



**LEBANON RECOVERY FUND
FINAL PROGRAMME¹ NARRATIVE REPORT**

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¹ The term “programme” is used for programmes, joint programmes and projects.

² Priority Area for the Peacebuilding Fund; Sector for the UNDG ITF.

³ The start date is the date of the first transfer of the funds from the MDTF Office as Administrative Agent. Transfer date is available on the [MDTF Office GATEWAY](http://mdtf.undp.org) (<http://mdtf.undp.org>).

⁴ All activities for which a Participating Organization is responsible under an approved MDTF programme have been completed. Agencies to advise the MDTF Office.

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ACRONYMS AND ABBREVIATIONS

FAO	Food and Agriculture Organization of the United Nations
IPVMCCN	Intermediate Primary Village Milk Collection and Cooling Centre Network
LRF	Lebanon Recovery Fund
MoA	Ministry of Agriculture
MoET	Ministry of Economy and Trade
MoH	Ministry of Health
MoI	Ministry of Industry
NGO	Non-governmental Organization
SCC	Somatic cells count
SNF	Solids non-fat
VDPA	Village dairy producers' association

EXECUTIVE SUMMARY

The Food and Agriculture Organization of the United Nations' dairy project – funded by the Lebanon Recovery Fund (LRF) – aimed to improve the quality and hygienic standards of milk and dairy products and increase the milk prices for dairy producers. The objective of Phase 2 of OSRO/LEB/201/UNJ project (LRF-26) project was to build on the accomplishments of Phase 1 (LRF-21) by reaching a greater number of beneficiaries. This terminal report highlights the achievements of the two phases (LRF-21 and LRF-26).

1. Empowering dairy producers. The project established and upgraded 34 village dairy producers' associations (VDPAs) to ensure continuity and sustainability of the project for 4 000 direct and indirect beneficiaries. Most of the dairy cooperatives (85 percent) are active and prosperous. The project strengthened the VDPAs through the establishment of a National Union of Milk Producers in Lebanon. This organization had a positive impact on the dairy sector in the country as a whole, and on the small-scale farmers in particular by empowering them to negotiate the milk prices with the dairy processing plants.

2. Milk collection and milk hygiene. The project established and upgraded 77 village primary milk collection and cooling centre networks by providing them with cooling tanks and the necessary equipment. In addition, the project enhanced the laboratories for milk testing and supported ten insulated milk transportation trucks (in Beqaa and Akkar) that are efficiently working at 90 percent capacity. The total quantity of milk handled and refrigerated is 150–200 tonnes/day (collected from a total of 3 500 farmers); smallholders with less than 15 cows represent 75 percent of the total farmers. These milk collection centres gave smallholders' a stronger position for milk marketing and for negotiating better milk prices. The milk hygiene standards improved significantly (lower detected acidity and contaminating germs), causing milk prices to increase (by LL 100–200/kg).

3. Improvement of dairy cattle fertility. The project trained 80 inseminators during the project. Of these, 27 graduates of the training were provided with complete artificial insemination kits and are working with VDPAs in Beqaa, Akkar, North and Mount Lebanon. The preliminary results are encouraging, as the insemination of 10 000 cows in one year (2014) showed a success rate of 51 percent.

4. Empowering women-headed households. The project trained a total of 350 beneficiaries (including 90 percent women heads of household) on improving milk quality standards and good manufacturing practices, new technology in improving the production of local varieties of white cheeses and yoghurt (Laban, Labneh, Halloum, etc.) in order to obtain healthier and safer dairy products. The project granted 230 women-headed households with essential tools and utensils (small and medium dairy processing units with accessories) for home dairy processing. Almost all beneficiaries (95 percent) are efficiently working. The project enabled women to generate income through the processing and sale of improved traditional dairy products, by obtaining an added value of LL 350–500/kg of milk.

5. Training sessions, workshops and on-farm demonstrations were conducted throughout the project and in parallel with other activities. The dairy project had trained a total of 3 500 dairy producers and technicians on key topics including: (i) improving milk hygiene and sanitary conditions with good milking practices; (ii) good practices for processing dairy products; (iii) feeding management, forage production and utilization; and (iv) ration formulation and improvement of cow reproduction. Seven booklets covering all training topics were produced (up to 20 000 copies of all booklets). This activity had a direct impact on improving: (i) dairying management; (ii) milk productivity growth per cow, by 25 percent; and (iii) milk quality and hygiene.

6. Support to small-scale dairy producers with milking machines and stainless steel milk cans. The project distributed 487 single-head electrical milking machines along with the detergents and disinfectants, teat dipping solution and cups to 487 poor farmers (owning two to ten cows), mostly

women-headed households. In addition, 4 500 stainless steel milk jars of 20- and 40-litre capacity, along with 5 500 milk filters, were distributed to all project beneficiaries (3 000 smallholders). The farmers were trained on correct milking procedures and steps for cow preparation, teat dipping, washing and disinfecting of the milking machine and milk cans. The direct impacts were: alleviation of the daily work of women in their milking chores; and improvement of milk hygiene standards, with better quality of milk, lower detected acidity and fewer contaminating germs. As a consequence, the quantity of discarded milk was reduced by 90 percent.

7. Project support to the stabilization of milk prices. The milk price has always been a matter of priority in FAO's assistance to the dairy subsector in Lebanon. The project strategically enhanced public-private partnerships and collaboration among the VDPAs, private dairy plants and large farmers' cooperatives by establishing contracts that take into consideration the hygiene, quantity and prices of milk. As a result of these interventions, the milk prices stabilized between LL 1 150 and 1 200/kg at factory gate, and LL 1 000 to 1 050/kg at farm gate. Furthermore, the project gave technical training to VDPAs on how to calculate milk production costs, in order to improve their position with dairy processing plants when discussing milk prices.

Unfortunately, the food security scandal that jolted Lebanon in December 2014 severely affected the dairy subsector, undermining the project's success. This issue emerged during the preparation of this report, when the Health Minister announced that the condition of food safety in Lebanon was "truly catastrophic". This resulted in the closure of several food companies (restaurants, slaughterhouses, farms, etc.) for failing to fulfil the food safety standards and general hygiene. Also, local authorities ordered six dairy factories to halt Labneh production after samples failed to meet the standard of the health safety tests, in the latest push of a nationwide crackdown on establishments violating food standards. This has directly affected the dairy producers and marketing of milk, prompting several sit-ins of the smallholders resulting in blockages of the main roads in protest against the low milk prices and the closure of some dairy factories that stopped receiving milk from the farmers.

8. Factors and innovative elements applied by the project. The project positively impacted the dairy subsector in Lebanon by involving key stakeholders: the Ministry of Agriculture (MoA), dairy factories and dairy producers. The two main success factors behind the smooth implementation of the project were: (i) the realistic database produced to identify project intervention priorities and to decide on the selection criteria for beneficiaries, which was undertaken at the start of the project through the conducting of extensive field surveys of dairy farmers; and (ii) participatory identification of problems and priority areas for intervention for dairy involving all stakeholders in the dairy value chain.

9. Project relevance. The project was relevant to the urgent dairying needs of rural households and addressed significant constraints in reviving a sector in crisis. The project succeeded in creating farmers/milk producers associations, improving milk quality, promoting fodder crops to sustain dairy cattle feeding and empowering women in the dairy business.

10. Project efficiency. The implementation of the project was made possible by the crucial contribution of the FAO Project Management Unit by continuously and closely facilitating interaction between project staff and stakeholders. The project was executed in a timely manner; the procurement of equipment was done early enough to ensure timely delivery as well as reports providing detailed information on progress made.

11. Project effectiveness. The project was able to establish VDPAs in order to protect the interests of its members (mainly poor dairy farmers). The project empowered farmers to negotiate through the VDPAs for better prices for their milk. Improvements to the milk quality were achieved through capacity building

workshops and trainings on milk processing, hygiene and feed management coupled with the provision of dairy equipment.

12. Project sustainability. The project has good potential for sustainability, as farmers benefited substantially from being linked to the private sector (Hallab/Pedlar/Colporteur) and from the organization and management of milk collection centres, improving their chances of becoming self-supporting and self-sustainable enterprises. The major activities that could be maintained are those where full cost-recovery and market prices were favourable for the beneficiaries. These include home dairy processing of improved traditional dairy products (where women are gaining added value); milk delivery to milk collection centres; milk hygiene standard checks/tests (which is linked to farmers obtaining a better price for chilled milk, with improved quality); artificial insemination services (with at least 50 percent of inseminators trained and equipped with artificial insemination kits by the project).

13. Constraints and lessons learned. The various project stakeholders, with conflicts of interest, sometimes made it difficult to coordinate among all parties. In order to make the most of the funding available, FAO had to apply strict criteria for the selection of beneficiaries, unfortunately leaving out many smallholders in extreme poverty who also require assistance. The project team learned a number of lessons, particularly concerning a problem-solving attitude: be patient and persistent; insist on transparency in all actions; always take into consideration the economic impact of the interventions; be friendly but strict with the farmers; and depend on own assets, especially labour.

14. Conclusion. The project interventions produced the intended impact on the general wellbeing of the farmers, and the quality and hygienic standards of milk and dairy products. The activities helped to improve milk prices and increased the income of small-scale dairy farmers. Nevertheless, there is an urgent need for expanding such a high-impact project to additional areas to assist more farmers, especially those hosting Syrian refugees and returnees. FAO has developed a project proposal for potential donors aimed at: (i) scaling up the dairy project activities to the entire country to reach a higher number of poor livestock farmers, with a focus on improving the quality and hygienic standards of milk and dairy products; and (ii) bringing urgent support to Lebanese host communities by increasing the supply of milk and dairy products, reducing food insecurity and malnutrition while improving the income of vulnerable Lebanese.

1. PURPOSE

The agriculture sector in the Lebanese Republic – especially the milk and dairy subsector – is the main source of income for rural communities. The dairy sector has been exposed to several constraints over the last three decades and as a result, is considered by the Ministry of Agriculture (MoA) as an utmost priority. Lebanon suffers from a serious deficit of domestic production of essential food supplies and is therefore highly dependent on the import of basic food stuffs, particularly animal products and cereal crops (75–80 percent). Dairy products are an essential part of the daily diet in Lebanon. The annual consumption of dairy products is estimated at 130 to 150 kg equivalent milk per capita, where local production represents less than 30 percent of total consumption.

On 1 May 2009, the Multi-Donor Trust Fund – specifically called the Lebanon Recovery Fund (LRF) – was created in response to the July 2006 conflict between Lebanon and Israel. The LRF approved a proposed project presented by FAO entitled “Recovery and rehabilitation of the dairy sector in the Bekâa Valley and Hermel-Akkar Uplands” (OSRO/LEB/901/UNJ, or LRF-21). The objective of this project was to support the small-scale and poor dairy farmers in the Beqaa and Akkar regions and goat and sheep farmers in the Hermel and Akkar uplands. Major emphasis was given to the improved quality and hygienic standards of milk and dairy products to safeguard the Lebanese consumer and improve milk prices. The duration of the approved project was for two years (May 2009 to April 2011, later extended to September 2012) with a total budget of USD 2.5 million (originally formulated for USD 6.5 million, in the first project submission).

The project had a positive impact on the lives of the poorest and most powerless farmers, starting from the area of Southern Rashaya Caza to the Northern border of Akkar Mohafazat, passing through the Beqaa areas, reaching 2 000 dairy farmers in more than 260 villages. The major constraint met during the implementation of the LRF-21 project was limitation of funding to reach out to large number of needy farmers, in the vast geographical areas (recommended by the Steering Committee of the project at the start of the project). This forced the FAO project team to apply strict and transparent selection criteria for identifying the poorest among the poor. Hundreds of the poor and needy farmers that deserve assistance could not be reached as a result.

The extension of the project (LRF-26, or OSRO/LEB/201/UNJ) was officially signed on 20 May 2012 for a total duration of 12 months, later extended to 31 December 2014, with a total budget of USD 1.2 million. The objective of LRF-26 was to build on the achievements of LRF-21, with an emphasis on improving the quality and hygienic standards of milk and dairy products to safeguard Lebanese consumers, and to increase milk prices. Some additional geographical areas that were not covered during LRF-21 were included in the project activities, such as North Lebanon and Mount Lebanon and, especially, those areas close to the Syrian border to support communities hosting Syrian refugees.

The LRF dairy project interventions focused particularly on the following actions:

- 1) strengthening the village dairy producers’ associations, in order to reach self sustainability, with increased technical skills and capacities;
- 2) improving milk quality standards by establishing and strengthening the Intermediate Primary Village Milk Collection and Cooling Centre Networks (IPVMCCNs);
- 3) supporting the small-scale dairy holders to improve the milk hygiene and the sanitary conditions of dairy production through the provision of milking machines, food-grade stainless steel milk cans and milk filters;
- 4) empowering female-headed households through the provision of mini-dairies for milk handling and processing at household level, along with training on good dairy production techniques;

- 5) supporting artificial insemination services by training skilled inseminators and providing quality animal semen and supplies to VDPAs; and
- 6) capacity building of dairy smallholders.

The target project sites covered more than 350 villages from Southern Rashaya Caza to the North Lebanon, including West Beqaa, Central Beqaa, North Beqaa and Akkar. In addition, the project activities were extended to North Lebanon and to Mount Lebanon during Phase 2 (see map in Annex 3a). During the implementation period of the two phases, 4 500 dairy farmers were targeted as beneficiaries: 3 000 farmers directly benefited by receiving inputs, livestock services and milk services; and 1 500 farmers indirectly benefited by taking advantage of the milk collection, cooling and transport services, as well as training sessions and artificial insemination services. It is important to underline that the project did not work with dairy cooperatives located in North and Mount Lebanon.

The aim of the project was to increase milk production and quality, farm dairying incomes and living standards, especially of poor smallholders. All activities were implemented in close coordination with the MoA, and were undertaken under an official request from MoA, including the extension to geographical areas such as Mount Lebanon and the Syria–Lebanon border.

The only set of activities which was not implemented is related to Output 4 of the LRF-26 project: “Improved goat milk production by the introduction of intensive system of goat farming, in stationary barns, with import of Shami goats of high dairy breed and upgrading, local Baladi through crossbreeding with Shami males”. This intervention would have been very important, especially in the Donniyeh area. However, it could not be implemented due to funding constraints. The field surveys undertaken in the Donniyeh area show that the economic situation of the citizens was much worse than expected and most of the farmers depended on few goats for their livelihood. In order to have a real and tangible impact, this intervention in Donniyeh had to be reconsidered for a separate project intervention. Therefore, the project activities related to Output 4 were replaced by the expansion of the ongoing actions in Mount Lebanon (Cazas Aley, Baabda and Chouf) as per an official request from the MoA and covered an additional 250 poor small-scale farmers in 65 villages.

The aim of this report is to highlight the achievements of the LRF project of FAO implemented in two phases. The promising elements that emerged during Phase 1 of the project were followed up during Phase 2, and this allowed the project to reach a significant number of poor livestock keepers in Lebanon, leading to the improvement of livelihoods of poor small-scale farmers through sustaining and improving the dairy sector. Particular emphasis was given to the improvement of quality and hygienic standards of milk and dairy products; safeguarding Lebanese consumers; and improving the milk prices at farm gate. The project interventions focused on increasing the income of poor small-scale farmers in rural areas whose subsistence is based on small-scale dairying.

2. ASSESSMENT OF PROGRAMME RESULTS

2.1 Output 1: Support to dairy producers with constitution and rehabilitation of 34 VDPAs to ensure continuity and sustainability

(i) *Achievements*

Project activities began with the constitution and upgrading of dairy cooperatives (VDPAs) to support the dairy sector for better marketing and profitable return on dairy products, and to act as focal points for providing other services to farmers. The LRF-21 project supported the legal procedures and all the necessary steps for the establishment or reviving of a total of 34 VDPAs which were officially authorized by the MoA, thus reaching most of the small- to medium-sized farmers and dairy producers. The MoA had high expectations and hope for the organizations of farmers through the project, considering that grouping small dairy farmers to work together is a delicate process and the most accurate way to improve the standards of the dairy sector in Lebanon.

The VDPAs were distributed between Beqaa and Akkar; 28 VDPAs were administratively created by the project and six cooperatives were revived. The MoA nominated a committee to follow up the VDPAs; this is composed of the project team and the representatives of the MoA (the head of the Cooperative Department in Beqaa nominated as president and national project coordinator (MoA decree number 1/400 of 26 April 2013). The committee conducted regular visits and inspections to the different cooperatives and centres located in the targeted project areas. The objective of the visits was to conduct a fair and rational assessment and evaluation of the situation, focusing on the following points: the legal situation and conditions of the cooperatives; and the technical and operating conditions of the milk collection centres and their equipment and accessories, especially the milk transportation trucks.

Details on the VDPAs – including the names of the cooperatives, the number of villages, the dairy producers of each cooperative and the official registration with date of constitution – are presented in Annex 2. The latest elected president of each cooperative is also listed with contact details. The VDPAs were assessed as active, moderately active or idle. Needless to say these cooperatives do not share the same standard of activeness and vigour. However, most of them (85 percent) are active and prosperous, while some others are moderately active, and few are idle, thus requiring continuous encouragement and support.

(ii) *Rewards and impact of VDPAs*

The total number of direct and indirect beneficiaries of the dairy cooperatives was 3 970, mostly with small and very small holdings. Examples of some of the advantages and rewards of the dairy cooperatives and their positive impact on the dairy sector as a whole, and on the small-scale farmers in particular, were the following:

- a) Improving the quality of milk and, consequently, the price earned by farmers as well as their income: milk hygiene standards (microbial aspects) improved by more than 100 percent and milk prices increased by 20–25 percent.
- b) Reaching remote areas otherwise neglected from the agricultural map of Lebanon and thus improving milk production quantitatively and qualitatively, such as in villages at the Lebanon–Syria border (Rashaya, North Beqaa, Hermel, Akkar).
- c) Substantial benefit to the farmers and producers from the training sessions and workshops on all aspects of farm management and home dairy processing that were conducted for the cooperatives.

- d) Increased number of cows at the existing dairy farms and starting of new dairy businesses or small dairy farms. The total number of dairy cows in Lebanon increased from 45 000 heads (in 2010) to 65 000 heads (summer of 2014), with the number of dairy producers increasing from 9 000 to 11 500.
- e) Establishment of a new sense of security among the small-scale farmers and their families in their remote villages and districts.

2.2 Output 2: Establishment of a National Union for Milk Producers in Lebanon

During 2013, the project requested for the MoA to establish a National Union for Milk Producers in Lebanon, by grouping the VDPAs. This proposal was accepted and the Union was officially created. The main objectives of the National Union for Milk Producers in Lebanon are: development of the milk sector through the marketing and protection of production; and empowering the VDPAs to negotiate with suppliers and dairy processing plants by improving the revenues of dairy producers.

2.3 Output 3: Constitution of IPVMCCNs for milk marketing facilities

(i) Achievements

One of the most important outcomes of the project was the improved milk quality standards and income generation of smallholder dairy producers through the establishment and strengthening of the IPVMCCNs. The milk collection centres were equipped with milk cooling tanks, generators, milk reception and filters, electronic balances, pumps, thermometers, lacto density meters, pH meters, and automatic milk analysers. The milk collection centres were also supported with ten milk transportation trucks, owned by MoA.

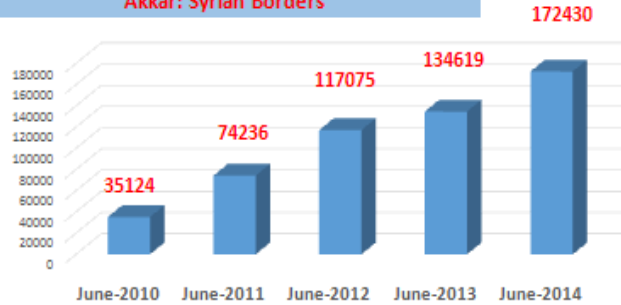
The project staff conducted regular monitoring to establish or to upgrade new milk collection centres, while supervising the existing ones. The project established and upgraded a total of 77 collection centres during both project phases: 32 centres in Phase 1 and 20 small centres (mainly in the Syrian border areas among hosting communities) were created in Phase 2; and 25 existing centres in Dreib (Akkar) were supported with transportation trucks and training. These centres are placed in strategic locations in all project sites where the farmers of each area have easy access for milk marketing with priority to remote areas and the Syrian border. Details of the milk collection and cooling centres are presented in Annexes 3a and 3b. The equipment procured by the project for strengthening the milk collection and cooling centres is also indicated in Annex 3c.

(ii) Rewards and impacts related to collection centres

Almost all milk collection centres (90 percent) are working at full capacity. The total cooling capacity of these centres is 150–200 tonnes of fresh milk collected from 3 534 dairy producers, mainly the small ones (November 2014). Most of the cooling centres are increasing their capacity. They are flourishing and successfully managing their centres following project instructions for hygienic procedures. As an example, the figure below presents the increase of the milk collected in two centres in Kobayat (Akkar).

The project made a breakthrough in Lebanon with the creation of IPVMCCNs. The direct impact of these centres is the milk marketing facilities provided to the smallholders, with a significant increase in milk prices. The dairy plant factories pay an extra LL 100–150/kg for refrigerated milk and the actual farm gate price of chilled milk varies between LL 1 150 and 1 200. This is the result of the better quality of milk and the lower detected acidity (see results below). This improvement in milk quality positively impacts the consumers' health standards. Consequently, the farmer, dairy producer and consumer are all satisfied. There is high demand from project beneficiaries to increase the capacity of the existing milk collection centres and to establish new collection centres in other areas.

**Milk Quantity Evolution at Kobayyat collection Centre
(Kg/month)
Akkar: Syrian Borders**



(iii) *Rewards and impacts related to milk transportation trucks*

The project completed the “milk cycle” by transporting the milk from the cooling centre to the dairy processing plant, through the mobilization of ten milk transportation trucks owned by the MoA. These were leased freely by the project to the farmers’ cooperatives under strict rules and conditions to be adopted in the transportation of milk. The project team conducted frequent inspections to check the conditions of the trucks. In particular, official legal leasing documents and papers for the agreement on the use of the trucks between the FAO dairy project, the MoA and the cooperatives were prepared for a short-term leasing, to be renewed every three or six months. The final renewal was prepared for the end of the project (31 December 2014). The committee assigned by the MoA to follow up on the VDPAs and milk collection centres proposed that the leasing authority and monitoring of trucks be returned to the Regional Department of Cooperatives in Beqaa (MoA) at the end of the project. The project officially handled all milk transportation trucks (ten) to the MoA, through the MoA national project coordinator.

Details of the distribution of the MoA milk transportation trucks to the dairy cooperatives, including the total quantity of milk handled as well as their evaluation, is presented in Annex 4. The trucks were assessed as Excellent, Good, Acceptable and Bad. These remarks are based on the accumulated observations of the project team members during different field visits. The main evaluation criteria were the following:

- cleanliness of the truck, especially the milk pump, milk pipes and insulated tanks;
- milk hygiene standards of random milk samples analysed from transported milk;
- legal and official papers and insurances for the trucks and the driver;
- dress, competency and general knowledge of the driver in relation to the truck operation skills;
- keeping good records of milk delivery and expenses, timely sent to the project or to the Cooperative Department;
- maintenance of the trucks.

One of the most important outcomes of the project is the remobilization and utilization of these milk transportation trucks, which greatly contributed to improving the quality of the milk delivered to the dairy processing plants and which now transport 100 tonnes/day of milk in a safe and hygienic manner. These

trucks significantly contributed to strongly positioning the dairy cooperatives in negotiating for better prices and for selling their milk. As a result, they are no longer at the mercy of the milk dealers and the dairy processing plants.

2.4 Output 4: Milk testing analysis and improvement of milk quality hygiene standards

(i) Achievements

One of the most important objectives of the project was the improvement of milk hygiene standards at the different milk chain segments: farm, milk collection centres and delivery to dairy factories. In order to study and evaluate the impact of the project interventions on milk quality, the project undertook steady monitoring of milk testing and analysis. From the beginning of the project until mid-2014, the project analysed 2 000 milk samples. Random milk samples were collected from project beneficiaries, milk collection centres, milk and milk transportation trucks, dairy factories from Beqaa Valley (Central Beqaa, West Beqaa, and Baalbeck and Hermel Casas). The milk samples were tested for the quantitative parameters: total aerobic count or standard plate count, coliform count, somatic cells count (SCC), titratable milk acidity, pH, specific gravity (density) and temperature, fat, solids non-fat (SNF), protein content, added water and freezing point.

(ii) Results and impacts

The results presented in Table 1 show that the project interventions produced a tremendous improvement in the milk quality and hygiene, in particular on the following parameters:

- *Dornic acidity.* Higher values of dornic acidity reflect poor milk handling and cooling facilities. The availability of milk cooling tanks and the utilization of stainless steel milk cans with filters have improved the milk acidity.
- *Density.* The density of milk is a very good index to evaluate its physical quality, as it reflects its solid content. Since milk is slightly heavier than water due to its protein content, lower density values that are below 1.026 g/cc may indicate the addition of water; the higher values of density (above 1.034 g/cc) may reveal the extraction of part of the fat (skimming). Both of these practices are considered methods of milk adulteration by law.
- *Added water.* The provision of equipment to the milk collection centres, with dairy equipment for milk analysis and testing, has dissuaded the fraudulent farmers from adding water to the milk.
- *Fat, proteins and solid non-fat contents.* Training sessions on cow feeding has improved the milk chemical composition, as there is a positive correlation between the feed balanced ration with the utilization of the forage and the fibre.
- *Total aerobic bacterial counts (standard plate) (cfu/g).* Milk testing and analysis show a significant and continuous reduction in the total aerobic and microbial content in milk. This improvement is attributed to the intensive training and follow up with the farmers and to the hygienic equipment provided for handling and refrigerating the raw milk.
- *Total coliforms (Escherichia Coli).* The main source of milk contamination with coliform bacteria – known also as fecal bacteria – is poor hygiene. Very important improvements in hygiene were made due to the better milk handling practices, equipment used and increased awareness of hygienic procedures.
- *SCC.* The SCC is an indication of subclinical mastitis with dairy cows. The higher the SCC, the greater the loss in milk production and the risk of getting clinical and acute mastitis. The acceptable values in Lebanon, proposed by the project, are less than 500 000 cells per gram.

Moreover, the project compared the milk hygiene standards between the small producers with less than 15 cows and medium/large dairy producers owning more than 15 cows. It was found that small producers

(who personally take care of their cows) have better milk hygiene than the medium- and large-scale farmers, who often use labourers for milking and feeding their animals. As presented in Table 2 below, the total aerobic bacterial counts (standard plate) (cfu/gr), total coliforms (*Escherichia Coli*) and SCC in milk samples collected from the dairy farmers from Central Beqaa, are significantly lower with small-scale producers' milk than with the medium- and large-scale producers.

(iii) *Conclusion on milk analysis and testing*

The strategy introduced by the project to improve milk hygienic standards in Lebanon has significantly contributed to the upgrading of the dairy subsector, as well as food safety with dairy products. The impact can be clearly felt by all dairy stakeholders, as there has been a significant improvement in milk hygiene standards (better quality of milk with lower detected acidity and contaminating germs) and significant increase in the milk prices (20–25 percent). This improvement in milk quality in turn positively impacts consumers' health standards. Consequently, the farmer is satisfied by obtaining higher prices; the dairy plant owners benefit from clean milk and less conflict with dairy producers and milk dealers; and consumers can buy healthy dairy products.

Table 1: Comparative study on milk testing and analysis during the project

Year	Dornic	P ^H	Density	Added water to milk	Fat	SNF	Protein	Total count	Total coliform	Somatic cells
2010	20	6.74	27.5	2.0	3.84	8.28	3.15	5 500 000	87 453	–
2012	16.7	6.54	30	0.33	3.91	8.46	3.2	356 153	3 670	310 560
2014	16.3	6.65	29.1	0.1	3.95	8.7	3.3	400 000	2 500	450 000
Standards	14–18	6.5–6.8	28–32	0%	3.5–4.2%	8.2–9.5	2.6–3.6%	<600 000 CFU/ml	<10 000 CFU/ml	<500 000 CFU/ml

Table 2: Comparative study on milk testing and analysis between small-, medium/large-scale dairy producers in Central Beqaa (Summer 2014)

Farmers	Fat	Total count	Total coliforms	Somatic cells
1 = <15 cows	3.9	400 526	203	468 842
2 = >15 cows	3.68	947 222	573	858 500

2.5 Output 5: Support to artificial insemination and improvement of cow reproduction

(i) *Achievements*

The artificial insemination services in Lebanon are generally very weak, except for individual pursuits for some large farmers. Only 10 percent of dairy producers are using artificial insemination, while the majority of farms use bulls for mating their cows. By the end of 2013, the project had organized two artificial insemination training sessions in Beqaa and North Lebanon by grouping 80 people from the MoA and the VDPAs. Twenty seven outstanding inseminators from this group were selected to receive artificial insemination equipment kits. These were distributed as follows: five in West Beqaa and Rashaya; three in Central Beqaa; seven in Baalbek–Hermel; ten in Akkar and North; and two in Mount Lebanon.

Twelve of the most competent ones were provided with ultrasound pregnancy detectors. These inseminators have started working in the field and serving the areas and the cooperatives to which they

belong. The main objective of these interventions is to create a positive impact on the genetic base of the dairy herd in Lebanon and to reduce the cost of reproduction for poor, small-scale farmers. During the reporting period, the project conducted regular field visits to follow up and monitor the activities of the inseminators in the project sites, in order to make sure that they were following the rules and standards set by the project. The inseminators were visited individually; each of them was interviewed, in conjunction with the visits to the dairy farms. Cross-checking with the farmers and the records kept by the inseminator was also done. Random samples of the inseminated cows were selected and tested for pregnancy.

(i) Results and impacts

The results of the artificial insemination are presented in Annex 5, including the names of the inseminators, their working areas, the number of inseminated cows and the efficiency of the artificial insemination, as well as their evaluation according to: the total number of cows inseminated during the inseminator's assignment (ten months); the number of pregnant cows inseminated; and the efficiency of the inseminations. The inseminators were assessed as active, moderately active and idle. Not all of the inseminators performed with the same standard of activeness and vigour. However, most of them were active (85 percent), some were moderately active, and a few were idle and required continuous support.

A total of 16 445 cows were served (number of inseminations) by the project's inseminators during the ten-month period, with an efficiency rate of 50.5 percent. The average of successful inseminations is considered a very promising and positive result, for the newly trained inseminators. This result will eventually improve as these inseminators gain more experience. It is also important to note that the inseminators undertook their work in a difficult environment, as most farmers are not aware of the time criticality of artificial insemination. Most of the inseminators were very punctual on refilling the semen jars with liquid nitrogen and this helped to prevent semen deterioration. The inseminators are building a network of assistance with and for the dairy farmers, in their respective areas. It is very important to note that most of these inseminators gained a very good level of practical education during the training courses on veterinary medicine, livestock feeding and nutrition. During their visits to the dairy farms, the inseminators took the responsibility for advising the farmers on basic rules of animal health and nutrition.

The major constraint faced by some inseminators relates to the absence of identification of cows. In many remote areas – such as Masharee El Qaa, Wadi Khaled and Fnaydek – the cows do not have ear tags or serial numbers. In addition, some regional MoA veterinarians complicated the inseminators' tasks as they run – in addition to their position in the public service – their own private companies involving artificial insemination, and prioritize these private services over the public ones due to the cash return the former can have.

2.6 Output 6: Support to stabilization of milk prices with the establishment of contracts between the cooperatives or milk collection centres and dairy processing plants

(i) Achievement

Milk prices were a very important issue in the schedule of the FAO dairy project. Since the constitution of the VDPAs and milk collection centres' network, the project staff held regular meetings with the dairy cooperatives and owners of the dairy processing plants to support farmers in the marketing of their milk, with the guarantee of a fair milk price. The project acknowledged that a great value in improving the dairy sector is due to the involvement of the private sector in development activities. Therefore, the project strategically enhanced such partnerships, with an emphasis on encouraging collaboration and cooperation between the dairy processing plants and the farmers' cooperatives, through the milk collection centres. The project team supervised the renewal of the cooperative agreements by establishing

contracts between the cooperatives or the milk collection centres and the dairy processing plants. As a result of these interventions, the milk price was stabilized at LL 1 150–1 200/kg at factory gate and LL 1 000–1 050/kg at farm gate.

(ii) *Technical empowering of the National Union of Milk Producers in Lebanon*

The project was always a major player in standing up for the dairy processing owners when attempts were made on several occasions to reduce the price of milk. The project called for several urgent interventions of the corresponding ministries to protect poor small-scale farmers, with extensive presentations on the high milk production cost that is strongly correlated with the increasing price of feed. The VDPAs, as well as the National Union of Milk Producers in Lebanon and the Head of the regional Department of Cooperatives in central Beqaa, received sound training on technical issues on how to calculate milk production costs, in order to improve their position with dairy processing plants when discussing milk prices. The following elements have been relevant for negotiating a fair milk price:

- Most of the dairy farmers are poor and small-scale producers who depend primarily on milk sales for their income. They are suffering from the general increase of the cost of living, much like everyone else in Lebanon.
- Milk price were always a key issue in this project. It is the determining factor that guides the decisions of the profitability in the dairy business. In addition to this, the cost of production, where the feed prices are the most pronounced, will determine the prosperity of any development project.
- Feed prices are a determining factor that guides the decisions of the profitability in the dairy business. The cost of concentrate feeds represent 40–45 percent of the total milk production cost while, together with forage, it represents 65–70 percent of the total milk production cost in Lebanon. Unfortunately, the prices of imported grains and concentrate feed are increasingly high.
- Lebanon has a serious deficit of dairy products: dairy consumption is estimated at 130 kg/person/year and the dairy self-sufficiency is less than 30 percent. The balances of dairy products in Lebanon, cost of milk production and evolution of the milk price at farm gate are presented below.

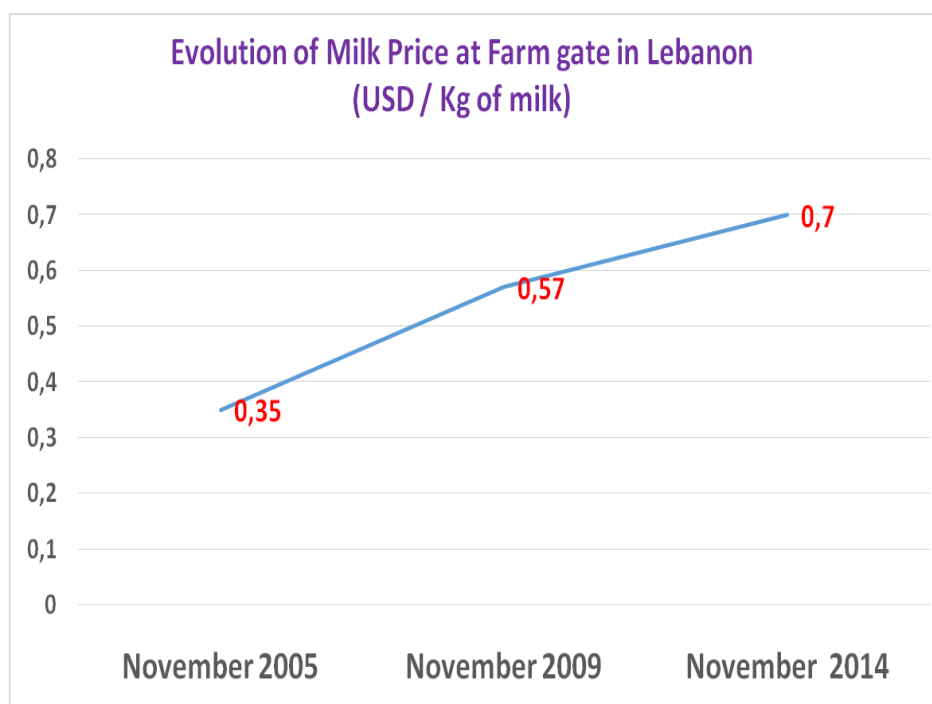
Balance of Dairy products in Lebanon (2013)	
National Production	220,000 T Milk Equivalent
National Consumption	750,000 T Milk Equivalent
Total Import	530,000T Milk Equivalent
Value Of Import	US\$ 400 Million

- The milk production cost is USD 0.65 and the milk price at farm gate is USD 0.7, meaning almost no profit.

Milk Production Cost with 50 Smallholder Dairy Producers with less than 10 Cows from Beqaa & Akkar

**Family dairying activity: Family work,
Investment level (nothing or limited),
Origin of funds (own),**

*Cow Amortized Value :	625
* Feeds :	2300
1. Concentrate feed : 4 tons X 450 \$	
2. Straw (Tibn) : 2,5 tons X 200 \$	
*Vet medicines	50
*Bull Service	100
*Cow replacement : 0,15 heifer X 2500 \$	375
*Miscellaneous (electricity, water...)	50
Cost per cow per cycle per Year	3500
Values to be deduced :	
*Calf : 0,7 X 0,9 calf X 200 \$	126
*Culled cow : 0,15 cow X 1000 \$	150
Other revenue than milk production :	276
Total Cost / Cow / Year	3224
Total Cost of Milk Production	0,65 \$ (967 L.L / kg)
Contribution of concentrate feed to Total Milk Production Cost (%)	56 %
Contribution of feeds to Total Milk Production Cost (%)	71 %



The project identified the following requests to the Ministries (MoA, Ministry of Economy and Trade [MoET] and Ministry of Industry [MoI]) of priorities to:

- limit imports of bulk milk powder that is used by processing plants to replace fresh milk, as its international prices recently declined;
- limit imports of UHT milk to create new lines of production for local factories;

- activate the related ministries to inspect and control dairy processing plants, retail outlets, transportation facilities and the milk and dairy chain as a whole; and
- raise the guideline price of milk to accommodate for the increase in cost of living, price of veterinary and other dairy farm essentials, cost of imported dairy cows and risks that the dairy herds are exposed to (especially fatal and contagious diseases).

(iii) Milk price crisis in December 2014

During the preparation of this report, the issue of food safety came into focus when the Ministry of Health (MoH) announced the names of restaurants and food establishments that were selling contaminated food. The MoH described the condition of food safety in Lebanon as “truly catastrophic” and, as a consequence, the Interior Ministry closed down several food companies (restaurants, slaughterhouses, farms, etc.) for failing to meet food safety standards and general hygiene. This food security scandal severely affected the dairy subsector.

The MoET ordered six dairy factories to halt production of Labneh following the results of the samples that failed health safety tests, in the latest push of a nationwide crackdown on establishments for violating food standards. The local media reported the six dairy factories to be: Laqlouk, Qaisar, Masabki, Center Jdita, Chtaura products and Hawa Dairy. The MoET said that the Labneh tested contained microbes, bacteria and acids that could endanger consumers, particularly pregnant women. He requested them to stop producing Labneh temporarily, until they resolve their issues in the productive chain.

The food scandal drew varied reactions, including fear among consumers of purchasing dairy products. This issue directly affected dairy producers and the marketing of milk. Milk producers organized several sit-ins with the blockage of the main roads to protest the low milk prices and the closing down of some dairy factories that stopped receiving milk from farmers. The project advised the dairy cooperatives to reduce their milk production by reducing quantities of concentrate feed distributed to cows, rather than accepting the reduction of milk prices until the situation could be resolved.

2.7 Output 7: Training sessions and workshops

(i) Achievements

One of the most important outcomes of the project was to address the priority constraints related to the poor knowledge and technical skills of smallholder dairy farmers because of the apparent weak linkages between small producers and the extension service of the MoA. Training sessions, workshops and on-farm demonstrations were therefore undertaken as a continuous process in parallel with the other project activities. The project trained a total of 3 500 dairy producers and technicians (2 000 people during Phase 1 and 1 500 people during Phase 2) on various dairy topics: improving milk hygiene and sanitary conditions with good practices in milking procedures, feeding management, forage production and utilization, processing of dairy products, ration formulations and improvement of cow reproduction. During Phase 2 (LRF-26), 70 percent of those trained were from the extended areas (Mont and North Lebanon) and new farmers starting their dairy business from the previous project sites.

The training sessions were supported by the production of 20 000 booklets, covering all training material and using very simple language and colourful, attractive presentations on the following topics:

- good practices in processing of improved traditional dairy products;
- good practices in feeding dairy cattle and ration formulations;
- good practices in using the milking machine, milk handling and milk hygiene;

- good practices in the cultivation, conservation and utilization of rainfed fodder crops (oat, barley, vetch and rye grass);
- good practices in the cultivation and utilization of fodder corn;
- techniques for milk testing and analysis;
- good practices in milk hygiene standards at milk collection centres; and
- good practices in the improvement of cow fertility.

The most recent training sessions, given during Phase 2 (LRF-21), were as follows:

1. Eight one-day sessions were conducted in the North before the distribution of the small dairy processing units. This training was held in Batroun on 16 July 2013 and Bakhaoun (Donniyyeh) on 1 August 2013. About 200 participants attended the training, including producers and farmers (90 percent of which were women). The major topic was the good manufacturing practices and the new technology in cheese and yogurt production. Following the training sessions, the project provided 100 women with food-grade stainless steel equipment and utensils for small- and medium-sized home production. Certificates were also awarded to each participant.
2. Two training sessions were held in December 2013 in Zahle (Beqaa) and Batroun (North Lebanon) on artificial insemination and improvement of cow fertility. Each session lasted for two weeks. An outstanding and competent group of veterinarians and specialists in artificial insemination supervised the training sessions. The outstanding inseminators (27 participants) were provided with complete artificial insemination kits and have already started working with VDPAs.
3. Furthermore, 12 ultrasound pregnancy detector machines were given to the outstanding inseminators. General training to all of them was carried out at the beginning. Later, each inseminator was visited at his site and a special training and practical field demonstrations were conducted for each inseminator.
4. Finally, the project gave a series of three training sessions in Mount Lebanon to 250 dairy producers in December 2014. The topics covered were: balanced and proper feeding and nutrition of dairy cows at different stages of production; good practice to improve cow fertility; and good and hygienic milk production practices and milk handling at the farm level and during transport.

(ii) *Rewards and impact*

The improved managerial skills of beneficiary farmers have been reflected in the general conditions of their farms and the quality of milk that they produce. The direct impact was the improved milk price and the reduction of the cost of production, thus improving farmers' income and standard of living. Many farmers and producers were encouraged to start a small-scale dairy processing business, following the attendance of the workshops on cheese and yogurt processing. This step allowed for the achievement of a substantial added value to the milk produced by the small- and medium-sized farmers.

2.8 Output 8: Attending to the urgent needs of Syrian refugee farmers in the project sites

The project activities covered vast geographical areas, including the Syria–Lebanon border in hosting communities that are dealing with the continuing influx of Syrian refugees. In many villages – especially those at the border such as Wadi, Khaled, Kobayat, Hermel, Machariaa El Qaa, Labwa and Delhamya – the number of Syrian refugees has exceeded the number of local residents. Almost all of the refugees are poor and vulnerable families comprising a high percentage of women, children and elderly. The presence of such a large number of refugees affected project activities, generating a great demand of all the supplies, especially the dairy products. The project established 20 milk collection centres in those areas and strengthened the capacity of the existing ones. Priority was given to women-headed households for

the distribution of mini- and medium dairies and for training in order to increase the supply of traditional dairy products processed at the village level.

2.9 Output 9: Procurement and delivery of project inputs

Phase 2 of the project aimed to respond to the intensive demands and requests by small-scale dairy producers – particularly at the Syria–Lebanon border, and in refugee-hosting communities in Wadi Khaled, Kobayat, Hermel, Machariaa El Qaa, Labwa and Delhamya –, as well as cover the extended project sites (North and Mount Lebanon) by distributing dairy equipment. The list of equipment procured and distributed within LRF-26 (Phase 2) is found in Annex 6. The detailed lists of project beneficiaries, as agreed with and signed by the MoA project coordinator and the project manager, were carefully prepared and delivered to the administrative unit (FAO Representation in Lebanon). Those lists, together with all the individual delivery notices signed by each beneficiary, were delivered to the Regional Department of Cooperatives in Zahle, assigned by the MoA, to continue following up the VDPAs and the milk collection centre networks. However, by considering the request of many NGOs to work with women supported by the project, the list of women granted with small and medium dairy equipment for home processing of improved traditional dairy products are presented in Annex 7.

2.10 Output 10: Support to small-scale dairy holders through the distribution of milking machines, food-grade stainless steel milk cans and milk filters

(i) Achievements and impact of distribution of milking machines

The project dealt with the neediest and poorest people in Lebanon: it identified (across both project phases) 1 200 small-scale farmers (mostly elderly women with health problems) who did not have a milking machine and depended on time-consuming manual milking. The project provided 487 single-head electrical milking machines, along with the necessary detergents and disinfectants, teat dipping solution and cups to 487 poor farmers who have two to ten cows. Most were women-headed households. A total of 362 farmers were supported by the LRF-21 project and 125 farmers by the LRF-26.

The farmers were trained to undertake the correct milking procedures, and to prepare the cow before, during and after milking. Teat dipping, washing and disinfecting of the milking machine were also emphasized, which had a positive impact on the prevention of udder mastitis while improving milk hygiene standards. Considering the high demand and the impact of the distributed milking machines, the MoA offered an additional 160 milking machines as an extra support to FAO's programmes. This renewed commitment of the MoA helped, together with the contribution of the project, to satisfy the needs of the small dairy producers, especially the women-headed households, as the milking machines alleviated and reduced their daily work.

(ii) Achievements and impact of distribution of milk cans

FAO's findings indicate that most of the dairy farmers (especially the small- and medium-scale ones) and milk collectors in Lebanon use non-hygienic plastic or metallic milk containers that are a major source of contamination. The handling of the milk directly after milking and during storage and transportation are of critical importance for maintaining the good quality of raw milk. The project distributed 4 500 stainless steel milk jars of 20- and 40-litre capacity along with 5 500 milk filters to 3 000 small-scale farmers who have 2–15 cows. Considering the high demand and the impact of the distributed stainless steel milk cans, the MoA offered an extra 2 000 stainless steel cans along with 3 000 milk filters, showing its reconfirmed support to FAO's programmes.

The impact of the distribution of stainless steel milk jars is visible in the field, where VDPAs are now collecting the milk from the project farmers, handled in hygienic stainless steel milk jars. The small-scale farmers can be sure that their milk will not spoil in the hygienic stainless steel while waiting to be delivered. The milk rejected and discarded has been reduced by 85 percent because of the absence of the high acidity and the rancid smell of the plastic jars. As a consequence, the farmers and the managers of the milk collection centres are satisfied. The improvement of the milk quality and therefore of the milk prices, together with the reduced milk refusal, can be attributed in part to the replacement of the plastic milk jars with the stainless steel.

2.11 Output 11: Support to women-headed households with home processing dairies for the production and marketing of improved traditional dairy products

(i) Achievements

One of the most important outcomes of the project was achieved by assisting women-headed families with the appropriate small dairy equipment to produce home-processed healthy traditional dairy products of better quality, while getting added value and creating job opportunities. The project provided 230 women-headed households (145 within the LRF-21 project and 85 within the LRF-26 project) with essential tools and utensils for home dairy processing. The project trained a total of 350 persons (of which 90 percent were women-headed households) on improving milk quality standards, good manufacturing practices and new technology in the production of local white varieties of cheeses and yoghurt to obtain healthier and safer dairy products. The list of women-headed households granted with dairies across both project phases is indicated in Annex 7.

(ii) Rewards, impacts and sustainability

- The small- and medium-size home dairy processing equipment helped farmers to add value to their milk. For example, instead of selling raw milk at LL 1 000, farmers are able to sell Labneh, yogurt and cheeses obtained through the milk transformation at more than LL 1 600/kg of milk.
- The home processed dairy products are sold to neighbouring villages and in the cities, where demand for improved and healthier dairy products is increasing.
- The project generated employment opportunities, especially for women working in these units who otherwise would not have any other source of income. Dairying is an appropriate means to enable rural women's economic empowerment, in terms of decision-making authority at the household level with the handling and marketing of traditional dairy products.
- Increasing the availability of dairy products by improving the small-scale dairy processing for better production has allowed the upgrading of the quality and safety standards of nutrition.
- The support to small dairy holders – especially the women-headed households and those isolated from the milk collection facilities – with small equipment for milk handling and processing at farm or house, particularly served the largest Syrian refugee clusters.

The interventions undertaken to encourage women to produce improved local dairy products had a positive impact on the general wellbeing of the farmers and the quality and hygienic standards of milk and dairy products. More than 90 percent of the women are using the dairy equipment on regular basis. It is a very important source of income (and sometimes the only source) for most of the families. Most of the project beneficiaries follow the indications provided to them by the training sessions; they make proper use of the booklets on dairy processing received during the training and refer to it for their work; and they maintain the equipment clean and disinfected, and the quality of the products that they are

producing is very good. It is sold to the neighbours and relatives in the village, as well as in the cities. The average volume of milk processed by women each day ranges between 50 to 80 tonnes.

A large number of calls and enquiries have been received by the project to expand this particular activity across Lebanon. Most of the small dairy farmers feel more secure when they have the ability to transform their milk into cheese and yogurt, and this allows them to be relieved by the control of the milk dealers and the dairy processing plants.

2.12 Output 12: Support with forage seeds for promoting fodder crops to sustain the dairy subsector

(i) Achievements

Dairy cattle feeding in Lebanon relies on concentrate feed with ingredients that are almost all imported, and follow the international market with steadily increasing prices. The concentrate feed is considered as the most important factor when calculating the total cost of milk production (40–45 percent). In response to the improvement in animal feeding and competitiveness of the dairy sector in Lebanon, the project developed a strategy for the sustainable development of animal production by supporting dairy farmers with high quality seeds for demonstration and promotion of forage crop cultivation. To this end, during Phase 1 (LRF-21), 115 tonnes of certified seeds (oats, ryegrass, vetch and alfalfa) were provided to 600 dairy producers for demonstration and planting. This activity was critical to protecting the livestock sector as a whole, and the smallholders in particular. During the implementation of Phase 2 (LRF-26), the project continued giving high priority to promoting forage development in the fertile Beqaa and in North Akkar by regularly providing on-farm demonstrations and practical training on cultivation, conservation and utilization of fodder crops.

(ii) Rewards and impacts

The direct impact was improved dairy cattle feeding and increased milk production. The total area for forage cultivation under rainfed and irrigated conditions in Beqaa and Akkar increased from 3 000 ha (in 2010) to 4 500 ha (in 2014). The project activities on fodder crops were considered by the MoA as a critical issue for securing and sustaining the dairy producers. Therefore, the MoA launched (starting at the end of 2012) a subsidy programme entitled “Forage cultivation and livestock production development project”, with a total budget of USD 125 million spread over five years. The FAO–LRF project actively contributed to its preparation and implementation strategy.

3. INDICATOR-BASED PERFORMANCE ASSESSMENT

Output	Performance indicators	Indicator baselines	Planned indicator targets	Achieved indicator targets	Source of verification	Reasons for variance with planned target (if any)
<p>Development goal: Improve the livelihoods of poor dairy farmers and sustain the dairy sector in Lebanon. Emphasis is on improving the quality and hygienic standards of milk and dairy products to safeguard Lebanese consumers and improve milk prices through the provision of small dairy equipment, establishment/revival of farmers' organizations and capacity building.</p> <p>Immediate objective: Provide assistance to the livelihoods of vulnerable livestock keepers through the distribution of equipment, support with animal inputs and services, grouping of farmers into VDPAs and the setting up of milk collection centres networks.</p>						
<p>Output 1.1 Empowerment of farmers through the constitution of VDPAs in management of milk collection centres and milk marketing.</p>	<p>Indicator 1.1.1 34 VDPAs officially established and functioning in the region and standards of the dairy sector in Lebanon improved.</p>	<p>Increase of milk prices and providing services to farmers (milk collection).</p>	<p>Follow-up of 28 existing VDPAs (Phase 1) and establishment of six new ones.</p>	<p>Yes</p>	<ul style="list-style-type: none"> - Legal tables of cooperatives. - Official Gazette of Lebanon. - MoA meetings on milk prices. - Copies of milk contracts. - Press coverage on milk prices. 	<p>No</p>
<p>Output 1.2 Material support related to good farm management, milk hygiene and farm house processing.</p>	<p>Indicator 1.2.1 # of dairy inputs distributed to farmers.</p>	<p>Farmers able to increase milk production and improve hygienic practices.</p>	<p>Phase 2: distribution of 2 994 cans and 3 700 filters; 125 milking machines with 500 teat cups and detergent; and 85 small and medium dairies and 14 milk cooling tanks, both with accessories.</p>	<p>Yes</p>	<ul style="list-style-type: none"> - Delivery notices. - List of project beneficiaries with signature. 	<p>No</p>
<p>Output 1.3 Improving the quality and hygienic standards of milk through the development of primary milk collection and cooling networks at village level.</p>	<p>Indicator 1.3.1 Creating primary milk collection networks, supplemented by a milk refrigeration centre at village level.</p>	<p>Farmers have collection points to bring milk for cooling and transport to dairy plants.</p>	<ul style="list-style-type: none"> - Strengthening 32 existing milk collection centres from Phase 1. - 77 primary village collection centres: 32 milk collection centres from Phase 1 strengthened; 20 small centres (mainly on the Syrian border and in hosting communities) created through Phase 2; and 25 existing centres in Dreib (Akkar) supported with transportation trucks and training. - Total capacity of 150–200 tonnes/day (collected from 3 500 farmers). 	<p>Yes</p>	<ul style="list-style-type: none"> - Data on milk production recorded by milk collection centres. - Project M&E reports. 	<p>No</p>

<p>Output 1.4 Improving dairy processing and milk hygiene through capacity building and the provision of facilities necessary for the proper processing of improved traditional dairy products.</p>	<p>Indicator 1.4.1 Improve the quality and quantity of dairy products produced at home or farm level.</p>	<p>Women are able to transform all or part of their produced milk into quality dairy products that are usually sold at the village, or sent to the city.</p>	<ul style="list-style-type: none"> - Capacity building for 200 women on good practices and new technology in cheese and yogurt production by providing 100 women with dairy utensils and equipment (Phase 2). - Total (both phases) of 350 women improved their income from home dairy processing. 	<p>Yes</p>	<ul style="list-style-type: none"> - Tables of the attendant names with signature. - Extension booklets on dairy processing. - Tables of names of women that received equipment with their addresses and signatures. 	<p>No</p>
<p>Output 1.5 Improvement of dairy cattle fertility through capacity building of skilled artificial inseminators and the distribution of artificial insemination kits and semen.</p>	<p>Indicator 1.5.1 Improvement of farm management with increasing cow reproduction efficiency and profitability.</p>	<p>Farmers able to increase milk production by reducing calving intervals.</p>	<ul style="list-style-type: none"> - Capacity building for 80 trainees from dairy cooperatives and MoA extension service (38 from Beqaa and 42 from Akkar and North). - Distribution of artificial insemination kits and semen for the establishment of 27 artificial insemination centres. 	<p>Yes</p>	<ul style="list-style-type: none"> - Lists of attendance with signature of participants and detailed report produced on organization of training courses. - Delivery notes of artificial insemination kits to successful trainees, with their signature. - Delivery notes of semen doses (MoA) to inseminators. - Monthly report from inseminators. 	<p>No</p>

4. EVALUATION, BEST PRACTICES AND LESSONS LEARNED

4.1 Impacts of the project (Phases 1 and 2) on dairy subsector in Lebanon with quantitative evidence

Although the closure workshop was held on 29 July 2015, the project completed all its activities by 31 December 2014 and a summary of the quantified progresses and impacts achieved in the dairy milk production subsector is shown below (from the beginning of the project in 2010 – across both phases, LRF-21 and LRF-26 – to date). The major impacts are: increased milk production and hygiene, the related farm dairying incomes and living standards, especially of the poor small dairy holders; and the improved quality and hygienic standards of milk and dairy products to safeguard the Lebanese consumer and improve milk prices.

Impacts of the FAO LRF project (Phases 1 and 2) with quantitative evidence (summary statement)

Project outputs	Project outcomes
Constitution of and support to 34 VDPAs, covering nearly 4 000 farmers (Beqaa and Akkar areas), working at 85 percent capacity.	<ul style="list-style-type: none"> • Empowering small-scale farmers to negotiate with suppliers and dairy processing plants, improving their revenues from milk production and sales. • Organization of small dairy farmers, including managing lacto-freezers, selecting members to participate in training events, organizing the purchase of farm inputs and assisting members to secure public subsidies.
Establishment of 77 IPVMCCNs equipped with cooling tanks, other necessary equipment, milk testing laboratories and supported by ten insulated milk transportation trucks (Beqaa and Akkar), working at 90 percent capacity.	<ul style="list-style-type: none"> • The total quantity of milk handled and refrigerated is 150–200 tonnes/day (collected from 3 500 farmers). Smallholders with less than 15 cows represent 75 percent of total farmers and 66 percent have less than six cows. • Giving dairy smallholders a stronger stance in negotiating for better prices and deals in selling their milk. • Improvement of milk hygiene standards, resulting in the significant increase of milk prices (by LL 100–200/kg).
Distribution of 487 single-head electrical milking machines, along with detergents and disinfectants, teat dipping solution and cups, as well as 4 500 stainless steel milk jars with filters to poor farmers (mainly women-headed households) in Beqaa, Akkar, North and Mount Lebanon. They are being used at 95 percent capacity.	<ul style="list-style-type: none"> • Alleviation of the daily work of women, helped in their milking chores by saving time and exertion. • Contribution to the improvement of milk hygiene standards: better quality of milk with lower detected acidity and contaminating germs. The quantity of discarded milk is reduced by 90 percent.
Support to 350 women-headed households and women cooperatives, with essential tools and utensils for home dairy processing (small and medium dairy processing units with accessories) in Beqaa, Akkar and North Lebanon, and used at 95 percent capacity.	<ul style="list-style-type: none"> • Empowering women with income generation from processing and selling improved traditional dairy products, by getting an added value of LL 350–500/kg milk. • Generation of new job opportunities, especially to women (1 000 jobs generated for milk collection, processing and marketing); business is increasing with the growing demand. • Production and availability of improved and healthy traditional dairy products in villages and rural areas.
Building capacities of 3 500 farmers through conducting training programmes supported by 20 000 extension manuals related to improving farm management practices, milk hygiene, good practices for milk processing, feeding and promoting fodder crops, improvement of cow reproduction in Beqaa, Akkar, North and Mount Lebanon.	<ul style="list-style-type: none"> • Improvement of dairying management. • Increase in number of dairy farms by 20 percent. • Increase of milk productivity per cow (25 percent). • Tremendous improvement in milk quality and hygiene, considering the total bacterial counts and milk acidity with an improvement of more than 100 percent.
Providing more than 115 tonnes to more than 600 farmers of certified seeds (oats, ryegrass,	<ul style="list-style-type: none"> • Promoting the cultivation of fodder crops; under the project, more than 4 000 ha were cultivated with forages in Beqaa

vetch and alfalfa) for demonstration and planting in Beqaa and Akkar.	and Akkar. <ul style="list-style-type: none"> • Improvement of dairy cattle feeding and increasing milk production (10 percent minimum), with the improvement of milk fat content (two point increase). • Decreasing cow diseases, related to feeding excessive concentrate feed (foot rot and displacement of stomach), with distribution of forage as a source of fiber.
Improvement of dairy cattle fertility through the training of 80 inseminators and the assignment of 27 effective graduate inseminators, who were granted with a complete artificial insemination kit, working with VDPAs in Beqaa, Akkar, North and Mount Lebanon; 70 percent of inseminators are working efficiently.	<ul style="list-style-type: none"> • Improved reproduction efficiency of dairy cows, with increased number of pregnancies and calving, and reduction of culling cows. • The inseminators (27) trained and equipped by the project have inseminated more than 16 000 cows in one year (2014), with a success rate of 51 percent.
Supporting Syrian refugees who depend on livestock for their livelihood and the Lebanese farmers in communities hosting these refugees.	Reinforcing livestock farmers in the hosting communities with small dairy processing equipment for home production of cheese and yogurt, and establishment of milk collection centres to facilitate milk marketing.

4.2 Success factors and innovative elements applied by the LRF FAO dairy project

The project received recognition from all stakeholders involved in the milk production chain – dairy producers, dairy processing plants, MoA and NGOs – as a good example of recovery and rehabilitation of the dairy subsector in Lebanon in terms of planning, implementation, sustainability, improving food safety standards and helping to generate income for poor rural farmers. The MoA and the LRF fully supported the activities of the project. The two general success factors and the innovative elements, which enabled the LRF FAO project to impact the dairy subsector and livelihoods in Lebanon, are the following:

- (i) *Participatory approach of the farmers by conducting extensive field surveys, through individual visits to the dairy farmers.*

At the beginning of the project, there was a serious lack of reliable data and statistics on dairy production, the distribution of dairy farms and their conditions in all project sites. Therefore, the project started by conducting extensive surveying activities in individual villages, covering a total of more than 300 villages and 4 500 dairy farmers. The main objective was to generate a better understanding of the general environment prevailing in the targeted areas to produce a necessary authentic and realistic database, in order to identify the project intervention priorities and decide on the beneficiary selection criteria.

- (ii) *Implementing the project interventions by using a chart related to the dairy subsector issues and the project response, with a participatory approach of all stakeholders involved in the dairy value chain.*

The data collected emphasized the consideration of the real situation of the farmers, their living conditions and locations, livestock, milk production, handling, processing and marketing, and farm management (feeding, health, land and fodder crops). Furthermore, the project team conducted a survey on the milk processing plants, milk collection centres (where they existed) as well as on dairy middlemen involved in milk collection in the targeted areas, as an integral component of the milk value chain.

The positive development of the dairy subsector in the areas targeted by the project was possible thanks to the priority interventions identified and implemented, following the chart developed ad hoc, related to the dairy subsector issues and project response, presented below. This chart represents the strategy and implementation modality that the project carried out in coordination with and under the guidance of the MoA.

Implemented project interventions according to the dairy subsector issues and project response

Priority constraint	Primary reasons	Project responses (interventions implemented)
<p>1. No profit with small-scale dairying.</p>	<ul style="list-style-type: none"> • Low and unstable price of milk, while increasing prices of concentrate feed. • Lack of/low cultivation and utilization of fodder crops. • Small-scale dairy producers. • Lack of/very poor milk collection system and difficulty of milk marketing. 	<ul style="list-style-type: none"> • Setting up and upgrading 77 IPVMCCNs, with the constitution of 34 VDPAs and grouping of neighbouring villages for a better marketing and bargaining. A total of 3 500 dairy producers, mainly smallholders, are taking advantage of milk marketing. • VDPAs used as focal points for providing other services to farmers including artificial insemination services, training programmes to improve farm management practices, milk hygiene, feeding and promoting fodder crops. • Members of VDPAs elected as representatives from each village, selected only among farmers earning their living from dairying, without any political or religious affiliation. Most VDPAs created by the project. • Provision of milk cooling tanks to VDPAs, equipped with all the necessary tools and utensils for testing, receiving, filtration and refrigeration. Priority was given to those villages with a high concentration of smallholders and those distant and disconnected from large cities. • Milk cooling tanks and accessories provided to VDPAs. However, their management (milk collection, hygiene, delivery of milk) is under the direct responsibility of the traditional milk middlemen “Hallab/Pedlar/Colporteur” from the village communities, decided by the VDPAs. • The manager (Hallab/Pedlar/Colporteur) is a member of the cooperative board, though for this role, he/she is considered in his/her personal capacity in managing the milk collection and cooling centre, as a private business. The project prepared the necessary legalization of such ventures (between VDPAs and Pedlar) which was signed by all parties, in order to protect the rights of all those involved, with emphasis on safeguarding the interests of the small dairy holders such as: assured and timely payment; regular purchase of any quantity of milk is accepted by the Pedlars; apply the milk prices decided by the dairy stakeholders (MoA, VDPAs); involving the private sector (Pedlars/Colporteurs) in the organization and management of the milk collection centres, improving their chances of becoming self-supporting. • Establishment of the costs of the milk collection points, e.g. housing for milk cooling tanks, water supply, hygienic floors, walls, etc. have been met either through beneficiaries’ own contributions or Pedlars’ contributions. • Arranging general meetings with cooperatives, farmers and producers with official personnel and owners of the dairy processing plants and other stakeholders to discuss matters related to the sector. • Continuous follow-up with the cooperatives, advising them on how to improve their administrative, legal and financial conditions of wellbeing and to correct and upgrade these conditions. • Creation of the National Dairy Cooperatives Union by the beginning of 2014 to help in the development of the sector. • Regular monitoring of VDPAs and reporting, with the involvement of the cooperative department in Beqaa, of the following activities: formulate cooperatives’ proposals; prepare the necessary feasibility studies; undertake field inspection visits to cooperatives and milk collection centres; involve the cooperatives in all interventions of the FAO project; keep records of the cooperatives in order and up to date; encourage the cooperatives to be up to date in their legal documents; prepare forms and standard checklists to facilitate record-keeping and follow-up with cooperatives; monitor the milk cycle from the single small farmer and milk producer, to the milk collection centre and to the dairy

		<p>processing plant; observe the quantities of milk produced by each farmer and delivered to the milk collection centre; observe the milk refrigerated and stored at these centres, where they are sold, the names of the dairy plants and the prices; observe the number of dairy cows at each farm and their movement; take care of any issue that may improve the sector in general; and help farmers to understand and apply a teamwork attitude.</p> <ul style="list-style-type: none"> • Support with forage seeds for promoting fodder crops, to sustain the dairy subsector: 600 dairy producers supported with 115 tonnes of certified seeds (oats, ryegrass, vetch and alfalfa) for on-farm demonstration and utilization of fodder in dairy cow rations.
<p>2. Poor knowledge and technical skills of smallholder dairy farmers.</p>	<ul style="list-style-type: none"> • Most of the livestock farmers are smallholders with limited skills, unaware of the basic practices for improved farm management and milk hygiene. • Absence of or very weak linkage between the small producers and the extension service of the MoA (lack of funding, motivation and targeting). 	<ul style="list-style-type: none"> • Conducting of workshops and training sessions for more than 3 000 farmers and producers in parallel with project activities and delivery of equipment and supplies. • Training and demonstration have covered practical topics, generating a clear and significant impact on small livestock holder productivity, such as: improving milk hygiene and sanitary conditions, with good practices of milking procedures; feeding management, forage production and utilization; good practices of processing dairy products, farm management, milk handling, hygiene and basic milk processing at farm level; improvement of reproduction. • Production and distribution of 20 000 extension booklets, pamphlets or posters. • The project focused on a number of key progressive smallholders, particularly rural women, and active dairy communities (cooperatives) as resource people. They demonstrated the capacity to run their business effectively and independently, with potential for spill-over effects to other smallholders, thus facilitating the multiplier effect of the project's impact. This allowed for the strengthening of the sustainability and dissemination of technologies. • The project adopted the VDPAs as focal points for providing the training programme (distribution of invitations). • Regular monitoring and inspection of field visits to farms, dairy plants and collection centres. Problem solving and attendance to all urgent needs, especially after the large influx of Syrian refugees to the targeted areas.
<p>3. Very poor reproduction efficiency hindering cow replacement and increase.</p>	<ul style="list-style-type: none"> • Absence or very limited coverage of artificial insemination services. • Lack of skilled inseminators, high cost and poor efficiency of artificial insemination services. 	<ul style="list-style-type: none"> • Strengthening the artificial insemination services with VDPAs by training skilled inseminators and providing good quality of semen. • The key strategy adopted the VDPAs as focal point to provide artificial insemination services to the smallholders through the following: the project identified in each cooperative one or two young promising farmers/technicians capable of acquiring the artificial insemination technique who (80 people) underwent an advanced, intensive, artificial insemination training session (three weeks). • Twenty seven fresh graduates were provided with complete artificial insemination kits, working with VDPAs.
<p>4. Very poor raw milk quality standards, poor milk storage and transport.</p>	<ul style="list-style-type: none"> • Absence of cooling facilities at farm and village levels. • Poor milk handling and storage (old aluminum and plastic cans). • Poor milking practices (absence of teat dipping and disinfectant usage, hand milking). • Lack of training (poor management practices, barn hygiene). 	<ul style="list-style-type: none"> • Setting up 77 IPVMCCNs, with the establishment of milk cooling tanks equipped with all the necessary tools and utensils for testing, receiving, filtration and refrigeration. • Rehabilitation of ten insulated milk transportation trucks and leasing them to the cooperatives and milk collection centres. • Support to small dairy holders through the VDPAs for improving milk hygiene and sanitary conditions, with distribution of 487 milking machines, 4 250 food-grade steel stainless cans with filters, as a substitute for plastic non-hygienic jars, strip and tea cups iodine teat dipping solution, California Mastitis Test kits. • Giving extensive training sessions for dairy farmers on farm management and milk handling, with emphasis on hygiene and sanitary conditions.

<p>5. Health risk with home-processed dairy products.</p>	<ul style="list-style-type: none"> • Primitive methods and appliances to process milk in remote areas, with very poor quality standards. • Poor farmers lack assets. • Poor knowledge and technical skills in hygienic dairy processing. 	<ul style="list-style-type: none"> • Supporting 350 small dairy holders, especially women-headed households and those isolated from the milk collection facilities, with small- and medium-sized equipment for milk handling and processing at farm level, including a small stainless steel milk pasteurizer, stainless steel working table, stainless steel milk ladles, agitators, cheese knife, cheese molds, set of cloth filters and food-grade plastic buckets. • Training people on improving milk quality standards and proper techniques of cheese and Labneh manufacturing, to obtain healthier and safer dairy products.
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4.3 Project relevance

The project proved to be very relevant for responding to the urgent dairying needs of rural households. It addressed significant constraints in reviving a sector in crisis and improved the livelihoods of the participating farmers and processors, most of which belonged to the poorer strata of society. The project succeeded in creating farmers' associations. Improvements in milk quality and food safety issues were additional important issues that the project addressed. The project promoted fodder crops to sustain the feeding of dairy cattle. It also strengthened artificial insemination services to improve dairy cattle fertility. The project supported gender equality and women's empowerment in the dairy business, as it promoted sustainable economic growth and poverty reduction. The intermediate village milk collection and cooling centre network put in place by the project to strengthen the capacity of farmers were of relevance for supporting their business. A relevant peculiarity of the project was the inclusive approach of the milk dealers that were integrated into the system of VDPAs, thus making this collaborative platform a mechanism that does not exclude any potential actor from the milk business.

4.4 Project efficiency

The project management allowed for the smooth implementation of the activities and the success of the project. Without the continuous close interaction between the project staff and the stakeholders, the concrete progress achieved in the field would not have been possible. Reports and files were produced providing detailed information on the VDPAs and milk collection centres. All changes to project implementation, such as the addition of new geographical areas (Mount Lebanon, areas bordering Syria, hosting communities) were undertaken under the official request of MoA, always remaining aligned with the project scope and objectives.

The procurement of equipment was carried out early enough to ensure the delivery and the project execution in a timely manner. The strategic support of the project also included: the in-kind support of small equipment (milking machine, stainless steel jars, fodder seeds and dairy processing units) that were distributed among the poor farmers; and the in-kind support of larger items (milk conservation cooling tanks for milk centres, lab equipment for milk analysis) that was provided to farmers grouped in the VDPAs.

4.5 Project effectiveness

The project was successful in establishing VDPAs as a powerful body to protect the interests of its members (mainly poor dairy farmers). It empowered farmers to negotiate through the VDPAs for better prices for their milk. Improvements in milk quality were achieved through the capacity building workshops that covered important topics related to milk processing, hygiene and feed management, and the provision of relevant equipment. The project also empowered 350 women engaged in dairy processing.

The stabilization of milk production (in terms of both quality and quantity) was achieved through improved hygiene standards, the distribution of production equipment and training sessions. In addition, the stabilization of production also made possible the formalization of the business, from the farm to the processing plant. The value chain has been enhanced, both horizontally and vertically, and is regulated by formal contracts between the VDPAs and the private processing plants.

By establishing more formalized and transparent business transactions, and by empowering the farmers to negotiate milk prices with processing factories, the farmers are now better protected by the price determination mechanism that the project has put in place. The price of milk is discussed within a committee, headed by the Minister of Industry and formed by representatives of the following stakeholders: one representative of the National Dairy Union board, one representative of the dairy

industry board, one representative of the feed producers, one representative of the MoA, one representative of the MoET and one representative of the MoI.

4.6 Project sustainability

The project has good potential for sustainability since the farmers gained substantial benefits, during the implementation of the activities. The involvement of the private sector (Hallab/Pedlar/Colporteur) in the organization and management of the milk collection centres improved their chances of becoming self-supporting and sustainable. The provision of extension and other support services to the livestock farmers, undertaken by the private dairies and processing/marketing firms to the members of the cooperatives, together with the lower ranks of the milk value chains, would render these services more sustainable. The main activities that could be maintained are those where the full recovery of costs and market prices prevailed for the provision of services. The following lines of intervention will most likely be sustained: a) artificial insemination initiatives; and b) support to women-headed households to engage in processing in the farm or home, so that they can gain added value to their raw milk and continue improving their income. Moreover, the delivery of milk to the collection centres – respecting milk hygiene standards – is likely to continue as farmers are now getting a better price for chilled milk with improved quality.

4.7 Constraints and lessons learned

The variety of stakeholders involved in the project (i.e. dairy farmers, milk dealers, dairy processing plants, milk smugglers and consumers) sometimes made coordination difficult, as conflicting/opposing interests emerged during the discussions. The areas of North Lebanon, Akkar, Baalbeck and El Hermel are mainly characterized by extreme poverty and most of the farmers in these areas are in urgent need of support. Given the budget available, the project had to apply very strict criteria for the selection of the direct beneficiaries. The project team faced a number of constraints that ultimately enabled the useful development of a concrete problem-solving attitude and lessons learned. The following are the major constraints and lessons learned that emerged during the implementation across both phases.

Constraints	
1. Antagonistic stance towards the project.	Due to its inclusive nature, based on sharing and collaborating activities aimed at strengthening the milk value chain, the project met some resistance from beneficiaries. During Phase 2, in the extended implementation areas, the project was seen as a source of problems by some parties. The milk dealers were afraid that the project would steal their milk from them and undermine their livelihood. The milk processing plants thought that the project would harm them by increasing the milk prices, strengthening the dairy cooperatives. Many expected that the establishment of a farmers' cooperative mechanism would fail, as had occurred in previous experiences. Few parties believed that the project would be able to improve the milk quality and make the farmers cooperate and work in groups. The project team spent significant time to convince all stakeholders to participate in the project activities and to establish trusting relationships.
2. The large number of needy and poor farmers.	FAO knew from its field investigations, undertaken during both project phases, that there were more than 5 000 poor and needy farmers and producers that wished to benefit from the project. Due to the high number of potential beneficiaries that the project could not cover, strict selection criteria were adopted by the project to reduce the expectations, so that the limited budget available could fairly cover the neediest people. The project could not provide support to many poor, as desired, due to the lack of funds.
3. Lack of	Despite the institutional commitment of the MoA, the employees involved in the

<p>effectiveness and efficiency of the MoA employees and shortage of FAO team personnel.</p>	<p>project activities did not participate as and when requested to work with project beneficiaries. In addition, they wished to be remunerated, but the project could not always afford payments.</p> <p>Taking into consideration the vast geographical coverage of the project (more than 80 percent of Lebanon), the number of farmers involved, and the volume of inputs and follow-up necessary to achieve the objectives, the project acknowledged that the timeframe allocated was too tight.</p> <p>In addition, all the activities were undertaken by a small project team that worked hard and lengthy hours to allow the project to reach a state of stability and sustainability. To this end, the team had to continuously follow up, control and monitor the achievements of the project (i.e. farmers’ cooperatives and the primary milk collection and cooling centres; all operations related to the milk transportation trucks, training, milk sampling and testing and others that constantly required on-site visits).</p>
<p>4. The fluctuating price of milk.</p>	<p>This is a constraint that will persist as long as conflicts of interest continue among the concerned parties. The serious fluctuations of the milk prices have been reflected in the farmers’ wellbeing and income. Most of them sold some of their cows to pay for the concentrates and hay to feed the remaining cows. The situation reached very serious levels of deterioration and many farmers had to close their farms and look for other sources of income. The farmers continued to come to the FAO office in Zahle on a daily basis to complain about the dairy situation. Several actions have been taken and many decisions were enforced in Lebanon in late 2014 such as the stabilized milk prices.</p>
<p>5. Restriction on movement due to security conditions.</p>	<p>The current security conditions in Lebanon, resulting from the situation in Syria, forced the United Nations security authorities to restrict the movement of the project team to a minimum. Furthermore, there are many areas that cannot be accessed such as Al Qaa, Masharee Al Qaa, Akkar, Wadi Khaled, etc. These unfavourable conditions impacted the activities and efficiency of the work of the cooperatives, milk collection centres and the farmers located in these areas.</p>
<p>6. High influx of Syrian refugees.</p>	<p>An additional constraint was the high influx of Syrian refugees in the border villages of Akkar, Baalbeck-Hermel and Minniyeh–Donniyyeh, most of which were covered by the project interventions. The presence of such large numbers of refugees affected the activities of the project, especially because the increased population magnified the demand of dairy products.</p>
<p>7. Failure of some beneficiaries to abide by the FAO team’s instructions.</p>	<p>In general, most project beneficiaries worked according to expectations of the project. However, some did not follow the instructions provided by the project and the rules set by the team for achieving a good performance. By visiting the milk collection centres and the dairy processing plants, and though the regular inspection of the milk transportation trucks and the milk analysis undertaken on a regular basis, the project team identified that some farmers, cooperatives or managers did not implement the good operating practices that they were taught. In these cases, the team had to withdraw the equipment or the vehicles and reallocate them to places or groups that made proper use of the assets.</p>

<p style="text-align: center;">Lessons learned</p>	
<p>1. Changes (i.e. in behaviour) require time.</p>	<p>The project team began the activities with enthusiasm, confidence, and honest and sincere intentions. However, limited attention was paid to rumours and misunderstandings with the concerned parties regarding the intentions of the project. Most of the individuals who opposed the project in its early stages were</p>

	<p>driven by a lack of knowledge of the project’s actual intentions. Significant time and effort was put into meetings and explanations in order to change their negative perceptions. These efforts ultimately helped convince these individuals that the project was working for the benefit of all parties and for the good of the dairy sector as a whole. Many important figures who initially refused to receive visits from the project team later cooperated and coordinated their activities by visiting the project office at regular intervals. The project demonstrated that changes in culture and habits require time and thorough understanding, especially when the work has to be undertaken within fragile social contexts. The team learned that communication is the basis for promoting lasting changes and creating a climate of trust, and that this requires time. Listening to the concerns and fears of beneficiaries is crucial, as well as constant communication on the intentions of the project.</p>
2. Proactive personnel management.	<p>Dealing with governmental and official organizations requires tact, diplomacy and persistence while keeping an open mind to any feedback, as opinions must be respected. The efficiency of the administrative routines and institutional structure is very weak in the country. The project witnessed that verbal commitments are not always followed in practice, and do not necessarily guarantee that matters will be settled. Exerting constant – yet constructive and positive – pressure on the person or employee to fulfill his/her commitment, especially through incentives and rewards, is a good way to achieve results. Backing from supervisors or high-ranking officials and daily follow-up can also be necessary and constructive in order to manage personnel and collaborators to all effectively work towards the same goal.</p>
3. Work in transparency.	<p>The project team applied very transparent selection criteria for the provision of inputs to beneficiaries. However, the criteria are subject to the interpretation of the individuals and many people claimed that the project was biased and not fair. The priority schedule adopted was very clear but the boundary between the eligible and non-eligible beneficiaries was vague and confusing at times. The team learned that clear communication, coherent application of strict criteria/priorities and transparency are fundamental in all project activities.</p>
4. Coherence towards the resolution of conflicts.	<p>One of the most difficult tasks that the project team had to perform was the role of “peacekeeper” across the dairy chain, among all parties. The strategy of the project was to develop the sector as a whole. To achieve this, there was a need to combine the efforts of multiple stakeholders working in this field. The project prioritized support to the weakest ring of the dairy chain, especially the small and poor dairy holders. The project learned that, by remaining coherent with the strategy of intervention, facilitating the resolution of conflicts and being fair in giving the right to its owner, it was possible to prevent attempts to work against the intervention that could jeopardize the plan, strategy and goals of the project.</p>
5. Time allocation.	<p>Most of the farmers were not used to or acquainted with the cooperative system and working as a team. The project introduced new experiences and the farmers needed time to become confident, and required extensive advice. The management of the milk collection centres and milk transportation trucks also needs to be followed closely, as it can easily become a dangerous source of dispute and corruption, if not handled transparently and rationally. These kinds of interventions require more time in order to foster cultural change. The project team learned that when a project is thought to introduce changes in the habits of farmers, and in this case of the whole dairy chain, there is need to allocate proper timelines that go beyond the schedule of activities.</p>
6. Monitoring the	<p>The lack of constant monitoring of the socio-economic impact of the project was</p>

socio-economic impact of the project.	a weakness. The main objective was to improve the living standards of the small dairy farmers and producers by increasing their incomes. The farmers were producing larger quantities of improved quality milk but were obliged to sell it at a price that was lower than the cost of production. An alert was issued and the FAO team, with the support of the MoA, organized emergency meetings. After intensive surveys, meetings and brainstorming, an agreement was reached between the dairy processing plant owners and the dairy cooperatives to regularly review the milk price, according to the cost of milk production.
7. Professional relationships with stakeholders.	The kindness, availability and dedication of the project team allowed for the establishment of smooth relationships with dairy stakeholders. This was much appreciated by the beneficiaries, and facilitated the activities and the administration of the project. However, some farmers or stakeholders had the tendency to take advantage of the courtesy of the project team and did not respect the deadlines or did not follow the directions and instructions provided by the team. The team experienced that, to avoid any misunderstanding with the counterpart of the project, it is important to maintain kind, professional relationships that allow the activities to be implemented, respecting commitments made on both sides.
8. Full control of the project.	Full control of the activities, with regular monitoring and follow-up, is critical for the continuity and sustainability of the intervention. To ensure this, it is necessary to rely on the project's own human resources. Most of the interventions were accomplished successfully thanks to the monitoring carried out by the project team.
9. Dairy cooperatives as routes for the project interventions and connection with the farmers.	The cooperatives are business companies that are established for the sake of profit. Each member of the cooperative is a partner in the company with rights and duties. The involvement and participation of each member is essential for the continuity and sustainability of these cooperatives. Transparent accounts and financial records should be available and updated daily, for the members that have shares in the cooperative. Extensive efforts should be exerted to change the individualistic mentality and convince farmers and members of the cooperatives of the feasibility and importance of cooperatives and team work. Unfortunately, training alone is not enough to create this change and an integrated sociological and psychological programme should be implemented.
10. Improving milk quality.	Improving the quality of milk produced at the farm level, and maintaining its quality through proper cooling and use of hygienic utensils and facilities for transportation, are key factors for smallholders to sustain good milk prices. Imposing better prices on the dairy processing plants without improving the quality of milk will never bestow the desired effect in the long term. A win-win agreement should be reached order to maintain sustainability.

4.8 Project visibility

The project had the highest visibility in the MoA and in rural areas. The most important visibility events during Phase 2 are highlighted below:

- Press conference at the MoA on 29 March 2013, headed by the Minister, following the presentation of the primary field survey of the livestock farmers in North Lebanon, presented by the Project Manager (Dr Chedly Kayouli).
- Visit of French Embassy delegates to the Beqaa on 10 April 2013 to understand the project strategy and policy for upgrading the dairy subsector in Lebanon in a sustainable way.

- Mission of the United Nations Office for the Coordination of Humanitarian Affairs Staff to FAO–LRF dairy project sites (13–14 November 2013) to observe on-site achievements, especially the impact on the lives and livelihoods of small-scale farmers.
- Meeting on project achievements, milk sector and milk price (10 December 2013) headed by three Ministers: Agriculture, Economy and Trade, and Industry. Objective: Presentation of project’s achievements by the Project Manager (Dr Chedly Kayouli) and to discuss issues and problems related to the sector. Recommendation: looking for potential donors for funding and support to expand interventions of the FAO–LRF dairy project to include all of Lebanon.
- Success story on “Georgette from Akkar: identification and development of success stories” from selected FAO interventions in the Near East and North Africa. The strategic objective was to “Help eliminate hunger, food insecurity and malnutrition”. The selected success story was published on the FAO Web site: <http://www.fao.org/archive/from-the-field/detail/en/c/214507/>.
- FAO is striving to provide the necessary visibility to the LRF’s financial contribution. In all official communications, reports and information materials issued at national, regional and headquarter level, the LRF’s support is fully acknowledged. For instance, an illustrated story was published on the FAO emergency portal and on the Flickr account (<http://www.fao.org/emergencies/resources/photos/photo-detail/en/c/214623/>).
- Furthermore, FAO has been providing regular updates on the progress of project activities in the relevant information bulletins at the national and regional levels.
- Submission of the report of the FAO–LRF-26 dairy project to “The First Arab States Regional South-South Development Expo”.
- LRF’s funding role in the project was also acknowledged at all meetings with communities, national and local authorities.
- LRF branding is displayed on all visibility materials produced under this grant (e.g. banners), as well as in all events and trainings.
- FAO is striving to provide the necessary visibility to the LRF’s financial contribution. In all official communications, reports and information materials issued at the national, regional and headquarter level, the LRF’s support is fully acknowledged.
- An illustrated project story was published on the Window on the UN AL - MUSTAQBAL - Wednesday 17 September 2014 on “Milk for health and wealth” on the Flickr account (<http://www.fao.org/in-action/milk-for-health-and-wealth-supporting-small-dairy-producer-communities-in-lebanon/en/>).
- Distribution ceremony headed by MoA on 4 April 2013 in Zahle: distribution of milk cans and filters in Beqaa for the project beneficiaries.
- Inaugural ceremony sponsored by MoA on 30 June 2013 for the launching of the rural village dairy processing centre in Brital and distribution ceremony of dairy equipment, supporting the sheep and goat farmers in Tarrayya.
- Distribution ceremony on 24 August 2013 in Batroun for the distribution of dairy equipment: milk cans, milk filters, mini and medium-size dairy processing units and milking machines for project beneficiaries in North Lebanon (Donniyyeh and Mennieh, Batroun, Zgharta, Koura, Bcherri and Tripoli).
- Inaugural ceremony sponsored by MoA on 16 November 2013 for the launching of the rural village dairy processing centre in Bazzalia.
- Distribution ceremony sponsored by MoA on 28 December 2013 in Zahlé for distribution of artificial insemination equipment and certificates to the outstanding inseminators.

4.9 Awards

1. The African–Asian Rural Development Organization (AARDO) conferred an award to the FAO–LRF Project Manager (Dr Chedly Kayouli) during the 50th anniversary celebration of AARDO – 2012 for his outstanding contribution in the field of agriculture and rural development:

www.aardo.org/aardohomepage/pdf/annual2012.pdf

2. Recognition from FAO Assistant Director General (Mr Laurent Thomas)

De: Thomas, Laurent (TCED) <Laurent.Thomas@fao.org>

À: "chedli kayouli" <chedlikayouli@yahoo.fr>, "Kayouli, Chedly (FAOLB)" <Chedly.Kayouli@fao.org>

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<Daniele.Donati@fao.org>, "Chakkalakal, Werner (TCES)" <Werner.Chakkalakal@fao.org>, "MattaSaade,

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Dear Chedly,

I would like to thank you for your commitment and hard work to FAO's livestock programme in Lebanon as well as for your support in making my mission to the country a success. The extraordinary work you have done in the animal and dairy production sector has received the recognition of FAO, UN partners and most importantly the Ministry of Agriculture and our beneficiaries. Your contribution to help meet the needs of poor farmers in the country is highly valued and I personally would like to thank you for your continued dedication and commitment to your work. I particularly appreciated the field visits we had and the discussions with farmers on their needs and challenges to safeguard their agriculture livelihoods.

I wish you continued success in your work which has benefited so many farming communities across the country.

Best regards,

Laurent Thomas

5. CONCLUSION

The project team is confident that the project interventions were very useful and have produced the intended impact on the general wellbeing of the farmers and the quality and hygienic standards of milk and dairy products. These interventions helped the overall improvement in milk prices and increased income generation of the farmers (e.g. milking machines and milk jars; milk cooling tanks and accessories at the milk collection centres; milk transportation trucks; dairy processing units; programmes supported by the MoA and many training sessions and printed material, etc.).

The milk collection, cooling and transportation provided farmers and dairy cooperatives more freedom to manoeuvre and negotiate better prices. The improved quality milk produced as a result of the project interventions gets better prices, and is healthier and safer for the consumers. The small- and medium-size home dairy processing equipment has provided farmers with added value to their milk. For example, instead of selling raw milk at LL 1 000, they sell Labneh, yogurt and cheeses and get more than LL 1 600/kg of milk. The women granted with small dairies have already doubled their volume of production and opened new markets. These women transform their milk into dairy products and sell them to the neighbours in the village or to those that reside in the cities. They also produce long shelf-life

products like Kishk that can be stored without refrigeration. It is worth mentioning that most, if not all, of the people working in these units are women who otherwise would not have any other source of income.

It is urgent to expand the project activities to cover more areas and to include more farmers. A project proposal for potential donors has been prepared aiming at:

- Scaling up the FAO–LRF dairy project’s activities to the whole of Lebanon, to reach a higher number of poor livestock farmers, with emphasis on improving the quality and hygienic standards of milk and dairy products.
- Bringing urgent support to refugee hosting communities through increasing the supply of milk and dairy products and reducing food insecurity in the communities, while improving income generation for vulnerable Lebanese.

ANNEXES

Annex 1: Success story

LRF–FAO dairy project saved assets and sustained livelihoods of smallholders in Lebanon: the story of Sawsan Faraj on home dairy processing “Rafidouna”



1. Introduction

Many poor farmers in remote areas lack facilities for milk marketing, or are forced to sell their milk at a very low price. Many of these farmers (mostly women) rely on processing their milk into ‘Laban’ and ‘Labneh’ and sell them to neighbours and relatives in the village or the city. They also use these products for household consumption. Other small producers buy the milk from the neighbours and practice small-scale dairy processing. By doing so, they gain added value for their milk and secure a reasonable source of income to support their poor families. Unfortunately, most of them depend on old, non-sanitary and non-hygienic tools and utensils. Such unreliable practices and low-quality appliances for processing milk lead to very poor standards of dairy products and harbour many health and quality risks.

2. Case study

Sawsan Faraj is a woman of about 55 from the Rafid village of Rachayya. She wakes up early in the morning every day to wait for the milk man. She does not have her own cows, but is very well known for producing the best quality Laban, Labneh and cheese. All her neighbours and relatives in the village rely on her for their daily supply of dairy products. In addition, some relatives and friends in Beirut buy their weekly supply when they go to the village on the weekend. Sawsan’s work place and selling outlet was her small kitchen, in a narrow alley in her village where she uses aluminum and copper milk pots, and very traditional manufacturing procedures. Her volume of production ranges between about 50 kg of milk in the winter, to about 125 kg in the summer.

As Mrs Faraj was a member of the Kherbet Rouha Dairy Cooperative, the project team has visited her working facility and discussed with her ways and methods to improve her standards of production and expand her volume of work. She has the potential to upgrade her skills and knowledge, as she is very smart and attentive. Furthermore, her business (in terms of market demand) is able to accommodate a much higher production volume.

The first step taken was to give her some direction and recommendations to improve her production with what was already available at her work place. The second step was to involve her, together with other dairy producers, in intensive workshops and training sessions on good manufacturing practices for hygienic and healthy dairy production. During the same period, participants were trained on the processing of different local and imported types of yogurts and cheeses. A major part of the training emphasized the importance of sanitary and hygienic cleaning and disinfection of utensils and surfaces. The proper methods of storage and packaging and refrigeration were also demonstrated.

Mrs Faraj proved to be a very good learner and obtained a good performance certificate, signed by the MoA and the FAO Representative in Lebanon. The FAO–LRF dairy project provided her with a 250 kg pasteurization pot with stainless steel, working tables, Labneh bag hanger and cheese press. The project team directed and supervised the required renovation and rehabilitation in her work place, as well as supervised the primary experimental operation of the equipment.

3. Rewards and impact

Sawsan Faraj continued working in her old place for another year, and her production volume and market demand increased significantly. Her increased income and the growing demand for her good quality and hygienic dairy products allowed her to rent a relatively big place on the main road where the traffic is almost continuous. She installed a new walk-in cooler for the dairy products, along with several display and storage refrigerators. Her daily production has increased to almost 500 kg in the summer. The project team still pays regular visits to her new working and selling outlet, and attends to all problems that she may face. Many other women (350) like Mrs Faraj are now operating very successful small-scale dairy processing businesses through the help and encouragement of the FAO–LRF dairy project.

Annex 2: Status of VDPAs created and supported by FAO-LRF dairy project (LRF-21 and LRF-26)

Area	Cooperative location	# of villages covered	# of farmers covered	Official registration	Cooperative President and phone #	Evaluation	Remarks
Central Bekaa	AL Nassriye	15	250	(156/1 T) 23/9/2010	Abbas Tarchichi 03 – 233 476	Active	
	Terbul	7	94	(219/1 T) 23/9/2010	FadaaSassine 03 – 648 362	Idle	Cancelled
	Zahleh	6	150	(161/1 T) 23/9/2010	Kamil Skaff 03 – 699 100	Moderatly active	
	Bar Elias	7	100	Existing since IFAD	Saiid AL Mayes 03 – 802 366	Idle	Not working
	Forage cultivation and marketing	–	80	(139/1 T) 25/10/2012	Salim Ghossein 03 – 277 720	Active	
	KABB Elias	6	35	(99/1 T) 02/05/2013	Mahmoud Kasem Mahmoud	Idle	Not working
West Bekaa	Ghazza	10	150	(158/1 T) 23/9/2010	Ibrahim Abdel Hadi 70 – 045 835	Moderatly active	
	KherbetKanafar	8	50	(8/1 T) 03/02/2011	Hassan Bjeiji 03 – 986 651	Active	
	AL Marej	12	200	(262/1 T) 30/12/2010	MessaabKanaan 03 – 406 204	Active	
	AL Sawiri	5	50	–	DiabJanbeyn 03 – 277 612	Active	
	Hawsh AL Harimi	4	30	(234/1 T) 13/12/2012	Mahmoud Sobhi AL Khoder	Idle	Not working
Rashaya	Kfarmechki	14	80	(173/1 T) 23/9/2010	Rola AL Farekh 03 – 984 356	Active	
	KherbetRoha	10	220	(171/1 T) 4/11/2010	Ali AL Kerdi 03 – 833 148	Active	
	Ayta L Fakhar – Ain Ariche	5	20	(235/2 T) 2003	Hiyam Al Gharib 03 – 667 569	Active	
	NejmetSobehMhaydse	4	35	(200/2 T) 9/12/1998	Marwan Charrouf 08 – 561154	Active	
Baalbeck–North Bekaa	Baalbeck	16	100	(189/1 T) 7/10/2010	Omar AL Zokra 03 – 412 852	Active	
	Masharih ALKaa	10	200	(228/1 T) 18/11/2010	Mohamad Kronbe 70 – 126 139	Active	
	Shlifa	5	26	(170/1 T) 23/9/2010	Samir Saklawi 03 – 345 831	Active	
	AL Bazzaliye	17	100	(190/1 T) 23/9/2010	Bilal Rabah 03 – 771 655	Active	
	Hosh AL Nabi	10	50	(221/1 T) 4/11/2010	Hussein Karssifi 03 – 546 849	Idle	Only pedlar working
	Rasem AL Hadath	11	80	(191/1 T) 23/9/2010	Ahmad AL Arab 76 – 49 77 54	Active	
	JouroudTaraya – Halibouna	20	150	(113/1 T) 19/7/2012	FatmeHamiye 70 – 912 164	Active	
	Britel – AL Rida	8	100	(90/1 T) 14/6/2012	Abbas Mazloum 03 – 948 319	Active	
	Deir L Ahmar – AL Ikhwa	4	30	(57/1 T)		Moderately active	

Area	Cooperative location	# of villages covered	# of farmers covered	Official registration	Cooperative President and phone #	Evaluation	Remarks
Hermel	JouroudHermel	16	66	(159/1 T) 23/9/2010	Hassan Mortada 70 – 107 801	Active	
	Hosh Sayed Ali	15	150	(157/1 T) 23/9/2010	Hassan Bazzal 03 – 730 540	Active	
	Hermel	18	75	(160/1 T) 23/9/2010	ZiadAmhaz 03 – 868 414	Idle	Familial conflict
Akkar	Tal AbasGharbi	16	119	(21/2 T) 6/3/2003	WalidMetri 03 – 64 20 30	Active	
	AL Jouma	17	130	(55/1 T) 31/3/2011	Pascal Kafrouni 70 – 225 341	Active	
	AL Kobayat	30	400	(183/3 T) 28/2/2012	Joseph Daher 70 – 12 53 62	Active	
	AL Dreib	35	250	1603/1 T – 23/2/2012	Joseph Abdalah 03 – 30 54 94	Active	
	Halba	24	100	(89/2 T) 27/11/2011	Ibrahim Al Hasan 03 – 371729	Active	
	HakerDaher – AL abde	15	300	(117/2 N) 15/9/2014	Bassam Ajaj 71 – 273 663	Active	
Total farmers covered by cooperatives			3 970				

Annex 3a:

منظمة الأغذية والزراعة
للأمم المتحدة

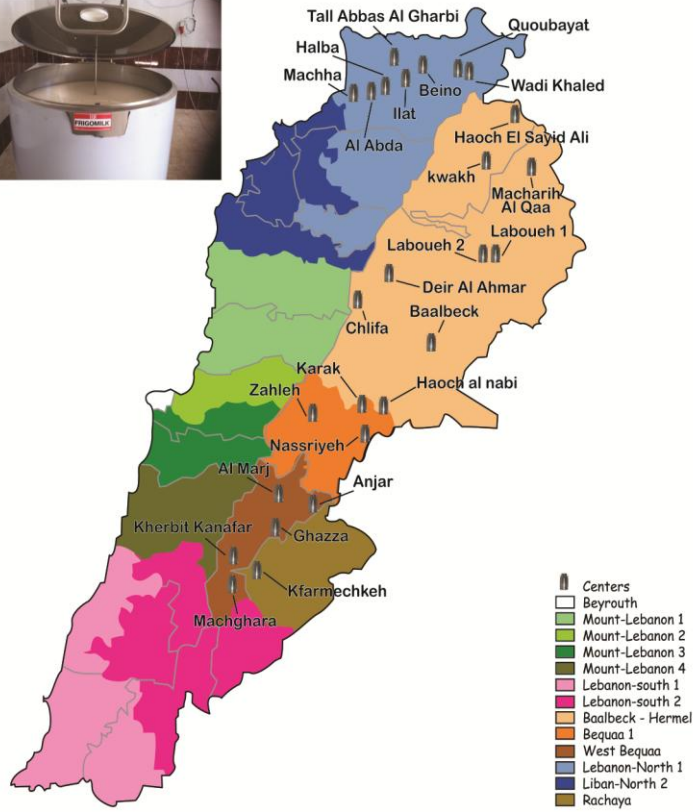


الجمهورية اللبنانية
وزارة الزراعة



Recovery and Rehabilitation of dairy sector in Bekaa valley and Hermel-Akkar uplands
LRF21(OSRO/LEB/901/UNG)

Primary village milk collection and cooling centers networks:



Annex 3b: Status of constitution of intermediate primary village milk collection and cooling centres network (IPVMCCN) for milk marketing facilities, established and supported by the FAO–LRF dairy project (LRF-21 and LRF-26)

Caza	Location	Manager	# of villages covered	# of farmers beneficiaries/centres	Capacity of milk collected and refrigerated (tonne/day)	Evaluation and remarks
Central Bekaa	Al Nassriye	Hussein Tarshishi (03817367)	15	250	15	Active
	Zahle - Karak	Radwan Salhab (03108116)	10	110	12	Active
	Dalhamiye	Nawwar Ibrahim (03268620)	7	90	5	Active
Hermel	Hosh sayed ali	Hassan Bazal (03730540)	15	150	6	Active
	Al Kwakh	Hassan El Hekk (03468471)	4	35	0.55	Active (related to Hosh Essayed Ali)
	Ayn El Bayda	Hassan Abdallah (70112795)	16	66	3.55	Active
North Bekaa – Baalbeck	Labwe 1	Bilal Rabah (03771655)	10	100	5	Active
	Labwe 2	Abbas Abdo (70031917)	11	80	3	Active
	Bazaliya	Ali Bazal (03170602)	11	100	3	Active
	Rasem El Hadath - Chaat	Mohamad Chamas (03396690)	12	75	3	Active
	Baalbeck	Omar zokra (03412852)	16	100	4.5	Active
	Masharih Al Kaa	Mohamad Kromba (70126139)	10	200	6	Active
	Hosh Al Nabi	Khaled Tannousi (03985987)	10	105	1.5	Active (Pedlar related to Nassrya Cooperative)
Baalbeck	Bednayel	Khalil Moussa Haydar (03295251)	3	10	0.55	Active
	Jouroud Tarayya	Fatme Hamiyeh (70912164)	5	150	0	Transferred to Qaa (but cooperative is active with marketing raw milk)
Rashaya	Kafarmechki	Rola El Ferekh (03984356)	14	80	2	Active
West Bekaa	Kherbit Kanafar	Bassam Hajjar (03732632)	8	40	3	Active
West Bekaa	Mashghara	Hassan Bjeiji (03986651)	8	50	4	Active
	Anjar	Sarkis Kohilyan (70653047)	4	15	0.55	Active
	Al Marej 1	Abed El Hamid Abbas (03898309)	5	35	0.55	Active
	Al Marej 2	Khoder Askar (03844792)	12	200	7	Active
	Al Sawiri	Diab Janbein (03277612)	5	50	3.5	Active
	Ghazza	Ibrahim Abed El Hadi (70045835)	10	150	15	Active
Akkar	Halba	Haji Baker Naiim (03436392)	24	100	4	Active (distributed in 5 centres) with milk processing

Caza	Location	Manager	# of villages covered	# of farmers beneficiaries/centres	Capacity of milk collected and refrigerated (tonne/day)	Evaluation and remarks
	Haker Daher	AL Abde – Bassam Ajaj (71273663)	15	300	3	
	Beino – Al Jouma	Pascal Kafrouni (70225341)	17	130	5	Active (distributed in 3 centres)
	Al Aboudiye	Merheb EL Ahmad	4	30	0.55	
	Al Kobayyat	Joseph Daher (70125362)	30	400	10	Active (distributed in 15 centres)
	Al Dreib	Joseph Abdallah (03305494)	35	250	15	Active (distributed in 25 centres)
Zgharta	Daraya	Toni Alam (03453894)	4	15	0.55	Active
Donniyeh	Karsita	Ali Issa (03085597)	8	30	0.55	Idle
	Karsita	Bandar Agha (03931643)	10	20	0.55	Active (dairy processing)
	Al Sfire	Maha El Yakhani (03834029)	10	18	0.55	Active (dairy processing)
Grand total				3 534	144 tonnes	77 centres

Note: The amount of milk collected and number of farmers is very dynamic, changing from day to day.

Annex 3c: Distribution of dairy equipment to the milk collection and cooling centres network established and supported by the FAO-LRF dairy project (LRF-21 and LRF-26)

Caza	Location	Contacts (cooperatives)	Project inputs						
			Cooling tanks (2 000 litre)	Cooling tanks (1 000 litre)	Cooling tanks (550 litre)	Generator	Milk pump	Reception tank	Lab and Ekomilk
Central Bekaa	Al Nasriye	Hussein Tarshishi (03817367)	4	0	0	30 KVA	2	2	1
	Zahleh - Karak	Radwan Salhab (03108116)	0	1	1	0	0	0	1
	Dalhamiye	Nawwar Ibrahim (03268620), Camille Skeif (03699100)	0	3	0	0	1	1	1
Hermel	Hosh sayed ali	Hassan Bazzal (03730540)	2	2	0	20 KVA – 11 KVA	1	1	1
	Al Kwakh	Hassan El Hekk (03468471)	0	0	1	7.5 KVA	0	0	1
	Ayn el Bayda/Jroud Hermel	Hassan Abdallah (70112795)	1	1	1	11 KVA	1	1	0
Baalbek North Bekaa	Al Labwe 2	Bilal Rabah (03771655)	1	0	1	15 KVA	1	1	1
	Al Labwe 1	Abbas Abdo (70031917)	0	2	0	11 KVA	1	1	1
	Al Bazaliya	Ali Bazal (03170602)	0	1	0	0	1	1	1
	Rasem Al Hadath	Mohamad Chamas (03396690)	0	1	0	0	0	0	0
	Baalbeck	Omar AL Zokra (03412852)	1	1	0	15 KVA	1	1	1
	Shlifa	Samir Seklawi (03345831)	0	0	0	7.5 KVA	0	0	1
	Masharih Al Kaa	Mohamad Kromba (70126139)	1	2	0	30 KVA	1	1	1
	Hosh Al Nabi	Khaled Tannousi (03985987)	0	0	1	11 KVA	0	0	1
	Bednayel	Khalil Moussa Haydar (03295251)	0	0	1	0	0	0	0
Rashaya	Jouroud Tarayya	Fatmeh Hamiye (70912164) (transferred to Qaa)	0	1	0	0	1	1	1
West Bekaa	Kafarmechki	Rola El Ferekh (03984356)	0	0	3	15 KVA	1	1	1
	Kherbit Kanafar	Bassam Hajjar (03732632)	0	0	1	0	1	1	1
	Mashghara	Hassan Bjeiji (03986651)	0	1	2	22 KVA	2	1	1
	Anjar	Sarkis Kohilyan (70653047)	0	0	1	7.5 KVA	0	0	0
	Al Marej 1	Abed El Hamid Abbas (03898309)	0	0	1	7.5 KVA	0	1	0
	Al Marej 2	Khoder Askar (03844792)	1	1	1	20 KVA	1	1	1
	Al Sawiri	Diab Janbein (03277612)	1	0	0	0	1	1	1
Akkar	Ghazza	Ibrahim Abed El Hadi (70045835)	2	0	2	7.5 KVA	1	1	1
	Misheha	Akram Shaaban	0	0	1	7.5 KVA	0	1	1
	Halba	Haj Baker Naiim (03436392) (main contact)	1	0	1	11 KVA 7.5 KVA	1	1	1
Ibrahim Hassan (transferred to Kobayat Cooperative)		0	0	0	0	0	0	0	

Caza	Location	Contacts (cooperatives)	Project inputs						
			Cooling tanks (2 000 litre)	Cooling tanks (1 000 litre)	Cooling tanks (550 litre)	Generator	Milk pump	Reception tank	Lab and Ekomilk
	Haker L Daher – Al Abde	Bassam Ajaj (71273663)	0	2	0	0	1	0	0
Akkar	Beino	Pascal Kafrouni (70225341) (main contact)	0	2	0	11 KVA	1	1	1
	Al Korneh	Nasser Osman	0	1	0	0	0	1	0
	ILat	Hanna Hanna	0	0	1	7.5 KVA	0	0	1
	Al Aboudiyeh	Merheb El Ahmad	0	0	1	7.5 KVA	0	0	0
	Tal Abbas	Walid Metri (03642030)	0	0	0	0	0	1	1
	Wadi Khaled	Ahmad El Menfi	0	0	2	0	0	0	0
		Hossam El Asaad Hossam	0	2	0	0	1	1	1
		Salem Salem	0	0	1	0	0	0	1
	Al Kobayyat	Joseph Daher (70125362) (main contact)	1	1	0	11 KVA	1	1	1
		Elie Abboud	0	0	1	0	0	0	0
	Remah	Joseph Abdallah (03305494) (main contact)	0	0	1	7.5 KVA	0	0	0
Kawashra	Mohamad Khoder	0	1	0	0	1	1	1	
Zgharta	Daraya	Toni Alam (03453894)	0	0	1	0	0	0	0
Donnieh	Karsita	Ali Issa (03085597)	0	0	1	0	1	1	1
	Karsita	Bandar Agha (03931643)	0	0	1	0	1	1	1
	Al Sfire	Maha El Yakhani (03834029)	0	0	1	0	1	1	1

Note: The project worked with 77 milk collections centres. Most of the cooperatives procured their own tanks to increase the centres created by the project or to establish new ones. In Akkar, the dairy cooperative of Dreib established 25 centres. Most of the centres are small and medium distributed in villages close to dairy producers. The role of the project was mainly related to training on milk hygiene. Also, milk collection centres benefited from milk truck transportation.

Annex 4: Distribution of MoA milk transportation trucks with dairy cooperatives (October 2014)

Truck	Truck type	Truck plate number	Truck serial number	Dairy cooperatives using trucks	Contact person	Number of dairy beneficiaries	Total quantity of milk handled until October 2014 (tonnes)
1	Scania	M 100137	XLET4X20004440127	Al Dreib (Akkar)	Jozeph Abdallah (03305494)	200	3 000
2	Scania	M 100141	XLET6X20004439601	Gazza/Al Marj (West Beqaa)	Ibrahim Abed Al Hadi (70045835)	150	8 500
3	Scania	M 100 035	4391136	Kherbet Roha / Rashaya/Kfar Mechki	Ali Al Kordi (03833148)	300	7 500
4	Iveco	M 103 037	XLET6X20004439601	Mashariaa Al Qaa	Mohamed Krombeh (70126139)	250	6 500
5	Iveco	M 103 032	ZCFA1EF0002391130	Hosh Essayed Ali (Hermel)	Hassan Hamed Al Bazzal (03730540)	150	4 500
6	Iveco	M 103 034	ZCFA1EF0002390771	Nassya, Zahle, (Central Beqaa)	Hussein Tarchichi (03730540)	250	9 800
7	Iveco	M 103 033	ZCFA1EF0002390892				
8	Iveco	M 100035	ZCFA1EF0002390893	Baalbeck, Deir Lahmar	Omar Al Zokra (03412852)	150	4 000
9	Iveco	M 100 031	ZCFA1EF0002391014	Kobayat, Wadi Khaled, Al Jouma, Halba	Jozeph Daher (70125362)	400	5 000
10	Iveco	M 103036	ZCFA1EF0002405860				
Total (10 trucks)						1 850	48 800

Annex 5: Dairy equipment procured within LRF-26 (Phase 2)

1) PO No. 5201064 (milk cooling tanks and equipment)

Date: 10 May 2013

Item	Detail	Number
1	Milk cooling tank (2 000-litre capacity)	5
2	Milk cooling tank (1 000-litre capacity)	5
3	Milk pumps	8
4	Milk reception tanks (200–250-litre capacity)	8

2) PO Number: 5201056 (mini dairies and their accessories)

Date: 11 April 2013

Item	Detail	Number
1	Pot pasteurizers	50
2	Small working tables	50
3	Labneh bag hangers	50
4	Fire places	50
5	Butane gas burners	50
6	Ladles and agitators	50
Total	Complete micro-dairy units	50

3) PO Number: 5201103 (mini dairies and their accessories)

Date: 7 August 2013

Item	Detail	Number
1	Pot pasteurizers	15
2	Small working tables	15
3	Labneh bag hangers	15
4	Fire places	15
5	Butane gas burners	15
6	Ladles and agitators	15
Total	Complete micro-dairy units	15

4) PO Number: 52011441 (mini dairies and their accessories)

Date: 20 January 2014

Item	Detail	Number
1	Pot pasteurizers	15
2	Small working tables	15
3	Labneh bag hangers	15
4	Fire places	15
5	Butane gas burners	15
6	Ladles and agitators	15
Total	Complete micro-dairy units	15

5) PO Number: 5201055 (medium dairies and their accessories)**Date: 11 April 2013**

Item	Detail	Number
1	Batch pasteurizer (250 litres)	10
2	Milk receiving tank	6
3	Working table	10
4	Labneh bag hanger	10
5	Cheese press	15
6	Cheese moulds	3 000

6) PO Number: 5201087 (medium dairies and their accessories)**Date: 14 August 2013 (delivery)**

Item	Detail	Number
1	Batch milk pasteurizers (250 litres)	4
2	Labneh bag hanger (stainless)	4
3	Working table	4
4	Cheese press	4

7) PO Number: 5201074 (medium dairies and their accessories)**Date: 14 August 2013 (delivery)**

Item	Detail	Number
1	Single head, electrical, portable, trolley type milking machine for dairy cows	100
2	500 units of detergent and disinfectant, each containing: - 1 litre alkaline detergent (food-grade chlorinated alkaline) - 1 litre acid detergent (food-grade acid detergent) - 1 litre disinfectant (food-grade disinfectant, ex. chlorine) - Teat dipping applicator (for teat pre-dipping), (squeeze bottle of 250 ml) - 1 litre iodine concentrate	500 units

8) PO Number: 5201031 vs 5201033 (milk cans and milk filters)**Date: 6 March 2013**

Item	Details	Units
1	Plastic food-grade milk filters	3 000
2	Milk cans (20 litres)	1 000
3	Milk cans (40 litres)	1 000

9) PO Number: 52011431 (milk tanks, milking machines, medium dairies)**Date: 22 January 2014**

Items description	Quantity
Cheese presses	2
Labneh bag hangers	3
Large working table	5
Medium size milk batch pasteurizer (250-litre capacity)	5
Milk pumps	2
Cooling tank (1-tonne capacity)	4
Milking machines	25

10) PO Number: 5201221 (milk cans and accessories)**Date: 16 June 2014**

Items description	Quantity
Milk Jars 40 kg capacity	250
Milk Jars 20 kg capacity	50
Milk filters	500
Iodine teat dip squeeze bottles and solution (units)	250
Food-grade milk buckets	250
Milk agitators	20
Mesh skimmers	20
Cheese spatula	10

11) PO Number: 5201269 (milk cans and accessories)**Date: 10 November 2014**

Items description	Quantity
Milk jars (40-kg capacity)	244
Milk jars (20-kg capacity)	400
Milk filters	700
Food-grade milk buckets	50
Medium size milk batch pasteurizer (250-litre capacity)	1
Labneh bag hangers	1
Large working table	1
Labneh bag hangers	1

12) PO Number: 5201274 (milk cans)**Date: 4 December 2014**

Items description	Quantity
Milk jars (40-kg capacity)	50
Milk filters	50

Annex 6: Results of artificial insemination services

Name	Area	# inseminated	% success	Assessment
1. Mohammad Al Ali (03413998)	Kobaiyyat (Akkar)	450	55	Active
2. Omar Siraj (76311193)	Kobaiyyat (Akkar)	380	51	Active
3. Jamil Deeb (03071833)	Donniyyeh (North Lebanon)	80	45	Idle
4. Ibrahim Deeb (70106635)	Tell Abbas (Akkar)	650	49	Active
5. Abd Shaaban (70108835)	Halba – Akkar (Akkar)	640	54	Active
6. Rashid Othman	Halba (Akkar)	Not practicing	–	
7. Rabie Abdallah (71828136)	El Dreib (Akkar)	800	55	Active
8. Abdul Rahim Keelani (70198730)	Tell Abbas (Akkar)	890	54	Very active
9. Francois Chidiacke (70142992)	Batroun (Akkar)	1 050	57	Excellent
10. Shadi El Nahoum (70190215)	El Koura (Akkar)	150	48	Idle
11. Ghawi Ghawi (03016731)	El Koura (Akkar)	95	45	Idle
12. Bashir Naaoum (71509999)	Zgharta (Akkar)	450	50	Active
13. Fadi Ismail (03563605)	El Joumeh (Akkar)	1 200	57	Excellent
14. Yousef Sobh (03683854)	KafarMeshki and Rashaya	280	45	Moderately active
15. MohamadZaytoun (03841491)	Saweeri (West Beqaa)	1 350	55	Excellent
16. Bilal Khalil (03092238)	Ghazza (West Beqaa)	1 800	58	Excellent
17. Abdo El Majzoub (70449262)	Ghazza (West Beqaa)	1 050	54	Excellent
18. Ahmad Shmouri (71729658)	Marj (West Beqaa)	550	49	Moderately active
19. Abbas Fakih (71328619)	Zahle (Central Beqaa)	790	54	Active
20. JaadMaakaroun (03931452)	Zahle and Ablah (Central Beqaa)	390	49	Moderately active
21. AymanYousef (03015640)	KherbetRouha (West Beqaa)	70	35	Idle
22. Ali Melhem Tarchichi (76667501)	Naseryyeh (Central Beqaa)	800	53	Active
23. Ali El Najjar (03690625)	Baalbek (North Beqaa)	630	55	Active
24. ZaherSobh (70547509)	Baalbek (North Beqaa)	270	38	Moderately active
25. Ali Rostum (76044149)	Rasm El Hadath (North Beqaa)	180	41	Idle
26. Bilal Nazha (70545055)	Labwee (North Beqaa)	800	54	Excellent
27. Kamal ShhaddehBou Fares (71870421)	Masharee El Qaa (North Beqaa)	650	51	Active
Total		16 445	50.5 (average)	

Annex 7: List of project beneficiaries

List of project beneficiaries for 50 mini-dairy processing units					
PO 5201056 ORSO/LEB/201/UNJ – Dated 11 April 2013					
Quantity received = 50 mini units					
Caza	Village	Names	Telephone	Registration #	Qty
Zgharta	Ein Taroun	Domet Abd ahald (Katia Chhade)	06-575103		1
	Alma	Rachid Addouj (Chahide)	70-207847	3	1
		Mahmoud El-Masri	71-583691		1
		Houriyyi Ahmad Erslan	71-583691		
Subtotal Zgharta					3
Batroun	Beit Kassab	Jeanette Jerji	06-770052	54	1
	Chbtin	Charbel Youssef Najem (Chadia)	76-580007	50	1
	Niha	Youssef Khouri (Wasten)	06-775432		1
	Sghar	Georges Matta (Roksan)	03-390921		1
	Kfarhalda	Georges Saad (Alice Saba)	03-345486 06-780070		1
	Zan	Antoine Hanna (Rita)	03-096491		1
	Douma	SALIME Chalhoub (Elie Chalhoub)	06-520225		1
Subtotal Batroun					7
Bcharri	Hasroun	Marie Therese Mereib (Georges)	06-591219		1
	Hadchit	Rita Hatchiti (Marcelle)	70-401636 06-645245		1
	Bekaa Kafra	Nissrine Barrak (Charbel Nakad)	70-120568	96	1
Subtotal Bcharri					3
Koura	KfarHazir	Hanaa Mkhayel (khalil)			1
	Khan Bziza	Rafqa Sekkar	71-432 046		1
	Bsarma	Toni Botros Hanna	71-630278		1
Subtotal Koura					3
Donniyeh	Beit Alfakes	Sabah Ahmad Hamad	03-484523	3	1
		Khadije Mhamad Dib + Khadiji Hassoun	03-821518		1
		Hayat +Ali ahmad Yehiya	03-405839		1
		Emna + ahmad hamad Yehiya			1
		Salime Ahmad Dib (abd Aziz Dib)	70-252781	25	1
		Nada Mhamad Omar (Abd Ghafour Dib)	70-252781	25	
		Roukayya Khoder Hassoum	71-459335	25	
		Mhamad Awada (Khadiji)	70-713826		1
	Nemrin	Emna Hammoud (Khoder)	06-491161		1
	Karsita	Fattoum Hajj (Mhamad EL-Hajj)	71-325175	84	1
		Hatem Zein Din	03-281644	51	1
Safira	Hoda Hassoun (Mostafa Hassoun)	03-768717		1	
Donniyeh	Ein Tini	Jouma & Naziha Khaled (Ahmad khaled)	06-260155 06-260175		1
	Taran	Sanaa Trad (Mhamad Trad)	70-793195		1
		Emna Handouch (Mhamad Handouch)	06-490519	33	1
	Kfarbanin	Assia Sayed (Khoder Sayyed)	70-260905		1
	Debael	Aicha Ahmad Nasser	03-615912		1
		Khadija Fares (nasser Fares)	03-339541		1
Izzal	Fatme Maghchouch (Ahmad Maghchouch)	06-495036		1	

		Noura Maghchouch (Mostafa Maghchouch)				
		Fatme Youssef (Mahmoud Youssef)	71-988550		1	
		Baria Abd Rehmen (Ali Abd Rehmen)	71-758398		1	
		Halime Maghchouch (Mostafa Maghchouch)	06-495133	9	1	
		Rahife Maghchouch	70-595302	23	1	
		Maha Maghchouch (Mostafa Maghchouch)	06-495093		1	
		Joumana Khaled Yassin	71-648366		1	
		Nawaf + Nahda Kamal Din			1	
Donniyeh	Bkarsouna	Dam el-Hana Chowk (Khoder chowk)	03-129374		1	
	Berit Haweek	Majida Nasser (Abd El-hamid Nasser)	03-196837		1	
	Houwara	Fadia Terkamni (Ahmad Terkmeni)	03-920494			1
		Fadia Terkamni (Mostafa Terkmeni)				
		Khadija Terkmene	03-739016			1
		Ali Ahmasd Terkman	76-185775			
		Soukayna Terkmene (Mother of ziad Terkmani)	70-155949			1
		Aicha khalil Terkmene				
Deir Nbouh	Fatme Ahmad Mhamad	03-835866	12		1	
Subtotal Donniyeh					30	
Mennyi	Nabi Youchaa	Awsaf El-Masri (Ali Masri)	06-462602	100	1	
	Mennyi	Layla Kassab (son : Karam Kassab)	06-460023	83	1	
Subtotal Mennyi					2	
Akkar	Halba	Fadi Mhamad el-Halabi			1	
	Halba	Halba Coop			1	
Subtotal Akkar					2	
Grand total distributed						
Czas					Qty	
Zgharta					3	
Batroun					7	
Bcharri					3	
Kourra					3	
Donniyi					30	
Mennyi					2	
Akkar					2	
Total					50	
Final balance						
Quantity received					50	
Quantity distributed					50	
Balance					0	

List of project beneficiaries from the distribution of 15 additional mini-dairy units				
PO: 5201103 ORSO/LEB/201/UNJ - Dated 7 August 2013				
Quantity received : 15 additional mini-dairy units				
Caza	Village	Cooperatives	Names	Telephone
Akkar	Fnaydek	Fnaydek	Fatme Ahmad Zakhia	03-342 916
	Fnaydek	Fnaydek for fabrication of animal and vegetal production	Fadwa Rachid Zahramen	03-125 584
	Fnaydek	Union Municipality of Jerd Kaytae	Rana EL-Sayed	03-531 489
Donniyeh	Bkarsouna	NA	Mazhar rachid chawk	03-433 073
Batroun	Bchaele	NA	Therese Romaniyos	76-079782
Baalbak	Bdnayel	NA	Ibrahim Sleiman	76-030329
Aley	Bhamdoun	NA	Nada jerji Kheir Alla	03-708 981
Donniyeh	Beit El Fakes	NA	Jamil Dib	70-252 781
Batroun	Bjerdefil	NA	Vergeni Salam	03-836 805
Baalbak	Nabi Chit	Baalbak	Sawsan melhem Abd Sater	70-710665
Baalbak	Charawni	Baalbak	Iman Askar	70-506 343
Baalbak	Baalbak	Baalbak	Hala Mahmoud Soleh	71-398 209
Baalbak	Tarayya	Tarayya	Fatme Hamiye	70-912 164
Akkar	Halba	Halba Cooperative	Hajj Baker Naim	03-436 392
Akkar	Halba	Halba Cooperative	Hajj Baker Naim	03-436 392
Final balance				
Quantity received				15
Quantity distributed				15
Total stock of additional mini-dairy				0
Distribution of mini-dairy units				
Quantity received				50
Quantity distributed				50
Balance				0
Distribution of 15 additional dairy units				
Quantity received				15
Quantity distributed				15
Total in stock of mini-dairy units				0
N.B: The delivery notice for each beneficiary with his phone number, ID card copy, ID number and his signature is available in LRF-26 dairy project recording files at the FAO offices in Zahleh.				

Milk can distribution

List of project beneficiaries of 2 000 milk cans and 3 000 milk filters
(procedure under dairy project LRF-26)

PO = 5201031 – Dated 10 April 2013

Quantity received: 1 000 milk cans (20 litre), 1 000 milk cans (40 litre), 3 000 plastic food-grade milk filters

Caza	Coop.	Centre	Recipient	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters	No. of farmers
Central Bekaa	Zahleh	Dalhamiye	Nawwar Hamdi Ibrahim	25	X	50	25
		Jalala	Mamdouh and Ali El Radi	20	X	50	20
		Khalil Akl	Georges Sawaya	1	1	2	1
		Karak	Adnan Salhab Rodwan	25	X	70	25
	Nasriya	Nasriya	Hossein Tarshishi	50	X	80	50
		Hosh El Nabi	Khaled El Tannousi	30	X	45	30
	Kab Elias	Kab Elias	Mahmoud Kassem EL Mahmoud	15	X	25	15
Subtotal CENTRAL BEKAA				166	1	322	166
West Bekaa	Ghaza	Ghaza	El Majzoub Ibrahim	50	X	60	50
		El Khyara	Hassan Ali Kerdi	15	X	25	15
		Ghaza	Soaad Melhem Darwish	2	2	X	4
		Ghaza	Moseada Abou hammin	2	3	X	5
	Sawira	Sawira	Diab Janbein	20	X	30	20
	Khirbet Kanafar	Mashghara	Hassan Bjeiji	30	X	50	30
		Masabki	Bassam Hajjar	30	X	40	30
	El Marej	Marej1	Khoder Oweid El Asaad	40	X	50	40
		Marej2	Abed El hamid Abbas	10	X	20	10
Subtotal WEST BEKAA				199	5	275	204
Caza	Coop.	Centre	Recipient	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters	No. of farmers
Baalbek	Bazaliya	Labwa	Mashhour Abdo Abbas	30	X	150	30
	Bazaliya	Labwa 2	Bilal Rabah	20	X	40	20
	Bazaliya	Bazaliya	Ali Kassem Bazal	20	X	150	20
	Hosh El Nabi	Bednayel	Khalil Abaas Haydar	5	X	3	5
	Shlifa	shlifa	Rabih Botros Rahme	10	X	25	10
		shlifa	Dani and Elham Jaajaa	5	5	3	2
	Baalbek	baalbek	Omar El Zokra	30	X	160	30
Mashariea El	Mashariea El Kaa	Shehade Abou Fares	40	20	80	60	

	Kaa		Mohamad Hassan Khalaf	20	5	130	25
	AL Rida	Brital	Abbas Ali Mazloun	5	X	5	5
	Baalbek	Bednayel	Mohamad Ajaj Akil	2	X	1	2
Subtotal BAALBECK				187	30	747	209
Hermel	Sayed Hosh El Ali	Sayed Hosh El Ali	Hamed Bazal Hassan	30	X	150	30
Subtotal HERMEL				30		150	30
Rashaya	Roha Kherbet	Rfeid	Faraj Osman Sawsan	4	X	4	4
	Kfarmechki	Kfarmeshki	Rola El Ferkh Saaid	20	X	35	20
		Lebbaya	Mohamad Ali Khatib	1	X	1	1
Subtotal RASHAYA				25		40	25
Caza	Coop.	Village	Recipient	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters	No. of farmers
Baalbeck		Baalbeck	Nayef Kayed Bazzal	1		2	
			Ali assaad Bazzal	1		2	
			Kasem assaad bazzal	1		2	
			Ali Ahmad Bazzal	1		2	
			Mhamad Ali bazzal	1		2	
			Mehdi Ali kHayel	1		2	
GRAND TOTAL distributed in BEKAA				613	36	1546	635
Caza	Coop.	Village	Recipient	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters	No. of farmers
Akkar	COOP Jouma and its environs	Beino	Kafrouni Pascal	3	3	6	6
			Georgette Kafrouni	2	2	5	4
			Jamil Dib	1	1	2	2
			Pascal Kafrouni	20	20	40	40
			Mahmoud Mostafa Mahmoud	15	15	30	30
		Borej	Khaled Yassin	1	2	3	3
		Dawra	Mahmoud El Ghani	2	2	5	4
		Rahba	Mounir Khouri	2	2	5	4
		Ilat	Hanna Jdid Hanna	9	9	20	18
	Halba COOP its environs and	Mshha	Akram Shaaban	15	15	30	30
			Arka	Youssef Ahmad Taleb	12	12	30
		Halba	Baker Naim Hajj	23	23	50	46
	Salem Ahmad Salem		15	15	40	30	
	Kobayat COOP and its environs	Kobayat	Daher Joseph	25	4	80	29
			Hosam El Asaad	50	50	125	100
Mohamad Khoder			10	30	40	40	

		Talal El Hosni	10	10	20	20		
		Rmah	Joseph Abdallah	10	10	20		
	COOP Dreib	Dreib	Joseph Botros Abdallah	25	25	70		
TOTAL distributed in AKKAR				250	250	621		
Caza	Village	Names	Telephone	Registration No.	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters	
Zgharta	Zgharta	Elie Salim Mouawad	03-133633		2	5	3	
		Youssef Gerious Batour	70-233317	153		2	1	
	Kfardlakos	Botrous Youssef Feniyenos	03-268926	288		2	2	1
		Antoine Feniyenous			2	2	2	
		Nadim Maroun Mjalleh	06-665734		2	2	2	
		Mansour El beyea	Milk Dealer		5	5	10	
		Bachir Sarkis Naoum	70-509992 71-509999		2	2	2	
		Anwar Hares Franjiye	03-471962		2	2	3	
		Wadad Bachir Naoum	06-667403			4	2	
	Iael	Mounif Ayoub	03-960404		2	2	2	
	Karem Saddeh	Monstry St Jacob	06-595425		2	2	2	
Ein Taroun	Doumit Abd El Ahad	06-575103			4	2		
Caza	Village	Names	Telephone	Registration No.	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters	
Zgharta	Alma	Fawzi Chheb Abdalla	70-442578			2	1	
		abdala Kaysar Wehbi (Naziha Youssef)	06-685186		2		1	
		Bilal Ahmad Erslan	71-583691			2	1	
		Mahmoud Mhamad El-Masri	71-583691			5	3	
		Houriyye Erslen	71-583691					
	Meryata	Taha Ali obayd	71-934090	13		2	1	
		Mhamad Ali Zreik	70-355219	7	2	2	2	
		Tarek Mahmoud Asaad	71-969791			3	2	
	Fouar	Abd Aziz Houayek	71-063226	34		2	1	
	Darayya	Toni Khosse El alam	03-453894	84	4	8	15	
	Bchennin	Leiba Fadel	70-473406			2	1	
Subtotal ZGHARTA					27	62	60	

Caza	Village	Names	Telephone	Registration No.	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters
Batroun	Bchaele	therese romaniyos	76-079782	96		2	2
	Mhermech	Najib Elias Attiyeh				5	2
	Beit kassab	Jeanette Elias Jerji	06-770052	54		3	2
	Chebtin	charbel Youssef Najm (Chadia)	76-580007	50	1	5	3
	Niha	Youssef Atiyeh (Wasten)	06-775432		3		2
	Sghar	Georges Nadim Matta	03-390921			5	2
	Ebrin	Mariam Chahine	03-625311	23	3	2	2
	Hadchit	Marcelle Hadchiti	70-401636 06-645245		2		2
	Kfarhalda	Georges hanna saad	03-345486 06-780070		2	3	2
	Kfarhayy	Charbel Rizk	03-646273			5	4
	kfarhatna	Dani Tanios	03-004184		1	3	2
	Zan	Antoine Hanna Hanna	03-096491		1	3	1
	Douma	Elie Youssef Chalhoub	06-520225		2	2	2
	Kesrwen (mont Liban)	Joseph Najem				4	2
	Bjerdarfil	Vegeni Salam	03- 836 805	15			3
Bhamdoun (Aley)	Nada kheiralla	03- 708 981	38		2	2	
Subtotal BATROUN					15	44	35
Caza	Village	Names	Telephone	Registration No.	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters
Bcharri	Hasroun	Georges Meraeb	06-591219		2		2
	Bekaa Kafra	Charbel Nakad	70-120568	96	2	3	2
Subtotal BCHARRI					4	3	4
Caza	Village	Names	Telephone	Registration No.	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters
Koura	Kfarhazir	Khalil Mkhayel				2	1
	Bterram	Elie Andraous	03-436493			2	1
		Salim Dib Sleiman				2	1
	Bhmezzin	Ibrahim Said Makhlouta	70-163882	173	5	6	15
Kosba	Nicolas Zeidan	71-834114		10	0	15	
Caza	Village	Names	Telephone	Registration No.	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters
Koura	Metrit	Yaakoub Tedros	06-952431			2	1
	Bsarma	Toni Hanna Botrous	71-630278			2	2

	Habbouch	Miled Jabbour (Hiyam)	06-950205			3	2
		Elias Tawk (Odette)	06-950205			3	2
		Hanna el Alam				2	1
		Youssef Loulou Tawk	70-578649			3	2
	Kfarkahol	Nicolas Elias Semaan	03-532647	9		3	2
	Al-Majdel	Moussa Chalouhi (Georgina Alam)	70-834011	18		4	2
Subtotal AL KOURA					15	34	47
Caza	Village	Names	Telephone	Registration No.	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters
Doniyeh	Assafira	Amira Essayed (ahmad mahmoud el yakhne)	03-961581			2	1
		Ahmad El Yakhani	03-961581			2	1
		Ali Mostafa el Yakhani	70-560411		2	10	12
		Saada khaled Harmouch	70-014237			2	1
		Hoda Hassoun	03-768717			10	10
		Ahmad Melhem Melhem (fatiya)	06-490298			4	2
		Jamila Daher (Mahmoud Daher)	71-943407			2	1
		Maha El Yakhani				25	30
Donniyeh	Beit Al Fakes	Waddah Harmouch				10	10
		Sabah Ahmad Hamad	03-484523	3		2	1
		Amine Ahmad Erslan	03-484523	3		2	1
		Ali Mhamad Yehiya (Hend Yehiya)	03-790157	22		2	1
		Khadija Mahmoud Dib+Khadija Khoder Hassoun	03-821518			2	1
		Hayat Ahamd Yehiya	03-405839			2	1
		Emna + Ahmad Hamad Yehiya				2	1
		Chafic Mhamad Yehiya	70-565747	44		2	1
		Ayman Abd Malak Hajj	70-186344	44		4	2
		Abed el ghafar abed Imalak lhaj (ramia)		44		2	1
		Mhamad Abd El Kader	70-240108			2	1
		Imane ahmad dib	70-252781			2	1
		Salima Ahmad Dib(abed el aziz)	70-252781	25		3	2
		Nada mohamed Omar (abed el ghafour)	70-252781	25		3	2
		Rokiya khoder Hassoun	71-459335	25		3	2
		Mhamad Ahmad Osman	03-915773	30		2	1
Adnan Ahmad Ismail	70-140486	1 000		2	1		
Mhamad Hussein awada	70-713826			2	1		

Caza	Village	Names	Telephone	Registration No.	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters	
		Mhamad Ahmad abd El kader	71-053650	6		2	1	
Donniyeh	Nemrin	Samira Mahmoud Obeid (Mehdi Hassan Merei)	71-909188	79		2	1	
	Bakarsona	Mezher rachid chawk	03- 433 075	51		10	5	
		hussein ali chandab	03-079563	20		3	2	
		mhamad ali chandab	70-571219	20		3	2	
		ali mhamad chawk	03- 433073	95		2	2	
		mhamad hussein chandab	70-032022	8		3	2	
		Ahmad mhamad mouna	70-146905	35		2	1	
		Mahmoud Hassan chawk				2	1	
		Mhamad Mahmoud shawk (Terez)	71-201940	102		3	2	
		Nayef Abed el Hamid Moumen				4	2	
		khoder said chawk (Dam el hana)	03-129374			3	2	
		Youssef Mahmoud Shawk				3	2	
		Ahmad mhamad Shandab(Salma Allam)	03-273890	20		2	1	
		hassan mhamad chandab	76-045183			2	1	
	Ali Chandab) PILOT(70-571219			1	1		
	Assoun	Mhamad Mostafa Abou Zeid	06-490918			2	1	
		Khoder & Abd El hamid Hammoud	06-491161			4	2	
		Khaled& Ahmad Diab	70-376219			4	2	
		Hussein Mhamad Cheikh	03-368093			2	1	
		Ali mohamed hussein el sheikh(Salima)	03-368093	49		3	2	
		Omar mohamed kanj	03-430561	20		3	2	
Donniyeh	Karsita	Fatme hamad el hayek	71-864074	13		1	1	
		Khaled Mhamad Hayek	70-569152	55		3	2	
		Fattoum (mohamed zeinedine el hajj))	71-325175	84		2	20	22
		Mohamed mahmoud el hayek (Abir)	70-589044	3			2	1
		Ahmad Radwan					2	1
		Mariam ahmad hussein issa	76-002015	13			2	1
		Mhamad Ahmad Znoub	03-902723	122			2	1
		Hatem Zein Din (milk dealer)	03-281644	51		2	15	7
		Ahmad Mostafa Kaddour	03-944525	3			2	1
		Mohamed khaled aloush(Hamda)	70-251786	85			2	1
		Mhamad Hussein Kaddour	70-271217	3			2	1
		Jamal mohamed Gharib(Fatme)	70-539067	64			2	1
		Bandar Hussein Agha	03-931643				0	20

Caza	Village	Names	Telephone	Registration No.	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters	
Donniyeh	Karsita	Ali ahmad hussein aloush	03-603882			10	10	
		Ali Mhamad Issa (milk dealer)	03-085597	37	0	35	22	
		Ahmad mohamed aloush(ghedwa)	03-195821	85		2	1	
		Khaled Rachid Alwan (Diba)	70-569152	55		3	2	
	Ein EL-Tini	mhamad &khaled Ahmad Khaled	06-260155 06-260175				8	4
		Hussein mehssen obeid (Aziza)	76-502368			2	1	
		Soad (Khoder mahmoud obeid)		8		2	1	
		Zeina mehssen obeid	70-415378			2	1	
	Taran	Mhamad trad	03-512487	11		2	1	
		Mostafa hussein Kassem (Fatme)	71-843726	23		2	1	
		Mhamad Rachid Trad	70-793195			3	2	
		Mhamad Handouch	06-490519	33		3	2	
Donniyeh	Btermez	Bandar Hussein El Agha	71-745931			2	1	
	Al- rawda	Zoulfikar seif eddine al ouweid (Amira)	70-341931			2	1	
		ismail mostafa al ouweid				2	1	
		Naser Diab El ouweid	76-113098			2	1	
		Saad Diab El ouweid				3	2	
	Kfarhabou	Mahmoud Fouad Mahmoud(Hawdi)	03-275884	14	3	2	2	
		carlos ibrahim Mekdsi	70-154151	32	2	2	2	
	Kfar Banin	khoder mhamad El sayed	70-260905			3	2	
		Abd el hay hussein Saade	71-868840			2	1	
	Bekaa Safrein	moatasam Mahmoud Kanj	03-175062	53		2	1	
	Kafarhabo	Ali ahmad el ahmad (Dalia)	06-241031	898		4	2	
	Mrah Sraj	Samir Hussein Mereai	70-706121	41/27		3	2	
		Ahmad ibrahim (Kamila)	03-531916	40		3	2	
	Dabaal	Aysha hassan Nasser	03-615912			4	2	
		Naser Abdul Kader Fares (Khadija)	03-339541			6	3	
El kottein	Ezz el Din Chafchk	70-570907	36		2	1		
El kottein	Ahmad Kamal din (Naima)	03-491429	12		3	2		
Donniyeh	Harf el sayad	Naser Mostafa Hamdan	06-240633	6		2	1	
	beit zoud	mhamad machhour Zoud	71-067338	60		2	1	
	El Hazmieh	Mariam Mostafa Eldirani	70-667277	9		3	2	
	Beit hawik	Fatme Khalil (Mohamad khoder Terekmani)	03-184759			2	1	
		Abed El Hamid Khoder Naser (Majida)	03-196837			3	2	
Ali khoder Naser (Sououd)		03-196837			2	1		

Caza	Village	Names	Telephone	Registration No.	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters	
		Ali Abed El Kader Fares	03-395849			2	1	
Donniyeh	Izzal	Aicha Abd rehman				2	1	
		Mahmoud kassem Maghchouch	70-852074			2	1	
		ahmad hussein Maghchouch	06-495036			4	4	
		Mostafa Hussein Maghchouch						
		Mostafa Abed El Rahim Kamal eddine (Fatme)					1	1
		Mhamad Ahmad Youssef (Fatme	71-988550				2	1
		mhamad Ahmad Yassin	70-546535				2	1
		mostafa hussein Khaled Maghchouch					1	1
		mostafa Mhamad Abd Rehman	70-328375	27			2	1
		Ali Khoder abd Rahman	71-772896				2	1
		mhamad Ahmad Abd Rehman					4	2
		Ali Nadim Abd Rehman	71-758398				6	3
		Hssan Mahmoud Kamal din					2	1
		mostafa Mhamad Maghchouch	06-495133	9			3	2
		Mostafa Ali El maghshoush (Rahifa+ his son Ali)	70-595302	23			3	2
		Mahmoud mhamad Amoun(shahida)	70-382534	26			3	2
		Mahmoud hassan nadah(Dalla)		78			2	1
		Maha el Maghchouch	06-495093				2	1
		halimi abd el hadi	06-495128				2	1
		Ahmad Abed El Rahim Kamal eddine (Fatme)	70-088736				2	1
		Joumana Ali Yassine	71-648366				2	1
		hassan mhamad Maghchouch	70-328375				2	1
		Abd Rahim Ali Maghchouch					2	1
		Abdel latif Maghchouch					2	1
		Nawaf mhamad Kamal eddine					1	4
hassan ali Radwan					1	2	1	
Mostafa Ahmad AbdRahman(Samiha)					1	2	1	
Donniyeh	Hawara	Fadia (Mohamad Terekmani)	03-920494		1	2	1	
		Fadia (Ahmad Terekmani)			2	1		
		Khadija (mostafa terekmani)	03-739016			2	1	
		Ali Ahmad Terekmani	76-185775			2	1	
		Ahmad khoder Khalil (Zeina)	71-692365			2	1	
		Soukayna(Ziad mhamad Terekmani	70-155949			4	2	

		Aysha Khalil Terekmani				3	2	
Donniyeh	Terbol	Najwa Jreish (Elias Jreish)	03-411620			3	2	
	Deir Nbouh	fatme ahmad yassin	03-835866	12		3	2	
	Beit Dawood	Mahmoud Khoder Naddah (Halima)	03-499437			2	1	
	jerd el kaytaa	huussein alwan	06-895033			10		
	Ezki	Mostafa mahmoud el sherkawi	03-766735	30		3	2	
Subtotal Donniyeh						15	461	327
Meniyeh	AL Nabi Youchaa	ali Ahmad El MASRI	06-462602	100		3	2	
		Said Mhamad El kalal	03-144573	12		3	2	
		Mostafa khoder Beker	03-182430	135		2	1	
		Abd El karim Omar Dhaybi	06-463438	176		2	1	
		Ahmad Abd RAHMAN Dhaybi	70-582680	7		2	1	
		Hassan Abd Sater Dhaybi	06-461859	46		2	1	
		Khaled Mhamd Dib Masri	06-463005	106		2	1	
		Omar Mhamad El kalal	03-414624			2	1	
	Bhannin	Marwan Mhamad Taha	71-639498	32		2	1	
	Hay El blat	Mostafa Khoder Beker	76-171936	3		2	1	
	Hay El Douhour	khoder Ali sayed Ahmad	03-238462	22		3	2	
		Mhamad Mostafa essayed ahmad (Sanaa)	03-183242	2		2	1	
	El menyi	Samer Ahmad Alam eddine	70-296050	13		2	1	
		Mahmoud Ghezzawi	70-308295	366		2	1	
		yehia mhamad Achrafi	06-464173	90		4	2	
		Ammar Ahmad El kheir (Nada)	70-427658	513		2	1	
		Mhamad hussein Farasha	06-462737	196		2	1	
		Karam merae El Kassab (Layla)	06-460023	83		2	1	
	Hay Hamdoun	Mostafa Said Malas	06-464838	498		2	1	
		Said Hussein Malas	03-539665	498		2	1	
		Khaled Refaet Matar	03-937643	264		2	1	
		Abd el Kader Srouf	03-227014	231		2	1	
	Hay Jdidi	Zeinab Dandan	70-097350	135		3	2	
		Salem Ahmad el Kheir	06-460720	508		3	2	
	Hay el Heker	Hassan ahmad katiae	06-461208	108		2	1	
	Hay Farhat	Mhamad Zreika	03-372391	207		2	1	
	Trablos	Fayez Akra				5	10	
	Deir Omar	Abd El Hafiz Dhaybi	06-430386	71		2	1	
		Nabih Dhaybi	70-512159	90		2	1	
	Lnabi kozeiber	Waleed Hassan El Beyrouti (Rana)	03-737604	379		3	2	
		Mostafa Mohamad Dandan (Maha)	71-932988	383		3	2	

Subtotal Menniyeh				5	74	48	
<u>Grand total distributed</u>							
Caza	Coop.	Centre	Recipient	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters	No. of farmers
Doniyeh Minyeh	N/A			36	543	376	160
Zgharta				27	62	54	32
Batroun				15	44	35	52
Bsharri				4	3	2	3
Koora				15	34	47	12
TOTAL distribution in North				87	686	514	228
South	EL Hajj Ali Sabra	Majdel salam (blida)	Hajj Ali Sabra	15	X	15	15
TOTAL distribution in South				15	X	15	15
Metn	Georges Shahid Khalil	Feitron	Meiroba	8	7	20	8
TOTAL distribution in Metn				8	7	20	8
Akkar	Hajj Bakr	COOP Halba	COOP Halba	27		84	35
	Fadi El-halabi		COOP Halba		21	200	100
TOTAL distribution in Akkar				27	21	284	135
Region				Qty of 40-litre cans	Qty of 20-litre cans	Qty filters	No. of farmers
Bekaa				613	36	1546	642
Akkar				250	671	905	500
North				114	686	514	363
South				15	X	15	15
Metn				8	7	20	8
GRAND TOTAL DISTRIBUTED				1 000	1 000	3 000	1528

FINAL BALANCE	Qty of 40-litre cans	Qty of 20-litre cans	Qty filters
Quantity received	1 000	1 000	3 000
Quantity distributed	1 000	1 000	3 000
Balance	0	0	0

N.B: The delivery notice for each beneficiary with his phone number, ID card copy, ID number and his signature is available in LRF-26 dairy Project recording files at the FAO offices in Zahleh.

Annex 8: List of women-headed households granted with dairies with both project phases

القائمة النهائية للمستفيدين من معدات التصنيع المنزلي الصغيرة.			
تحتوي كل وحدة تصنيع صغيرة على: حلة ستانليس 70 ليتر، موقدة، سخان على الغاز، طاولة ستانليس، علاقة لأكياس اللبنة، مغرفة، حراك، دلو، قوالب، ميزان حرارة.			
الهاتف	اسم المزارع	الضبيعة	القضاء
03-570554	فاطمة حسين جعفر (زوجة حسين البزال)	حوش السيد علي	الهرمل
71-022370	وفاء الحولي (ابنة حسين الحولي)		
70-359659	صفاء حسين الهق (تعاونية السنديان)	الكواخ	
595832-03	ناهدة حسين الهق (زوجة علي الهق)		
03-468090	زينب جعفر (ابنة حسين محمد جعفر)	القصر	
70-220113	ندى عبدو جعفر (زوجة أحمد علي جعفر)		
763267-71	مريم الجمل (زوجة مهدي محمود زعيتن)		
03-771279	ناهدة عبد الهادي (زوجة صادق عابدين)	العاصي	
03-087746	زينب دندش (ابنة ابراهيم دندش)	العسرة	
71-697028	نبيهة دريس (زوجة محمد عاصي)		
03-753707	ربيعة صفوان (ابنة حسين صفوان)	بيت الطشم	
03-761554	زينب قاتصوه (زوجة مصطفى الساحلي)	المعالي	
70-665475	ندى حسن حمود (زوجة حسين حسن ناصر الدين)		
03-868414	مريم الهق (زوجة محمد الهق)	الهرمل	
08-201521	نزيهة الجوهري (زوجة عبد الرحمن الجوهري)	الدورة الغربية	
03-395849	فتاة محمد الزاهوري (ابنة محمد الزاهوري)	بريصة	
03-395849	انعام عثمان ياغي (زوجة المختار محمود فارس)		
70-107 801	زينب مرتضى (زوجة حسن مرتضى)	الشطاح	
71- 718 610	حسنا عبد الله (زوجة علي يوسف عبد الله)	جباب الحمر	
70- 112 795	سميرة الهق (زوجة رفيق حسن علوه)	عين البيضة	
70-863140	زينب ناصر الدين (زوجة خير الله ناصر الدين)	مرجحين	
03- 370 768	فطوم الحجيري (زوجة هيثم محمد الحجيري)	البرقاوية	
03- 370 768	رنجس الأطرش (زوجة علي محمد الحجيري)		
03-109917	زكية الأطرش (زوجة بركات محمد الأطرش)	مشاريع القاع	
489950-70	مريم الأطرش (ابنة حسين الأطرش)		
71-181567	أمونة الفليطي (زوجة محمد حسين الفليطي)		
70- 899927	حسن حسن البزال (ابنة حسن البزال)	البزالية	
08- 233593	شفقة محمد البزال (زوجة ابراهيم أحمد البزال)		
76- 133962	فاطمة ضاهر أمهر (زوجة محمود سعيد البزال)		
70- 286342	سنا ناصر الدين (زوجة علي أحمد ياسين)	الزيرة	
70-024972	هند المسلماتي (زوجة مهدي توفيق المسلماتي)	الفاكية	
03-821324	حياة حسين خضر (زوجة الشيخ محمود نزهة)	النبي عثمان	
869939-03	عفاف أكرم مهنا (زوجة زهير منصور)	رأس بعلبك	
497754-76	سنا علي العرب (زوجة أحمد مهدي العرب)	رسم الحدث	
305712-08	فوزية العرب (أرملة حسين يوسف العرب)		
03-933715	عصوية أحمد العرب (ابنة أحمد حسين العرب)		
272045-71	فهدة العرب (زوجة منذر العرب) 08-305750		
305175-08	كميلة العرب (زوجة أحمد مصطفى العرب)	شعت	
	نور العرب (زوجة علي اسماعيل العرب)		
350669-08	يمن البريدي (زوجة علي الدرة)	الصوانية	
598014-71	فاطمة المقداد (زوجة حسن المقداد)	مقتة	
08- 300 417	سلام رعيبي (والدة ايلي نبيه اسحاق)	شليفا	
08-320 557	سمية غصين (والدة نعمان حفيظ غصين)	مزرعة السيد	
03-198201	وداد نايف غصين (زوجة توفيق يوسف اسكندر)	بتدعي	
71-516 917	ايفات صليبي غصين (ابنة صليبي غصين)	مزرعة ابو صليبي	

08-321000	سامية عاد (زوجة سمير نبيه غصين)		46
08-321731	ماغى غصين (شقيقة دياب جرجس غصين)		47
08-373529	ظريفة الصلح (ابنة خليل ابراهيم الصلح)		48
377143-08	فاطمة علاء الدين (زوجة حسين بدر الدين علاء الدين)		49
70-547509	صفية الصلح (أرملة صالح الصلح)	بعلبك	50
	فضيلة العرب (زوجة محمد الصلح)		51
08-373866	حنان غلاييني (زوجة حسين الصلح)		52
03-606317	ام بسام بلوق (زوجة عثمان بلوق)	عدوس	53
03-889037	ثلجة العجم (زوجة زهر الدين ملحم)		54
71-146980	زينب العسدي (زوجة مصطفى العسدي)	النعنعية	55
08-911476	خيرية محسن عقيل (زوجة محمد عقيل)		56
71-126582	نظمية المقداد (زوجة عباس عباس)		57
	زينب يزبك (زوجة ملحم يزبك)	حوش الراقفة	58
70-922762	شمس يزبك (زوجة عباس يزبك)		59
	سهيلة يزبك (ابنة زلفو يزبك)		60
70-028073	زينب الحاج حسن (زوجة أحمد خليل الحاج حسن)		61
03-794822	توفيقه الجبالي (زوجة علي حمدان)	حوش النبي	62
71-313262	دنيا سلمان الحاج حسن (زوجة ابراهيم الحاج حسن)		63
03-794822	حمدا الحلواني "ام نزيه" (زوجة عبد الله الحاج حسن)		64
03-795466	ربيعة الديراني (ابنة أحمد ابراهيم الديراني)	قصرنبا	65
08-920328	غادة حسن الموسوي (زوجة أحمد علي أحمد)	الناصرية	66
03-066075	نزيهة عبدالله الترشيحي (زوجة صافي الترشيحي)		67
76-607582	مريم الموسوي (ابنة ابراهيم الموسوي)	النبي شيت	68
71-717830	ربي شكر (ابنة جاد الله شكر)		69
76-664503	فاطمة حمادة (ابنة محمود حمادة)	رياق	70
08-335920	نجية شومان (زوجة شومان سلمان شومان)	سرعين	71
70-720811	فيفيان حداد (زوجة مارسيل نصر الله)	الفرزل	72
03-987924	رندا لويس رزق الله (زوجة فادي مساعد)	تربل	73
03-833353	تمام علي عباس (زوجة قاسم علي عباس)	علي النهري	74
70-355131	حفيظة شريل (أرملة منير أبو نعوم)	رعبت	75
08-645636	حنين سوني عزام (زوجة غسان عزام)		76
782096-03	سعاد خاطر (زوجة مارون خاطر)		77
76-138566	هيام عمر عزام (زوجة زهير حافظ عزام)	خربة قنغار	78
08-641342	ابتسام المجذوب (زوجة أحمد المجذوب)	غزة	79
08-641176	مريم المجذوب (زوجة أحمد خليل المجذوب)		80
03-013385	صباح محمد حنود (زوجة فهد قاسم حمود)	بكا	81
03-531099	زهية محمد سمير بزيع (زوجة غسان حسين العبد)	عين عرب	82
70-599627	شريفة هزيمة (زوجة صالح القادري)	الرفيد	83
71-259369	سامية بركات (زوجة محمود بركات)	راشيا	84
76-788261	دلال بجمد (ابنة عقاب اسماعيل بجمد)		85
08-561133	سلوى الجمال (ابنة عزة الجمال)	المحيثية	86
71-829511	إنتصار أبو شاهين (والدة رجا أبو شاهين)		87
08-530240	زهية البوشي (زوجة سمير نصر الله)	كفرمشكي	88
	صالحه سرحال (ابنة سلمان سرحال)	تنورة	89
08-530485	فاديا مغماس (زوجة شكيب مغماس)	كوكبا	90
70-954661	صالحه شكر وهبة (زوجة يوسف أحمد صبح)		91
70-954661	فاطمة وهبة اليوسف (أرملة حسين حسن وهبة)	سحمر	92
70-008457	فاطمة أيوب منعم (زوجة حسين حسن منعم)		93
08-521244	أميرة القتيباني (زوجة رائف القتيباني)	حوش القتيبة	94
	إنعام محمد مرعي (زوجة يوسف القتيباني)		95
03-975637	إيمان علي حمود (زوجة كامل حسنان)	لبايا	96

	سكينة إبراهيم (ابنة حسن إبراهيم)		97
03-396603	بدرية السيد (زوجة وليد محمود السيد)	حلبا	98
03-147410	ريما سليمان الدندشلي(زوجة فادي الحلبي)		99
70-160381	سوسن عمر حمود (زوجة فواز العبد الله)		100
06-693372	بهية الكريير (زوجة علي الكريير)	سهل حلبا	101
06-820139	كاملة حسن محمود (زوجة محمود إبراهيم)	السماقية	102
70-325513	فوزية جديد (زوجة علي جديد)	المسعودية	103
70-398047	إيفات خضر (زوجة علي مصطفى عباس)	تل حميرة	104
06-810480	علي السيد (والدة أحمد السيد)	الحيصا	105
70-740900	نظيرة أحمد خلوف (زوجة حيدر خلوف)	تلبيرة	106
03-943224	أمال شاهين (زوجة يوسف مطانيوس إبراهيم)	دير جنين	107
06-835745	ماري بطرس عبد الله (زوجة لطف الله عبد الله)	سفينة الدير	108
06-835480	لميا الياس (زوجة إبراهيم الياس)	الهد	109
06-835465	منيرة الرفاعي (زوجة أحمد بربر)	مزرعة بلدة	110
831041-06	جواهر أحمد عبد العال (زوجة علي خضر)	الكواشرة	111
76-686693	نجمة علي عباس (زوجة مهدي محمد عباس)	عكار العتيقة	112
70-365336	محمود عبد الكريم علي (حلة+سخان)	الدورة	113
06-360200	رهيف اسحق صانع	بزبينا	114
06-890425	مريم جريس الراهب (زوجة منير خوري)	رحبة	115
06/360056	صونيا شاهين مخول (زوجة سيمون مخائيل مخول)	بيت ملات	116
03-350219	أنطوانيت موسى عبود (زوجة إيلي عبود)	القبليات	117
06-351525	تريز ضاهر (زوجة أديب مخول) (القطبية)		118
06-350770	سيدة سركيس موسى (زوجة يوسف موسى)		119
06-880613	غادة حسن عثمان (زوجة أحمد علي بكار)	عيدمون	120
06-855198	إيفات حنا (زوجة طانيوس الياس)	كفرنون	121
06-720402	الأخت غادة دير مار يوسف - القديسة رفقا مأوى العجزة	جنوب تل عباس	122
76-704034	رائية عماشة (ابنة أحمد محمد عماشة)	فرون	123
07-370738	زينب حمزة (زوجة رامز حمزة)	الجميمة	124
03-741958	رجاء وهبة "إم حسن" (زوجة محمد القادري)	كفرشوبا	125
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