Aside from the technical aspects, providing access to adequate business and financial services in

order to establish a conducive and enabling business environment within the projected intervention is critical to ensure the sustainability of the whole system. Moreover, taking into account the applicable regulatory frameworks, it is important to embrace the standards and guidelines (as relevant) set forth by the Egyptian Food Safety Authority as an integral component of the intervention.

Towards this end, the intervention is projected to integrate and establish new roles and functions to ensure product quality. Such functions would open up opportunities for productive employment as relevant.

Establishing and enabling the agri-business service enterprises:

Amongst the challenges identified during the research of the dairy sector were the lack of access to adequate extension services at the village level. This can be partly attributed to the fact that micro, small and medium scale farmers are unaware of the availability and/or the importance of such services. But, also, the inexistence of specialized service providers offering relevant quality extension services in the first place, particularly at the level of micro and small dairy farmers, constitutes the main problem.

In order to fill this value-chain gap, the proposed intervention will work to provide necessary support, including the facilitation of access to financial and non-financial services. The establishment of a start-up, staffed with young people with relevant technical expertise, that serves as a for-profit enterprise providing priced extension services through the “dairy hub” will ensure the sustainability of such services beyond the lifetime of the project. Graduates of veterinary medicine schools are good candidates to start extension and veterinary services businesses.

Developing an enabling business environment and introducing innovative solutions:

Parallel to facilitating the provision of necessary technical assistance to key dairy market actors, the proposed intervention will work to promote entrepreneurship culture in the selected regions in rural Egypt, with an aim to encourage the integration of emerging MSMEs along the dairy value chain, especially by providing supporting functions for the micro, small and medium-scale dairy farmers. In fact, empowering relevant innovative business ideas to foster sustainable enterprises and effectively integrate them into the dairy value chain can inspire unemployed men and women to realize their potential by striving for similar self-employment and entrepreneurial initiatives. The intervention will work to link new start-ups to necessary incubation amenities, including the access to business development and financial services in order to enhance sustainability and boost competitiveness.

In this context, it is expected that a partnership will be established with the MSMEs Development Agency and related national partners to facilitate and provide promising business initiatives. Linkages with major BDS providers at the national and local levels and will be made primarily through information sessions and suitable promotional materials.

In addition to linking the emerging start-ups/MSMEs to the extensive BDS offered through the newly-developed MSMEs Development Agency, it is vital to invest in building the capacity of local BDS providers with compatible BDS and Value Chain Development training tools/packages to enhance their delivery of necessary tools and training. Of equal importance, the intervention should include activities to raise awareness among participating MSMEs about existing/well-established channels

for essential financial services, in addition to improving the capacities of the existing local financial service providers to offer lending programmes that meet the needs of participating MSMEs.

Higher prices for improved milk quality: Incentives for Market Actors:

To ensure the viable engagement of market actors as indicated in the intervention design, it is important that the project team demonstrates how the intervention will generate a favourable outcome for each actor. Increasing marketing and the profit margin in milk production constitute key incentives for market actors such as micro and small dairy farmers.

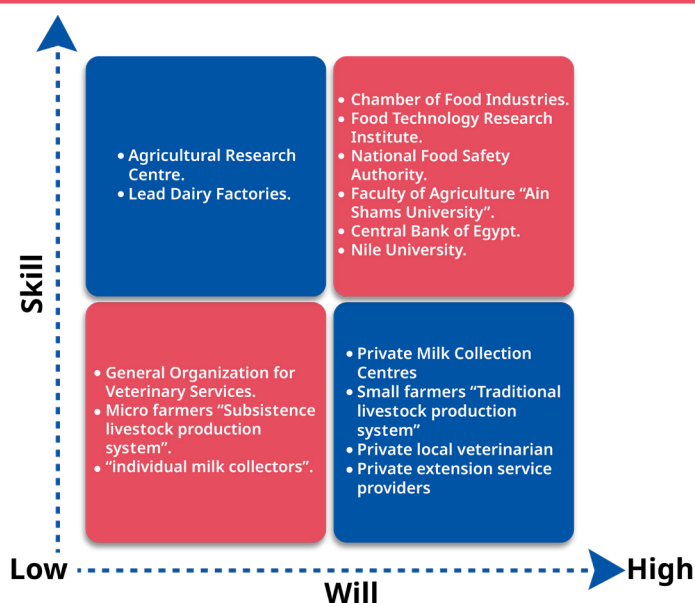
Being the key beneficiary/ actor, it is imperative to confirm that dairy farmers are completely engaged and committed to their activities. For this to happen, farmers have to embrace and be aware of the rationale of the intervention. More importantly, they have to see how they will benefit from the intervention. The increase in the price of the milk they produce as a result of the improvement in quality and increase in yield will constitute the primary incentive for farmers to be part of the initiative.

By the same token, other rural actors including milk traders (middlemen) and milk collection centres will witness an increase in their profit margins due to the improvement of milk in terms of quality and quantity. The increase in price of milk produced by farmers will automatically be reflected and transferred along the different parts of the value chain. Similarly, the participation of lead dairy processing firms in the intervention is only guaranteed if a viable business model is established, within which the dairy processor benefits from the increased volumes of good-quality milk necessary for the production of different kinds of dairy products and attains a decent margin of increased profitability.

Engaging market actors in the intervention:

Despite the fact that the proposed intervention requires the participation and the positive engagement of market actors and relevant stakeholders, the actual contribution of each actor varies according to their level of skill and the extent to which they are willing to contribute. Through analysis and several interviews, the following diagram summarizes the contribution of each actor in terms of related skills and willingness to participate in the intervention.

Figure 3:



Gender Equality and Working Conditions:

Dairy value chains on a global scale are a unique driver of development enhancing economic growth, food security and nutrition while reducing poverty (FAO, 2013). Dairy value chains provide new opportunities for employment and entrepreneurship for rural families. Women are the main actors across dairy production systems. However, despite their significant contribution, women remain overwhelmingly represented in the informal, low-skilled, and low-paid nodes of the dairy value chain. Their involvement in dairying generally declines as the activity becomes more important for household income, with limited access to secure and decent employment opportunities. Consequently, women usually do not benefit from dairy value chains in the same way that men do, which affects how the value chains operate at every level. This intervention approach pays strong attention to social inclusiveness and gender equality, and aims to provide women with equal opportunities to achieve a higher level of efficiency and competitiveness along the value chain. In this respect, well-designed programmes in the dairy sector can improve incomes and quality of nutrition in poor households, provide employment opportunities and enhance sustainable development. Lessons can be drawn to address one of the key constraints that undermines rural women's entrepreneurial potential in agri-food value chains: the lack of gender-sensitive business development services capable of promoting the incubation and growth of family and women-led enterprises in rural settings.

This intervention aims to stimulate gender responsive practices for the provision of rural business services. The role of the dairy hub is to enhance market access for micro and small-scale dairy farmers, strengthening the capacities of women, farmers, entrepreneurs to effectively participate and benefit from dairy value chain.

The intervention will apply an integrated approach to: 1) Strengthen the technical and entrepreneurial skills of rural women to improve their engagement in dairy value chains; 2) Facilitate smallholders, including women's participation in dairy-industry development programmes.

Sustainability

► (i) Sustainability for the target group:

Enhancing the knowledge and skills of farmers: Investing in human capital

Raising the capacities of small-holder dairy farmers, being the primary target group, and, hence, upgrading their contribution to the dairy value chain, constitute a major lasting result that would ensure the sustainability of the intervention beyond the lifetime of the initiative. As established beforehand, enhancing the milking and harvesting practices of the subsistence and traditional milk production systems, i.e. micro, small and medium-scale dairy farmers, will naturally be reflected in the quality of milk.

In addition, providing dairy farmers with adequate and durable access to necessary relevant business development and financial services, through profit-based private enterprises, will further, increase their chances of growth. In fact, it is expected that the intervention would help alter the perception of micro, small and medium-sized dairy farmers towards their cattle as a source of exponential financial gains rather than just a source of milk for on-farm and subsistence consumption. Changing the mind-set of farmers and guiding them towards becoming "enterprise-d" may prove to be the most lasting impact of the initiative.

► **(ii) Sustainability for market actors:**

Capacitating the milk collection centers as medium-sized private-sector enterprise:

As previously mentioned, the ability of milk collection centres to serve as a “hub of services” or as a “one-stop-shop” through which dairy farmers obtain access to technical, business support, and good-quality input supplies of animal feed, as well as animal healthcare, is a key factor in the viability of the intervention. In many ways, the dairy hub is expected to look after its network of dairy farmers to ensure the flow of quality milk. It is worth noting that these add-on functions should not, however, affect the original function of the dairy hub; to collect, store and maintain the quality of milk produced and transfer it to dairy processors. Dairy hubs will not be providing the mentioned services, rather they will connect their farmers to the services.

The ability of the milk collection centre to perform the mentioned functions will only be possible if relevant capacity-building activities are implemented. Capacity building activities would include business and technical trainings to enable the staff of the centre to properly carry out the expected roles. Necessary investment in the infrastructure of the centre is of equal importance. For that matter, the intervention will assure the provision of adequate financial services for the required facilities.

Enhancing the eco-system of milk production, collection and transport:

Providing support to relevant service providers is critical to the dairy farmers and, also, for the dairy hub in terms of forging healthy partnerships with farmers. Also useful in complementing the hub activities are financial institutions, agro-vets, private artificial insemination (AI) and animal health technicians, transporters and feed suppliers. For instance, banks would be useful for processing payments to farmers for milk delivered to the dairy hubs. Private technicians can offer services to farmers with a payment arrangement that is beneficial to farmers, thereby helping the hubs improve farmers’ access to both markets and inputs.

► **(iii) Institutionalization of the intervention model:**

It has been determined from the very beginning that the model should engage with key national entities working to support SMEs in Egypt, and align with major national initiatives and programmes, namely, the Egyptian Central Bank (CBE)’s initiative to support sector-specific SMEs with low-interest (5 per cent) credit. The CBE’s initiative will provide different market actors who are part of the intervention with adequate funding.

In addition to the Chamber of Food Industries at FEI, the project has also been able to engage the CBE’s Nilepreneur initiative as a national partner that will learn from the dairy intervention as it unfolds, and host the intervention among best practices that can be replicated in the future. Nilepreneur will later assume the role of the EYE RAWABET project as the facilitator of similar value-chain-development initiatives.

Assumptions

The proposed intervention model builds on a number of assumptions, the most important of which are the following:

- ▶ One of the main assumptions is that supporting micro, small and medium scale dairy farmers with adequate access to improved animal feed supplies, consistent veterinary and animal healthcare facilities, in addition to other related extension services, will result in an increase of the supply of better-quality milk. And that this increase will be consistent over a long period of time. This is also associated with the postulation that selected farmers will be completely engaged and receptive to the capacity building activities.
- ▶ Another key assumption is that the staff of the MCCs will be willing to invest in upgrading the milk collection centre and to have it equipped with necessary equipment that would maintain the quality of milk obtained from the network of participating dairy farmers. Additionally, the ability of the MCCs staff to effectively manage and assume the new roles that shall be added to the original mandate of milk collection centres, i.e. serving as “one-stop-shop” for farmers to gain access to a variety of services, constitutes another underlying hypothesis.



3.PROJECT INTERVENTION: MAIN OUTPUTS

The intervention is designed to facilitate effective linkages between key market actors of the dairy/liquid milk value chain in selected villages of Egypt's Delta, and to upgrade and improve their contribution, support their livelihoods, promote rural development in general, and have a favourable impact on the dairy sector at large. Towards that end, necessary technical support and access to adequate extension services are required to improve and maintain the quality of milk produced by micro, small and medium dairy farmers, and to ensure the proper handling of milk along the collection, transportation and storage stages, until it reaches the lead dairy processor. For that matter, developing the contribution of all dairy actors, not only dairy farmers, is essential to establish a sustainable system through which each and every actor manages to add value and, in return, receive fair gain. In fact, establishing the right set up between micro, small and medium dairy farmers and other dairy market players, including milk collection centers, extension service providers, feed suppliers and animal healthcare providers, small-scale traders and other intermediaries, is vital to secure an inclusive structure where all stakeholders participate and benefit.

Three parallel tracks towards inducing change:

Being a pilot intervention, implementation would start with two MCCs within two rural communities in the Delta of Egypt. The decision to begin with only two MCCs is based on the fact that the dairy sector includes a great deal of informality. Contractual arrangements are largely absent among market actors. Prices of milk are volatile, where seasonality governs market dynamics to a great extent. Introducing a systemic change that will require the commitment of market actors at different levels of the supply chain will not be an easy task. It is therefore more reasonable to work on setting a good example within selected geographical locations. Later on, it is expected that the success of the pilot intervention would give way to potential scaling up and will generate incentives for more market players to join.

Within the two selected rural communities, the dairy value chain development intervention will embark on along three parallel tracks;

1. enhance the capacities of micro, small and medium-scale farmers by developing their milking and handling practices and by allowing them access to improved feed supply, veterinary and extension services; **2. upgrading/transforming the milk collection centre to serve as a "dairy hub"**. The third parallel track **3. improving the ecosystem of the farmer** will ensure that necessary services (supporting functions) are made available and that effective and plausible linkages are extended between farmers, the dairy hub and dairy processors. This will require working to build the capacity of service providers offering financial and non-financial services, including technical assistance.

Having the three tracks work in harmony will establish a consistent flow of good-quality milk to meet the demand of the market.

Output I: Upgrading a Milk Collection Center:

- ▶ (i) Select and engage two milk collection centers that satisfy a number of structural, institutional, and technical criteria. The selected milk collection centers should be willing to invest in storage and collection equipment necessary to maintain the quality of milk produced by farmers;
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- ▶ **(ii)** Work to build the capacity of the selected milk collection centers in necessary institutional, managerial and technical skills. The needs and necessary upgrades of the two selected milk collection centers in the two identified rural communities are assessed to align with the specifications of the National Food Safety Authority;
- ▶ **(iii)** Follow-up and oversee the overall management of the milk collection centers during the lifetime of the project intervention;

Output II: Dairy Farmers Capacity Development:

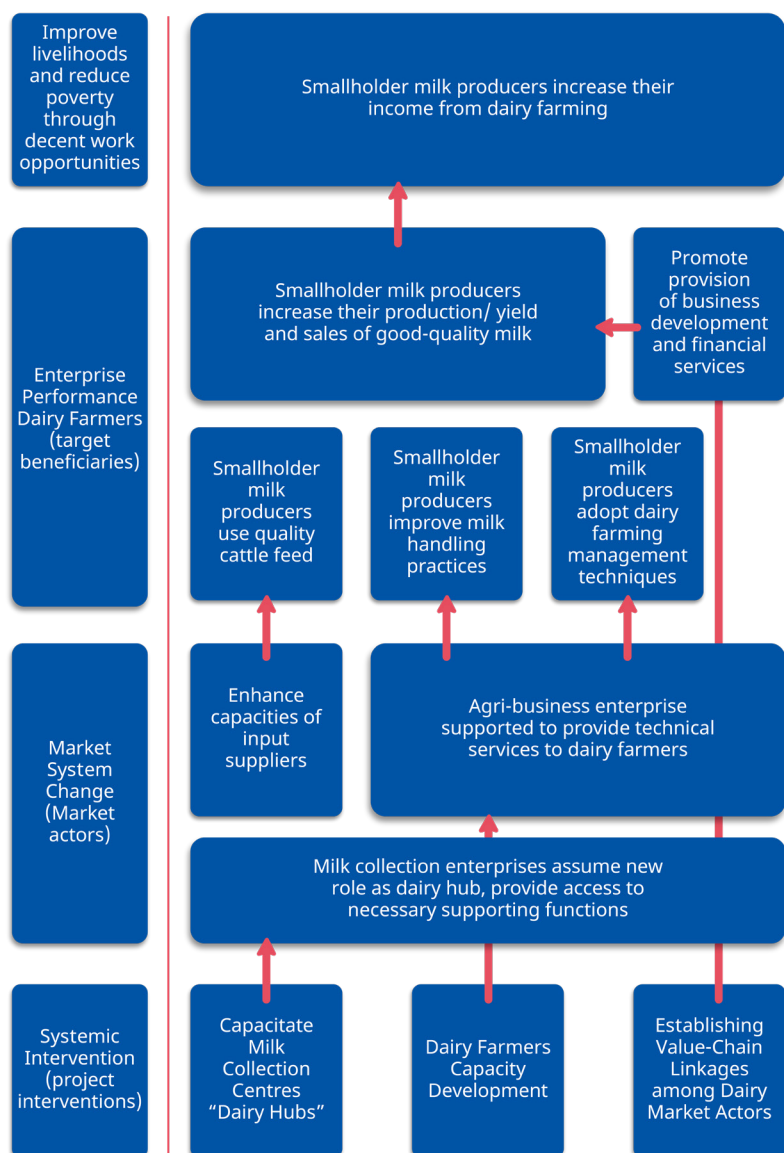
- ▶ **(iv)** Develop a tailored training curriculum comprised of practical approaches for good farming, clean milk production and animal health practices
- ▶ **(v)** Identify and train selected extension workers on the marketing and delivery of the adopted training curriculum
- ▶ **(vi)** Coordinate and facilitate enlisted farmers' access to necessary extension services, as well as to training on good farming, harvesting and handling practices, including clean milk production, and applied principles of enhanced nutrition and animal welfare;
- ▶ **(vii)** Oversee and monitor the implementation of training programmes for farmers, and ensure, observe and report the change in farmers' practices following the trainings provided, to confirm the desired outcomes;
- ▶ **(viii)** Facilitate farmers' access to business development and financial services to enhance their business knowledge and skills, and their capacities in managing and running their small businesses.

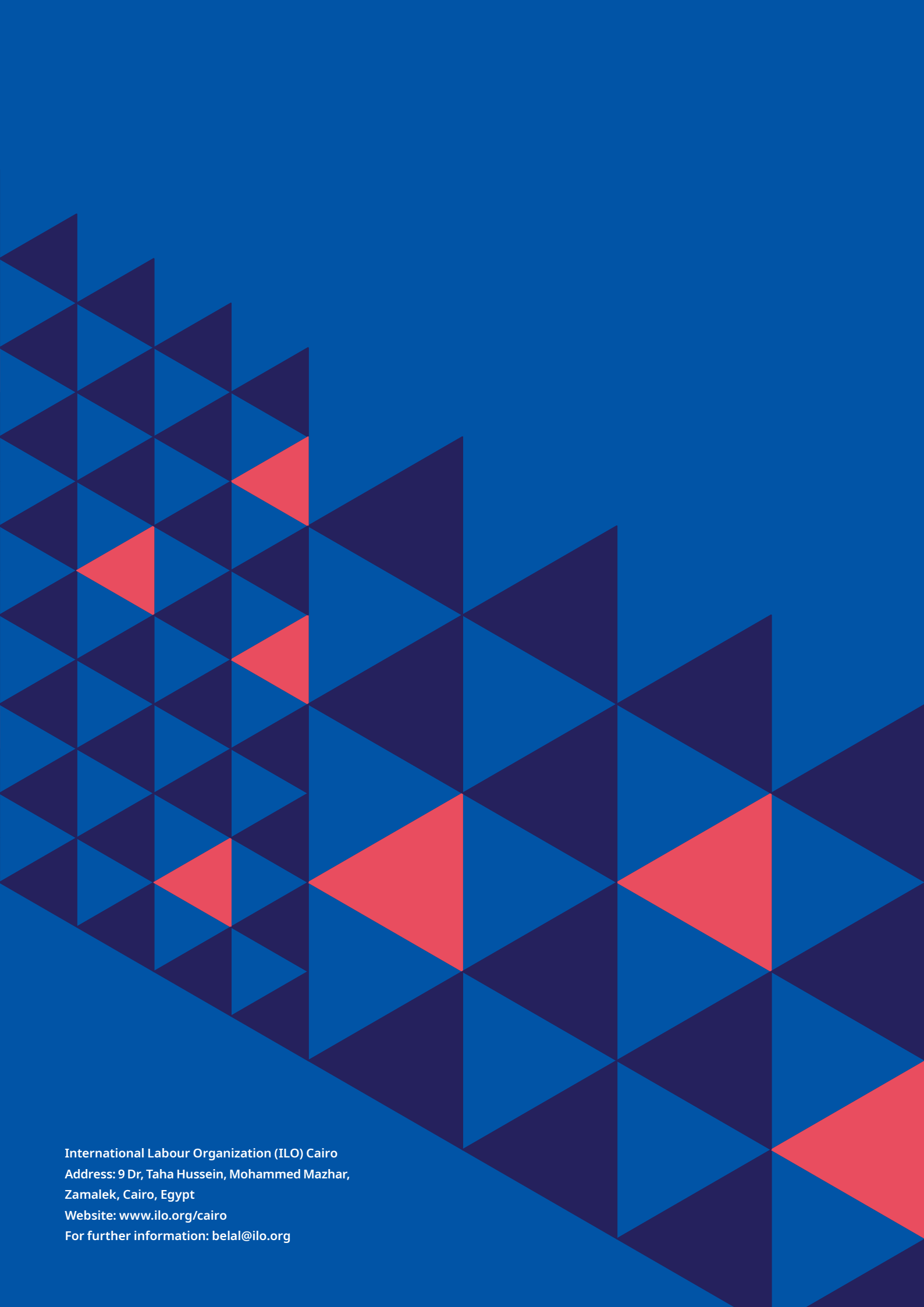
Output III: Establishing Value-Chain Linkages among Rural Market Actors:

- ▶ **(ix)** Train and engage designated lead firm teams at the different levels of the intervention.
 - ▶ **(x)** Coordinate, monitor and ensure the viability and sustainability of all processes integrated in the intervention. The capacity development taking place at the farming level should be reflected in better-quality milk that needs to be properly channeled to the upgraded milk collection center. The upgraded milk collection center will have to provide farmers with access to services such as improved feed supplies and animal healthcare. The price of these services needs to be somehow reflected in the increased milk quality;
 - ▶ **(xi)** Facilitate technical assistance as relevant to accommodate the requirements and conditions specified by the Egyptian Food Safety Authority.
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Results Chain:

Figure 4:





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