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PALM DATES VALUE CHAIN DEVELOPMENT IN EGYPT

July 2019

SDGs:



Countries:

Egypt

Project Codes:

TCP/EGY/3603

FAO Contribution:

USD 400 000

Duration:

1 November 2016 to 28 February 2019

Contact Info:

FAO Representation in Egypt

FAO-EGY@fao.org



Implementing Partners

Ministry of Agriculture and Land Reclamation (MALR).

Beneficiaries

All actors in the date value chain; Consumers; National date palm research institutions; Egyptian universities; Government institutions; Non-governmental organizations; Small community development organizations; Marketing support institutions; Youth and women empowerment agencies.

Country Programming Framework

Priority Area A Agricultural information generation, sharing and dissemination.

Priority Area B (Improving productivity and efficiency in the agricultural sector), 2.3 (Increased crop production).

Priority Area C (Sustaining rural community development), 3.1 (Sustaining livelihoods of rural population, including gender equity through institutional transformation), 3.3 (Capacity development and institutional transformation).



BACKGROUND

Egypt's varying climatic zones make it the perfect country for growing different varieties of dates. Date palms can tolerate arid conditions and require a relatively small amount of water, making them an ideal crop for this area of the world. Dates are a crucial part of the local diet in Egypt, and date by-products, such as bars, blocks, syrups and pastes, are processed in factories and sold for local consumption. For these reasons, the date palm tree is expected to maintain a dominant place in Egyptian agriculture in the future.

Despite being ranked the top date producing country in the world, Egypt's export contribution to the international date market is low. Food safety issues and a lack of international quality standards (e.g. size, appearance, colour, texture and freedom from defects) contribute to Egypt's low date exports. Other problems that occur during growth and post-harvest (e.g. sunburn, skin separation, sugar migration and fermentation) along with difficulty managing the Red Palm Weevil (RPW), a major pest for date palms, are other factors that negatively impact Egypt's date exports. This project sought to build the capacity of actors across the value chain through a series of training sessions for date growers, collectors, traders, packers and processors. It also established a pest management programme for RPW.

The loss of date palms would have a negative impact on the livelihoods of local farmers and others involved with the date value chain in Egypt. For this reason, another important objective of this project was to collect date palm genes in two date producing regions, with the goal of preserving the genetic information of certain indigenous varieties of date palms in a pilot germplasm plot. In this way, the continued cultivation of these varieties can be ensured. The raising of standards for Egypt's date production will allow the country to be competitive in the international date market, thereby improving the livelihoods of stakeholders across the date value chain.

IMPACT

This project led to the establishment of three institutional bodies: the High National Council for Date Palm Sector Development, the Governorate Council in New Valley and the Date Palm Committee under the Horticultural Export Improvement Association (HEIA). A training centre for date palm technical workers was also established as a result of this project. These new bodies will work to ensure the sustained positive impact of the project.

The trainings carried out through the project developed the capacity of farmers, collectors, traders, packers, processors and other parties involved. Revenue across the date value chain is expected to increase as a result. This will have a positive impact on the livelihoods of those involved in the date sector in Egypt, some results of which can already be seen in activities that developed as offshoots of the implementation of this project.

ACHIEVEMENT OF RESULTS

The project achieved the expected outputs in terms of capacitating date palm value chain stakeholders on farm productivity, product quality, post-harvest management, marketing and exporting. In addition, the project assessed post-harvest management, packing and processing practices and designed solutions to improve linkages between date collectors and packing units. The project also developed an Integrated Pest Management (IPM) programme and established one gene collection plot.

The number of date growers who attended the workshops on improving farm productivity and producing good quality dates greatly exceeded expectations. The original target was 2 000, but a total of 7 445 farmers, labourers and trainers were trained in Aswan, Behira, Kafr El-Sheikh, New Valley, Siwa and Wahat Baharya. These sessions consisted of an initial assessment of the sector in order to identify the main actors in the date value chain in Siwa, followed by training workshops on improving date quality and production. Another successful output from this project was the development of a new revenue stream for local women, who began making and selling handicrafts made from date palm leaves.

The capacities of date collectors and traders were also enhanced through workshops focusing on the harvesting and handling of dates. After an analysis of the collection situation at the time, training sessions on good practices for harvest and post-harvest management of dates was delivered. Topics included good hygienic and manufacturing practices, pest control, fumigation and storage, processing and packaging and quality control.



The post-harvesting and processing of dates in Siwa was also assessed, with the goal of enhancing and upgrading packinghouses and factories to meet market needs. As a result of the awareness raised and the capacity built by the project, five factories in Siwa are now ISO 22000 certified, and 260 farms in Siwa were granted Ecocert Certification. In order to further improve capacity in this area, two study tours were organized, which enabled six participants from Egyptian date palm factories to gain experience from state-of-the-art packinghouses in both Tunisia and the United Arab Emirates. These tours were run in close collaboration with the Khalifa International Award for Date Palm and Agricultural Innovation. Three date palm festivals were also organized in conjunction with the Khalifa International Award, and were carried out between 2016 and 2018.

The goal of creating a pest management plan focused on the RPW was achieved by the hiring of Jose Romeno Faleiro, an international RPW expert, who prepared an action plan to establish and execute an RPW-IPM programme. A series of informative leaflets was issued, and more than 4 500 people received training on good practices to control the pest, surpassing the original goal of 750 trainees.

The final objective of collecting date palm genes in order to preserve them resulted in the establishment of one germplasm plot in Kharga Oasis in New Valley. The plot includes date palm varieties that meet the national and export markets and are of economic importance to Egypt. The plot also includes a collection of the best pollinators, which were identified through scanning and analysis. In addition, a database containing the genetic information of the varieties in the plot was developed.

IMPLEMENTATION OF WORK PLAN

Overall, the project's work plan was implemented successfully. Thanks to the high number of trainees that were reached, some of the project's initial capacity development goals were surpassed.

The only limitation was with regards to the establishment of the date germplasm pilot plots. The initial goal was to establish two. However, due to government security restrictions, it was only possible to establish one of these plots.

The project required one no-cost extension in order to accommodate the date palm season. This extension allowed for Training of Trainers (TOT) activities to be finalized and for the organization of the study trips to Tunisia and the United Arab Emirates.

FOLLOW-UP FOR GOVERNMENT ATTENTION

It is advised that continued financial support be provided in order to ensure the sustainability of the training centre and allow for the possible opening of training centres in other regions. Financial support for the RPW-IPM programme is recommended, which would help to ensure that the pest controls introduced through the project continue to be used, and the provision of loans would help individual farmers shift production from informal to formal sectors and markets.

The establishment of industrial clusters and logistic areas is encouraged, because it would enhance the organization of date collection in the areas of production and further strengthen the capacities of stakeholders. A contractual agriculture system to link farmers with date packinghouses and factories is also recommended. Finally, developing date palm specifications to comply with international regulations and standards necessary for export is another follow-up area that would greatly benefit the sector.

SUSTAINABILITY

1. Capacity development

The sustainability of project outcomes will be promoted by the newly established High National Council for Date Palm Sector Development, and by the newly established Governorate Council in New Valley, which is the largest production area for semi-dry dates. A date palm committee under the HEIA was established as well. The project also involved and increased the capacities of several existing national authorities and organizations that are committed to the sustainability of the results. These include the Central Laboratory for Date Palm, the Food and Agro Industry Technology Center (FAITC) and the Food Technology Research Institute (FTRI). The NGO *Id al Id* also supports dissemination of the knowledge generated through the project and promotes the revolving distribution of date palm offshoots.

2. Gender equality

Activities met the needs of both women and men stakeholders. As an indirect result of the project, some women increased their income because they started producing handicrafts with palm leaves.

3. Environmental sustainability

Dates are a water saving crop and they can tolerate harsh climatic conditions, which makes them highly suitable to grow in arid areas and contributes to the environmental sustainability of this project. Moreover, dates allow for the use of degraded land because they can be cultivated in salinized soil.



4. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

The project contributed to the creation of decent employment and entrepreneurship opportunities for various stakeholders involved in the date value chain. It also supported the empowerment and participation of farmers along the value chain, with the aim of promoting a fairer distribution of revenues.

5. Technological sustainability

The project introduced improved practices, tools and equipment. Their suitability to the project target areas was assessed by international experts and FAO technical officers through practical demonstrations. Evidence shows that project stakeholders and beneficiaries are implementing the improved practices using the tools and equipment provided. Hands-on training and study tours further enabled target beneficiaries to develop practical knowledge and be exposed to international good practices that are being replicated at national level. The project also raised the awareness of decision-makers and the private sector to build new factories and rehabilitate already existing ones, applying improved techniques and enhancing farm and factory standards to acquire international certifications (ISO 22000 and Ecocert Certification).

6. Economic sustainability

As a result of the project, the Government of Egypt, the private sector and foreign investors mobilized resources to conduct 16 feasibility studies, rehabilitate three date palm factories and establish eight new factories and one cooling facility. The project provided low-cost and affordable equipment with positive environmental impacts, e.g. a leaf shredder machine for the recycling of date palm leaves.

DOCUMENTS AND OUTREACH PRODUCTS

- ❑ Scientific material for training courses.
- ❑ Five publications on the most important date palm pests and diseases.
- ❑ Manual for the control of red palm weevil. FAO.
- ❑ Pruning & Pollination training materials. S El Sharabasy. Siwa. March 2017. 13 pp.
- ❑ Most common diseases affecting palm trees
 - M Kamal, Siwa, 9-10 May 2017, 28 pp.
 - M Kamal, Wahat, 23-24 May 2017, 28 pp.
- ❑ Bagging Process training materials. S. El Sharabasy. New Valley. July 2017. 5 pp.
- ❑ Stores disease Pest control training materials
 - M Kamal, New Valley, 1-2 August 2017, 12 pp.
 - M Kamal, Siwa, 8-10 August 2017, 12 pp.
- ❑ Harvesting Process training materials. S El Sharabasy. New Valley. September 2017. 9 pp.
- ❑ Protection training materials. M Kamal. Aswan. September 2017. 21 pp.
- ❑ Pest Control training materials. M Kamal. Wahat. September 2017. 9 pp.
- ❑ Pruning & Pollination training materials. S El Sharabasy. New Valley. March 2018. 13 pp.
- ❑ Pest Control training materials. M Kamal. New Valley. April 2018. 9 pp.
- ❑ Production (Pruning, thinning, curving, pollination, bagging & harvesting training materials)
 - S El Sharabasy, New Valley, 29 - 30 July 2018, 15 pp.
 - S El Sharabasy, Siwa, 1-2 August 2018, 15 pp.
 - S El Sharabasy, Aswan, 18 - 19 August 2018, 15 pp.
- ❑ Post-harvest training materials. A El Kady. Kafr El-Sheikh. October 2018. 23 pp.
- ❑ International Marketing training materials. T El Dawy. Beheira. October 2018. 23 pp.
- ❑ Cultivation and Production of Dates Palm (training manual). S El Sharabasy. Cairo. 2019. 115 pp.
- ❑ Protection from RPW (training manual). M Kamal. Cairo. 2019. 24 pp.



ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

Expected Impact	Increased and more regular incomes for Egyptian date growers, producers, traders and processors	
Outcome	Egyptian date farmers and date industrials consistently market good quality dates to the national and international markets, and main date varieties are collected in the field as genetic resources for the country	
	Indicator	<ul style="list-style-type: none"> – Date value chain stakeholders working in partnership and producing good quality dates in Siwa. – Two plots for conservation of indigenous date palm collections established.
	Baseline	<ul style="list-style-type: none"> – 0 – 0
	End Target	<ul style="list-style-type: none"> – Date sector stakeholders in Siwa Oasis starting to work in partnership. – Two pilot plots of date genotypes established. – Establishment of extension units in each Oasis (Siwa, El Kharga and Al Dakhla) to improve date quality.
	Comments and follow-up action to be taken	<p>The project achieved more than what was planned in its project document work plan, with the exception of establishing one pilot plot of date genotypes instead of two, due to government security restrictions in this area. Project achievements are further described below.</p> <ul style="list-style-type: none"> – Pollination machines (solution) and pollen extract machines were introduced in Egypt for the first time. – A training centre for date palm technical workers (known in Egypt as Nakhaleen), whose foundation stone was placed by the MALR and the New Valley Governor in October 2017, was established. – The first plot in Egypt for the conservation of indigenous date palm collections in Kharga Oasis, which will constitute a stock for future development of the sector, was established. – Exportable cultivars were introduced. – Sixty-six training courses and field days on offshoot planting, bunch management, irrigation and the use of fertilizers and date quality were implemented. The training courses were supported by the design of Gross Agricultural Product (GAP) manuals and pamphlets, and was delivered in partnership with the Agriculture Research Center (ARC), FAITC and FTRI. These trainings targeted 7 445 participants, including producers, labourers and extension agents in Al Bahariya Oasis, Aswan, Beheira, Kafr El-Sheikh, New Valley, Siwa and Wahat. The expected number of trainees was 2 080. The actual number of trainees was 7 445, therefore, the target was greatly exceeded. – The awareness of decision-makers and the private sector was raised to mobilize resources to conduct 16 feasibility studies, rehabilitate three date palm factories in New Valley, Orient and Siwa, and establish eight new factories in Ezzet, Jud, Korashy, New Nigma, Pira, Ragh, Shaly, Sphinx and Zahret, along with one cooling facility, and to enhance farm and factory standards to acquire international certifications (ISO 22000 and Ecocert). – New institutional bodies, such as the High National Council for Date Palm Sector Development, the Governorate Council in New Valley (the largest producing area of semi-dry dates), and the date palm committee under the HEIA were established. – Five publications on the most important date palm pests and diseases and a manual for control of the RPW under FAO copyright were prepared. – Four technical publication manuals on date palm pruning, pollination, thinning and curving were prepared. – The 2nd International Conference for Date Palms in cooperation with the Central Laboratory for Date Palms and MALR in Sharm El-Sheikh from 23 to 26 September 2018 was supported. – Three date palm festivals were organized in collaboration with the Khalifa International Award for Date Palm and Agricultural Innovation from 2016 to 2018. <p>It is recommended that the sustainability of the training centre for date palm technical workers in its temporary residence is ensured through financial support, and other training centres in the main date production areas are established, which are Aswan, Bahariya, New Valley, and Siwa Oasis.</p>

Output 1	Capacities of date growers and producers enhanced to improve farm productivity, produce good quality dates and meet market needs		
	Indicators	Target	Achieved
	<ul style="list-style-type: none"> – Producers trained on date palm GAP. – Labourers trained on date palm GAP. – Extensionists trained on date palm GAP. 	<ul style="list-style-type: none"> – 2 000 – 60 – 20 	Yes
Baseline	<ul style="list-style-type: none"> – 0 – 0 – 0 		
Comments	<p>Sixty-six training courses were implemented where 7 445 farmers, labourers and trainers were trained in Aswan, Behira, Kafr El-Sheikh, New Valley, Siwa and Wahat Baharya. This considerably exceeds the number of planned trainees. The list below provides details about training topics and participants.</p> <ul style="list-style-type: none"> – Three training events on pruning and pollination: i) Siwa – 69 participants; ii) New Valley – 136 participants; and iii) Wahat – 142 participants – Six training events on thinning, curving and fruit pest control: i) Siwa – 236 participants; ii) New Valley – 268 participants; iii) Wahat – 226 participants – Two Nakhaleen first training programmes for farmers: Siwa – 60 participants – Two Nakhaleen second training programmes for farmers: Siwa – 60 participants – Two field trainings for farmers and extensionists: Aswan – 356 participants – Three training events on bagging training for farmers: i) Siwa – 75 participants; ii) New Valley – 146 participants; iii) Wahat – 59 participants – Three training events on harvesting: i) Siwa – 92 participants; ii) New Valley – 102 participants; iii) Wahat – 89 participants – Two training events on pruning, pollination and pest control for Nakhaleen, extensionists and farmers: New Valley – 400 participants – Two demo plots for farmers and extensionists: New Valley – 115 participants – One training session on cultivation: Siwa – 60 participants – Sixteen training sessions on production, protection, post-harvest and marketing for Nakhaleen, farmers and traders: i) New Valley – 540 participants; ii) New Valley – 824 participants; iii) Wahat – 336 participants; iv) Aswan – 324 participants; v) Kafr El-Sheikh – 204 participants; vi) Beheira – 268 participants – Two training sessions on post-harvest and marketing for farmers and traders: Siwa – 168 participants – One TOT session with the Central Laboratory of Date Palm Development on improved date palm cultivation: 20 participants – 20 training sessions on improved date palm cultivation training for farmers: 2000 participants – Two training sessions on date processors with FTRI: New Valley – 30 participants – Two training sessions on date processors with FAITC: i) Siwa – 20 participants; ii) Al Bahariya Oasis – 20 participants <p>Total number of training sessions – 66 Total number of participants – 7445</p> <p>Equipment was distributed to local agricultural authorities in both Kharga and Dakhla Oasis to help farmers increase production and fight against RPW. The equipment distributed included a palm leaf shredder, two pollination machines, a pollen extract machine in New Valley, which is the first one in Egypt, fuel powered drills for the control of the RPW, five manual 15 litre sprayers, fifty RPW pheromone; twenty pheromones of <i>Ephestia Cautella</i> (two in New Valley, one in Wahat, one in Siwa and one in the Plant Protection Research Institute) and plastic bags to be utilized in the bagging process.</p>		
Activity 1.1	Assess the status of the sector and identify the main actors in the date value chain in Siwa		
	Achieved	Yes	
	Comments	The project assessed the current status of the sector and identified the main actors of the value chain in Siwa Oasis (report available). In addition, A TOT training on the development of the date palm value chain was organized in cooperation with the Central Laboratory for Date Palm, MALR, FAITC and FTRI to train a total of 2 090 agricultural engineers and specialists from Awan, Dakhla Oasis, Kharga Oasis and Siwa Oasis.	

Activity 1.2	Conduct trainings on improved date production and quality		
	Achieved	Yes	
	Comments	<p>A TOT for agricultural extension staff was organized for a group of 20 participants working in the date palm sector, including farmers, agricultural workers, extensionists, <i>Nakhaleen</i> and representatives from factories dealing with date palms. The training programme covered several areas related to pruning, pollination, curving, thinning, separation of offshoots, cultivation and planting in new lands. At a later stage, each TOT attendee trained more than 100 farmers. The training also included areas related to technology transfer to increase knowledge and awareness of the cultivation of date palms.</p> <p>The training:</p> <ul style="list-style-type: none"> – provided trainees with skills, experiences and hands-on learning to disseminate later to their peers and neighbouring farmers; – created new job opportunities in Siwa Oasis; <p>Establish two plots with drip irrigation systems in both the Oasis of Dakhlah and Kharga of the New Valley Governorate, in order to create a modern irrigation model.</p>	
Output 2	Capacities of date collectors and traders enhanced and organized to meet market needs, focusing on the harvest and handling of dates		
	Indicators	Target	Achieved
	<ul style="list-style-type: none"> – Study report on the type of date collectors in Siwa prepared, including their needs for capacity building. – Number of training courses on harvest and post-harvest management of dates implemented. 	<ul style="list-style-type: none"> – 1 – 4 	Yes
Baseline	<ul style="list-style-type: none"> – 0 – 0 		
Comments	<ul style="list-style-type: none"> – The project analysed and identified the current type and status of date collectors, in order to develop this important market linkage. – A full programme to link the date collectors with factories and packing units was designed. – The possibility of grouping the date collectors into several date collecting centres that are linked directly with the factories was analysed. – A programme to study all the tools, procedures and systems used in harvesting, transporting and handling of dates from the farm to the factory and/or market was designed. – The use of plastic crates was introduced and their economic benefit was demonstrated. 		

Activity 2.1	Analyse the current type of date collectors in Siwa and design and implement a programme to improve these important actors in the date value chain	
	Achieved	Yes
	Comments	<ul style="list-style-type: none"> – The results of the analysis on the date collection system can be summarized as follows: – Date packers and processors usually received their raw dates directly from farmers (85 percent) and collectors (15 percent). – 70 percent of the processors reported that they faced problems in receiving high quality dates either from farmers or collectors. – 90 percent of farmers and collectors usually delivered raw dates directly to the processing factory site, using plastic boxes provided by the factories for handling and transporting, but in some cases the factories used their own means of transportation to transport the dates from the farm to the factory. – 70 percent of the processors reported that they had their own means of transportation and that payment to farmers was made in cash upon receipt according to the known selling price, excluding what had already been paid by the factory to the farmer during the growing season. – The collectors used to collect the required quantities of dates from farmers upon agreement before the harvesting season (especially from distant places), using their own or the factories' plastic boxes for handling and covering transportation costs. – The price of dates depended on supply, demand, market needs, the cost of production, annual date production and the quality of the dates. In all cases, the date prices were guided by the set price of the New Valley Governorate, which was usually determined by the agreement between the farmers and the manufacturers, as well as the price of dates in Baharia Oasis. Some factories with high productivity used to pay an additional amount to encourage farmers to supply dates to their factories. <p>Follow-up actions:</p> <ul style="list-style-type: none"> – Facilitate loans and help farmers to convert to formal sectors, with the aim of maximizing the role of collectors as a vital part of the value chain to carry out key tasks, including primary sorting, fumigation and primary drying, and to facilitate their involvement in collecting other crops because of the short date palm season. – Develop specifications for specific grades of palm dates to comply with the international regulations and standards necessary for export, and organize the pricing process to be compatible with production costs and product quality (e.g. fruit size, appearance, colour, texture, cleanliness, food safety and freedom from defects such as sunburn, skin separation, insect damage, sugar migration to fruit surface and fermentation). – Encourage the establishment of clusters and logistic areas that will organize the collection of dates in the areas of production, which must include warehouses equipped with refrigeration and freezers, sorting lines, quality control laboratories and some modern packaging lines, which may be difficult for small and medium enterprises to get individually. – Encourage the contractual agriculture system and link farmers with date packinghouses and factories to help farmers technically and financially to apply good agricultural practices to reduce waste, increase productivity and improve quality.

Conduct training on harvest and post-harvest management of dates					
Activity 2.2	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #d9ead3; color: #555; font-weight: normal;">Achieved</th> <th style="background-color: #d9ead3; color: #555; font-weight: normal;">Yes</th> </tr> </thead> <tbody> <tr> <td style="background-color: #d9ead3; color: #555; font-weight: normal; vertical-align: middle;">Comments</td> <td> <ul style="list-style-type: none"> – A technical diagnosis questionnaire for date-processing factories and packinghouses with respect to post-harvest treatment, processing, marketing and exporting was designed. – A diagnostic study and assessment for ten date processing factories, packinghouses and post-harvest handling facilities in Siwa during the period from 11 to 14 February 2017 was conducted. – Data was collected and the situation was assessed in order to identify constraints. – Training on GAP for all processors, packinghouses and date factory representatives from Dakhlah Oasis, El Bahriyah Oasis, Kharjah Oasis and Siwa was conducted. – The curricula and handouts for the training courses that took place between 28 September 2017 and 23 October 2017 were designed and prepared. <p>The following training courses were conducted during that period:</p> <ul style="list-style-type: none"> - Good Hygienic Practices (GHP) (2 days) - Good Manufacturing Practices (GMP) (3 days) - HACCP basics (2 days) - Pest Control (2 days) - ISO 22000 – OHSAS 18001 – HALAL: understanding the requirements (3 days) - Preventive Maintenance for Date Processing Lines (2 days) - Date Fumigation and Storage (1 day) - Date Products Standards (2 days) - Date Processing Technology (3 days) - Date Packaging (1 day) - Quality Control and Laboratory Tests (2 days) <ul style="list-style-type: none"> – A workshop on exporting dates was held on 16 and 17 October 2017. – Field visits to farms and date processing factories for the international export consultant were carried out during the period from 18 to 21 October 2017. – The development of a study on the price trends of competitive products in international markets, providing an economic evaluation of the effects on the pricing policy was supported. – The development of a study of current and potential trade obstacles in current and potential markets was supported. – The curricula and the handouts for each training course in post-harvest treatment and marketing were designed and prepared. They covered the following topics: <ul style="list-style-type: none"> - Date Post-harvest Treatments: (date value chain, harvesting, field sorting, field sun-drying, pre-cooling, transportation to packinghouses, receiving, primary sorting/grading, fumigation, cold storing, cleaning/washing, preservation/drying, artificial ripening, dry varieties' wetting treatment, final sorting/grading, packing, storing packed dates and transportation/freight) (1 day). - International Marketing of Dates: (world trade map, market selection, branding and promotion in international markets, successful participation in international exhibitions - factoring and export risk insurance, trade missions, trade agreements and governmental support) (1 day). <p>Trained the staff of date processors and exporters on appropriate post-harvest technology, marketing and exporting as follows:</p> <ul style="list-style-type: none"> - Kharga Oasis, 29 to 30 July 2018, 22 participants - Dakhla Oasis, 31 July to 1 August 2018, 27 participants - Baharia Oasis, 2 to 3 August 2018, 24 participants - Siwa Oasis, 19 to 20 August 2018, 25 participants - Aswan, 8 to 9 September 2018, 35 participants - Kafr El-Sheikh, 8 October 2018, 38 participants - Rasheed, 11 October 2018, 45 participants <ul style="list-style-type: none"> – Manuals on post-harvest, processing aspects and marketing and exporting of dates to be used by date farmers and processors were prepared. – A study tour for seven participants representing packinghouses and date processing factories from Aswan, Borg El-Arab, Cairo, Dakhla Oasis, Fayoum, Kharga Oasis and Siwa to visit state-of-the-art packinghouses in Tunisia and the United Arab Emirates was organized. The study tours raised awareness among decision-makers and the private sector to enhance the performance and technology of packinghouses at national level. </td> </tr> </tbody> </table>	Achieved	Yes	Comments	<ul style="list-style-type: none"> – A technical diagnosis questionnaire for date-processing factories and packinghouses with respect to post-harvest treatment, processing, marketing and exporting was designed. – A diagnostic study and assessment for ten date processing factories, packinghouses and post-harvest handling facilities in Siwa during the period from 11 to 14 February 2017 was conducted. – Data was collected and the situation was assessed in order to identify constraints. – Training on GAP for all processors, packinghouses and date factory representatives from Dakhlah Oasis, El Bahriyah Oasis, Kharjah Oasis and Siwa was conducted. – The curricula and handouts for the training courses that took place between 28 September 2017 and 23 October 2017 were designed and prepared. <p>The following training courses were conducted during that period:</p> <ul style="list-style-type: none"> - Good Hygienic Practices (GHP) (2 days) - Good Manufacturing Practices (GMP) (3 days) - HACCP basics (2 days) - Pest Control (2 days) - ISO 22000 – OHSAS 18001 – HALAL: understanding the requirements (3 days) - Preventive Maintenance for Date Processing Lines (2 days) - Date Fumigation and Storage (1 day) - Date Products Standards (2 days) - Date Processing Technology (3 days) - Date Packaging (1 day) - Quality Control and Laboratory Tests (2 days) <ul style="list-style-type: none"> – A workshop on exporting dates was held on 16 and 17 October 2017. – Field visits to farms and date processing factories for the international export consultant were carried out during the period from 18 to 21 October 2017. – The development of a study on the price trends of competitive products in international markets, providing an economic evaluation of the effects on the pricing policy was supported. – The development of a study of current and potential trade obstacles in current and potential markets was supported. – The curricula and the handouts for each training course in post-harvest treatment and marketing were designed and prepared. 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The study tours raised awareness among decision-makers and the private sector to enhance the performance and technology of packinghouses at national level.
Achieved	Yes				
Comments	<ul style="list-style-type: none"> – A technical diagnosis questionnaire for date-processing factories and packinghouses with respect to post-harvest treatment, processing, marketing and exporting was designed. – A diagnostic study and assessment for ten date processing factories, packinghouses and post-harvest handling facilities in Siwa during the period from 11 to 14 February 2017 was conducted. – Data was collected and the situation was assessed in order to identify constraints. – Training on GAP for all processors, packinghouses and date factory representatives from Dakhlah Oasis, El Bahriyah Oasis, Kharjah Oasis and Siwa was conducted. – The curricula and handouts for the training courses that took place between 28 September 2017 and 23 October 2017 were designed and prepared. <p>The following training courses were conducted during that period:</p> <ul style="list-style-type: none"> - Good Hygienic Practices (GHP) (2 days) - Good Manufacturing Practices (GMP) (3 days) - HACCP basics (2 days) - Pest Control (2 days) - ISO 22000 – OHSAS 18001 – HALAL: understanding the requirements (3 days) - Preventive Maintenance for Date Processing Lines (2 days) - Date Fumigation and Storage (1 day) - Date Products Standards (2 days) - Date Processing Technology (3 days) - Date Packaging (1 day) - Quality Control and Laboratory Tests (2 days) <ul style="list-style-type: none"> – A workshop on exporting dates was held on 16 and 17 October 2017. – Field visits to farms and date processing factories for the international export consultant were carried out during the period from 18 to 21 October 2017. – The development of a study on the price trends of competitive products in international markets, providing an economic evaluation of the effects on the pricing policy was supported. – The development of a study of current and potential trade obstacles in current and potential markets was supported. – The curricula and the handouts for each training course in post-harvest treatment and marketing were designed and prepared. They covered the following topics: <ul style="list-style-type: none"> - Date Post-harvest Treatments: (date value chain, harvesting, field sorting, field sun-drying, pre-cooling, transportation to packinghouses, receiving, primary sorting/grading, fumigation, cold storing, cleaning/washing, preservation/drying, artificial ripening, dry varieties' wetting treatment, final sorting/grading, packing, storing packed dates and transportation/freight) (1 day). - International Marketing of Dates: (world trade map, market selection, branding and promotion in international markets, successful participation in international exhibitions - factoring and export risk insurance, trade missions, trade agreements and governmental support) (1 day). <p>Trained the staff of date processors and exporters on appropriate post-harvest technology, marketing and exporting as follows:</p> <ul style="list-style-type: none"> - Kharga Oasis, 29 to 30 July 2018, 22 participants - Dakhla Oasis, 31 July to 1 August 2018, 27 participants - Baharia Oasis, 2 to 3 August 2018, 24 participants - Siwa Oasis, 19 to 20 August 2018, 25 participants - Aswan, 8 to 9 September 2018, 35 participants - Kafr El-Sheikh, 8 October 2018, 38 participants - Rasheed, 11 October 2018, 45 participants <ul style="list-style-type: none"> – Manuals on post-harvest, processing aspects and marketing and exporting of dates to be used by date farmers and processors were prepared. – A study tour for seven participants representing packinghouses and date processing factories from Aswan, Borg El-Arab, Cairo, Dakhla Oasis, Fayoum, Kharga Oasis and Siwa to visit state-of-the-art packinghouses in Tunisia and the United Arab Emirates was organized. The study tours raised awareness among decision-makers and the private sector to enhance the performance and technology of packinghouses at national level. 				

Output 3	Capacities of date packers and processors in packinghouses and date factories enhanced and upgraded to meet market needs		
	Indicators	Target	Achieved
	<ul style="list-style-type: none"> – Training curricula designed. – Date processors and packers trained on good practices. – Training courses implemented. 	<ul style="list-style-type: none"> – 11 – 70 – 20 	Yes
Baseline	<ul style="list-style-type: none"> – 0 – 0 – 0 		
Comments	<p>Two contracts were signed with two training centres. The first was with FAITC under the Ministry of Industry in Egypt, which conducted a training course in Siwa and Wahat Baharya to 40 participants. The second was with the FTRI under the Agriculture Research Centre of the MALR, which conducted a training course in the New Valley (Dahakla and Kharga Oases) to 30 participants. The training topics included GHP, GMP3, hazard analysis and identification of critical control points, pest and rodent control in food factories, introduction to understanding the International Halal Certification, ISO 18000:2007 and ISO 22000:2005, understanding the legislation, specifications and policies related to the products relying on dates, precautionary maintenance to production lines, date fumigation, industrial technology of date products, the full packing and packaging systems of dates, etc.</p> <p>As a result of the awareness raised and the capacity built by the project, five factories in Siwa are now ISO 22000 certified and 260 farms in Siwa were granted the Ecocert Certification.</p>		
Activity 3.1	Assess the current status of date post-harvesting and processing in Siwa and implement a programme of improvement		
	Achieved	Yes	
Comments	<p>The main results of the assessment of date post-harvesting and processing in Siwa are described below.</p> <ul style="list-style-type: none"> – The total capacity of the factories' cold storage in Siwa was about 10 100 tons (representing about 50 percent of Siwa's date production), plus another 3 000 tons from private cold stores near farms (15 different stores × 200 ton average capacity). – The Siwa Governmental Date Factory operated a part of its cold stores with a total capacity of 750 tons per season for the account of others keeping 1 000 tons capacity for its special use. It dealt with nearly 700 farmers and suppliers per season from small farmers that stored only one to two tons per season, to medium farmers that stored 10 to 20 tons per season. Dates were stored at 3°C for approximately eight months starting from date harvesting season in September until before the month of Ramadan (the main season for the consumption of dates). The cost was 850 EGP (approximately 51 USD) per ton with the use of plastic boxes for farms or suppliers, and 1 000 EGP (approximately 60 USD) per ton if plastic boxes from the factory were required. – Semi-dry dates were the most common type of dates that was stored, fumigated, washed, partially dried, packed and placed into cold storage. – The factories' main products were whole packed dates in different sized packages, de-stoned and stuffed packed dates, chocolate covered dates, date syrup (dips) and minced compressed dates. – Date packers and processors used packages of different sizes depending on market demand. – Final packed products were directly marketed mainly through factory outlets in Siwa or other cities (Alexandria, Cairo and Matrouh) or through distributors from different places. A part of the final products were packed in distributors' packages to be supplied to different outlets, such as those of the Holding company of food industries – Ministry of Supply and Internal Trade, or supplied to other associations. – 80 percent of the factories reported a lack of special departments for marketing. 30 percent dealt with local distributors. – Only 1 550 tons were exported either directly by the factories that got ISO 22000 certificates (six factories) or through other exporters, while the other quantities were locally marketed as final products or raw dates. – 70 percent of the factories reported that they participated in international exhibitions and study tours arranged by international organizations or by the Ministry of Trade and Industry. 		

Activity 3.2	Provide training and one-on-one technical advice to existing date packinghouses, cold storage facilities and established processing factories.		
	Achieved	Yes	
	Comments	Two study tours were organized to enable six participants from Egyptian date palm factories to gain experience from state-of-the-art packinghouses in both Tunisia and the United Arab Emirates. The first study tour to Tunisia was organized from 25 November to 1 December 2018, while the second study tour was to the United Arab Emirates from 15 December to 21 December 2018, in collaboration with the Khalifa International Award for Date Palm and Agricultural Innovation.	
Output 4	Establish a pest management programme for Siwa Oasis with a focus on the Red Palm Weevil		
	Indicators	Target	Achieved
	– IPM action plans prepared. – Producers trained on IPM.	– 25 – 750	Yes
Baseline	– 0 – 0		
Comments	The project hired an international expert specialized in RPW control to collaborate with the project national consultant on developing a full IPM programme to eradicate the RPW in Siwa, which will be conducted according to the availability of funds.		
Activity 4.1	Establishment of a pest management programme focused on controlling the Red Palm Weevil		
	Achieved	Yes	
	Comments	Around 3 000 extension field workers and farmers were trained on the development of integrated control of RPW and date palm trees. The tools provided and used by the project were Electrap, a pheromone to control Almond Moth (<i>Ephestia Cautella</i>), drill used glassine and aggregation pheromone.	
Activity 4.2	Conduct training on date diseases and pest management (mainly RPW)		
	Achieved	Yes	
	Comments	<ul style="list-style-type: none"> – The project performed a training for more than 4 500 people (80 percent farmers and 20 percent extension staff) on the best practices to control RPW. – Continuous monitoring and follow-up of the RPW management programme in the Siwa and Wahat Bahareya Oases was put into place. Also, an action plan to establish and execute a RPW-IPM programme was prepared by Jose Romeno Faleiro, International RPW Expert. – A series of informative leaflets were issued as a fast guide to controlling RPW and date palm pests. Training on the management of RPW and date palm pests was conducted, covering all IPM strategies to control RPW and date palm pests. – The project provided training and several tools such as drills, Electraps and aggregation pheromone. A number of infested palm trees in Bahareya and Siwa were treated using the gasoline powered drills. – Moreover, a demonstration field experiment on the IPM programme of RPW and date palm pests was carried out. – A capacity building programme aimed at reducing pre-harvest losses and quality degradation from pest and diseases was designed. 	
Output 5	Date palm gene collections established in two date producing regions		
	Indicators	Target	Achieved
	– Germplasm collection plots established. – Surveys to identify potential varieties for national market and export conducted.	– 2 – 2	Partially
Baseline	– 0 – 0		
Comments	Only one contract was signed with the Agriculture Research Centre (ARC), Ministry of Agriculture and Land Reclamation (MALR) to establish a germplasm collection plot in Kharga Oasis, New Valley. The plot included date palm tree varieties that met the national and export markets and were of an economic importance to Egypt. The best collection of pollinators identified through the scanning and analysis operations undertaken were included in the germplasm plot, and a database to include all their morphological and production characteristics was developed. The Second Letter of Authorization (LoA) to establish a date germplasm collection in Siwa Oasis was not signed due to government restrictions.		
Activity 5.1	Establishment of date palm gene collections (two collections of female varieties and one collection of pollinators)		
	Achieved	Partially	
	Comments	As mentioned above, only one pilot date palm gene collection was established in Kharga Oasis in collaboration with ARC, MALR.	

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