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الجمهورية اللبنانية  
مكتب وزير الدولة لشؤون التنمية الإدارية  
مركز مشاريع ودراسات القطاع العام

FOOD AND AGRICULTURE ORGANIZATION OF THE  
UNITED NATIONS

République Libanaise  
Bureau du Ministre d'Etat pour la Réforme Administrative  
Centre des Projets et des Etudes sur le Secteur Public  
(C.P.E.S.P.)

WHEAT AND BARLEY SEED PRODUCTION IN LEBANON

Project TCP/LEB/8901/M

Terminal Report

By

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February 1981

MFN = 885

## WHEAT AND BARLEY SEED PRODUCTION IN LEBANON

### Project TCP/LEB/6901/M

#### Introduction and background information

Agricultural research activities in general, and seed production in particular, were almost totally interrupted in Lebanon for three years, starting in 1975, because of the tragic events which occurred in that year. Wheat and barley breeding and seed production programmes however, were resumed during the 1977-78 season when the situation improved. This resumption was initiated with the assistance of FAO provided through a small TCP project (6/LEB/02/M).

In order to accelerate the seed production programme, 55 tons of foundation seeds of the durum wheat variety Haurani were purchased from Syria, under the TCP project, for remultiplication during the 1977-78 crop season. Field control of this seed lot has shown, however, that it does not conform to the minimum standards required and the total seed lot had therefore to be rejected.\*

Concurrently however, the small basic seed stock already developed, and available at, the Agricultural Research Institute (ARI) before the onset of the events was increased at Terbol Research Station in the Bekaa Valley. This stock was of good quality and constituted the basis for rehabilitation of seed production in Lebanon.

#### Foundation seed production in 1978\*\*

The following quantities of foundation seeds were produced in 1978 under the TCP project 6/LEB/02/M.

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\* Y. Y. Klaimi: 17.6.1978. Seed Multiplication and Control of Haurani

\*\* Report by Y. Y. Klaimi dated 26.8.1978

	<u>Variety</u>	<u>Quantity (tons)</u>
<u>Wheat</u>	Haramoun	44.300
	Sannine	20.700
	Baalbeck	24.600
	Mexipak 65	2.300
	Jori C-69	8.500
	Haurani 27	5.900
	Total:	<u>106.300</u>
<u>Barley</u>	Beecher	16.550
	O. P. 25	<u>11.100</u>
	Total:	<u>27.650</u>
<u>Grand Total:</u>		<u>133.950</u>

Seed distribution and production in 1979

In order to encourage and further strengthen the efforts so far made towards the rehabilitation of seed production, FAO has renewed its assistance to the Government of Lebanon by sanctioning a new TCP project for 1979 (TCP/LEB/8901/M), with a total budget of 22,000 US dollars.

Under this project, seeds produced in 1978 were distributed to selected growers for remultiplication according to the following scheme:

Quantities of basic and foundation seeds distributed during the 1978/79 season

<u>Variety</u>	<u>Seed distribution (tons)</u>		
	<u>Basic</u>	<u>Foundation</u>	<u>Total</u>
Haramoun	1.9	22.3	24.2
Sannine	1.5	3.6	5.1
Baalbeck	0.5	5.7	6.2
Mexipak 65	1.2	1.2	2.4
Haurani 27	1.0	4.7	5.7
Jori C-69	1.0	7.5	8.5
Beecher (barley)	1.0	9.3	10.3
O. P. 25 (barley)	1.0	8.3	9.3
<u>Total:</u>	<u>9.1</u>	<u>62.6</u>	<u>71.7</u>

The 9.1 tons of basic seeds were contracted for multiplication by ARI in order to produce foundation seeds. The 62.6 tons of foundation seeds, however, were contracted by the Cereals and Sugar Beet Board (CSBB) for the production of certified seeds. By ministerial decision, the production control of all seed categories was assigned to the Agricultural Research Institute with the cooperation of FAO.

The quantities of seeds produced in 1979 (processed) were as follows:

<u>Foundation and certified seeds produced in 1979* (tons)</u>			
<u>Variety</u>	<u>Foundation seeds</u>	<u>Certified seeds</u>	
<u>Wheat</u>	Haramoun	51.300	406.210
	Sannine	31.000	
	Zaalbank	14.400	86.940
	Mexipak 65	31.600	28.560
	Jori C-69	7.300	151.510
	Haurani 27	15.200	18.200
	Stork'S	2.400	
	Total:	<u>153.200</u>	<u>691.420</u>
<u>Barley</u>	Beecher	16.500	97.200
	O. P. 25	13.800	3.010
	Total:	<u>30.300</u>	<u>100.210</u>
	<u>Grand Total:</u>	<u>183.500</u>	<u>791.630</u>

Certified seeds of the variety Sannine were actually produced (44.770 tons) but not contracted for processing because of some administrative complications. It can also be noticed that the durum wheat variety, Stork'S, was included for the first time in the multiplication/distribution scheme. This variety had already shown good yield performance and wide adaptation in many previous tests carried out in Lebanon and in other countries of the Near East Region. It was also felt necessary to widen the spectrum of released durum wheat varieties, so far including only Haurani 27 and Jori C-69.

It can be seen that, by 1979, (i.e. during the second year of re-initiation of activities) the seed production programme in Lebanon was firmly established, and about one thousand tons of seeds (foundation and certified), were available for multiplication and/or distribution during the 1979-80 season. Considering the abnormal and highly difficult working conditions in the country this achievement could not be made possible without the financial help provided under the two TCP projects: 6/LEB/02/M and TCP/LEB/8901/M.

From 1979 onwards the plans were set for a wider and more comprehensive activity on cereal seed production including cereal technology and seed certification. This follow-up activity is now being assumed through a new UNDP/FAO project on cereals seed production (LEB/78/007), which was approved in November 1979, and whose implementation started in January 1980. This project is for a 3-years period, 1980-82.

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\* Y. Y. Klaimi: 12.1.1980. Wheat and barley seed production in Lebanon.

Seed multiplication during the 1979-80 season

The target proposed for 1980 in the newly formulated UNDP/FAO project was to produce 200 tons of foundation seeds for remultiplication and 2000 tons of certified seeds for distribution to farmers. Since this project was not yet operating when the 1979-80 season started, all arrangements were made in order to meet this target under the TCP/LEB/8901/M project scheduled to terminate by the end of 1979. The following quantities of basic and foundation seeds were therefore distributed to selected growers under contract for remultiplication during the 1979-80 season.

Basic and foundation seeds (tons) distributed for multiplication during the 1979-80 season

	<u>Variety</u>	<u>Basic seeds</u>	<u>Foundation seeds</u>
<u>Wheat</u>	Haramoun	2.300	48.000
	Sannine	1.000	23.500
	Baalbeck	1.000	9.100
	Mexipak 65	1.000	24.900
	Jori C-69	1.500	6.000
	Haurani 27	1.200	14.300
	Stork's	1.000	1.400
	Total:	<u>9.000</u>	<u>127.200</u>
<u>Barley</u>	Beecher	0.800	15.000
	O. P. 25	0.800	7.400
	Total:	<u>1.600</u>	<u>22.400</u>
Grand Total:		<u>10.600</u>	<u>149.600</u>

As in the previous year, production of foundation seed was financed by ARI whereas production of certified seed was financed by CSBB. The production control of both seed categories was assumed by ARI in cooperation with FAO.

It should be mentioned here that the field and laboratory control of seed production during 1980 was made possible through the involvement of the TCP project, TCP/LEB/8901/M. Indeed, although this project was supposed to terminate by the end of 1979, a special authorization was obtained from FAO headquarters to utilize the savings made (13,000 USD) to help implementing the new UNDP/FAO project on cereals seed production, LEB/78/007. It is because of these savings which were mainly paid as incentives to seed controllers and as immediate cash for solving urgent problems and removing bottlenecks that the 1980 campaign was successfully completed and that the cereals seed production project, LEB/78/007, was normally implemented.

In order to substitute for this highly needed financial flexibility under the present difficult circumstances, which was provided by the TCP project, the UNDP/FAO project has now been revised to include a government cash contribution amounting

to 50,000 Lebanese pounds a year. This money, yet to be paid to UNDP, is highly required at present for the normal implementation of the various project activities.

The following quantities of foundation and certified seeds were obtained in 1980 under the UNDP/FAO project, LEB/78/007, and the financial contribution from the TCP/LEB/8901/M project.

Foundation and certified seeds (tons) obtained in 1980 under the projects LEB/78/007 and TCP/LEB/8901/M

	Variety	Foundation seed (processed)	Certified seed (unprocessed)
<u>Wheat</u>	Haramoun	38.000	615.120
	Sannine	17.700	332.280
	Baalbeck	11.500	144.120
	Mexipak 65	16.500	134.560
	Haurani 27	10.200	81.350
	Jeri C-69	24.200	20.750
	Stark'S	12.100	40.130
	Total:	<u>130.200</u>	<u>1368.310</u>
<u>Barley</u>	Beecher	12.750	211.940
	O. P. 25	9.700	52.320
	Total:	<u>22.450</u>	<u>264.260</u>
	Grand Total:	<u>152.650</u>	<u>1632.570</u>

#### Distribution of certified seeds to farmers

The principal and ultimate objective of any seed production project is the propagation of seeds from improved varieties of agricultural crops, and their distribution or sale to farmers for utilization in place of the traditional, low yielding varieties.

As far as production is concerned the FAO project, TCP/LEB/8901/M, has fully achieved its objective, and already in 1979 approximately 800 tons of certified seeds alone of wheat and barley were available for distribution in the country. However, because of delay in contracting the processing of certified seeds on the part of CSBB, which resulted in that the seed was not made available at the right time for sowing, and also because of delay in the Board of Ministers' decision defining the terms for seed distribution, purchase and sale for the 1979-80 season, only about 25% of the certified seeds produced could actually be distributed to farmers, as shown below.

It should be mentioned here that out of the total seed distribution, about 50% (or 100 tons) were distributed to small farmers in South Lebanon in spite of the war situation in this part of the country. This was possible thanks to the full par-

ticipation of the Mennonite Central Committee, a non-profit and social organization helping the farmers in South Lebanon.

Distribution of certified seeds to farmers in 1979

<u>Variety</u>	<u>Quantity (tons)</u>				
	<u>Distributed</u>			<u>Available</u>	<u>Remaining</u>
	<u>Bekaa</u>	<u>South</u>	<u>Total</u>		
<u>Wheat</u>					
Haramoun	11.480	24.000	35.480	406.210	370.730
Baclback	7.980		7.980	86.940	78.960
Mexipak 65	10.360		10.360	28.560	18.200
Jori C-69	28.840	26.000	54.840	151.510	96.670
Kaurani 27	13.890		13.890	18.200	4.310
	<u>72.550</u>	<u>50.000</u>	<u>122.550</u>	<u>691.420</u>	<u>566.870</u>
<u>Barley</u>					
Beecher	42.600	50.000	92.600	97.200	4.600
O. P. 25	2.900		2.900	3.010	0.110
	<u>45.550</u>	<u>50.000</u>	<u>95.550</u>	<u>100.210</u>	<u>4.710</u>
Grand Total:	<u>118.050</u>	<u>100.000</u>	<u>218.050</u>	<u>791.630</u>	<u>573.580</u>

For the 1980-81 season the seed distribution situation was even more problematic.\* During this season, no certified seeds were practically distributed or sold to farmers (except for the 50 tons of wheat distributed in the South by the Mennonite Central Committee from the 1979 harvest) in spite of the fact that close to 2000 tons were actually produced. Also, the multiplication of foundation seeds could not be contracted on time by the CSBB. Therefore, the 1981 target of producing 3000 tons of certified seeds, as projected in the follow-up UNDP/FAO Project LEB/78/007, will not be realized. The demand for seeds by farmers was actually very high but these demands could not be satisfied because of similar administrative reasons as for the previous year (delay in seed processing and in the proper decision by the Board of Ministers).

Only the distribution under contract of basic seeds (for the production of 300 tons of foundation seeds in 1981) which is the responsibility of the Agricultural Research Institute, could be implemented in time. This was possible due to the greater financial and administrative flexibility enjoyed by this autonomous institution.

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\* Y. Y. Klaimi: Six-Monthly Progress Report (July-December 1980),  
Project LEB/78/007

### Importance of the assistance provided by FAO

The two small-scale FAO/TCP projects, 6/LEB/02 M for 1978 and TCP/LEB 8901 M for 1979 (extended through 1980), have fully achieved their objective of rehabilitating wheat and barley seed production in Lebanon, in cooperation with the Agricultural Research Institute and the Cereals and Sugar Beet Board. Within three years (1978-80) cereal seed production was not only reestablished on firm grounds in the country, but also attained a level hardly ever exceeded before the events. During this period indeed, seed production jumped from none to about 2,000 tons, as indicated previously. Also, the target of producing 3,000 tons in 1981 (as proposed under the follow-up UNDP/FAO Project LEB/78/007) could have easily been achieved had the foundation seeds, produced and processed for that purpose in 1980, been distributed on time for remultiplication.

FAO assistance was provided mainly in two forms: technical and financial. The technical guidance was assumed by the Regional Field Food Crops Improvement Officer, Dr. Y. Y. Klaimi, who was assigned the responsibilities of implementing both TCP projects. He is also now in charge of implementing the follow-up project LEB/78/007.

The financial assistance provided under TCP, although not very substantial, was however instrumental in the sense that it allowed for the necessary flexibility for intervention when required. Constraints and difficulties were indeed (and still are) enormous and often encountered with under the abnormal situation prevailing in the country in general, and at the project site in Tel-Amara, in particular. It is only fair to mention that without this financial assistance and the active participation of the Technical Assistants of the Plant Breeding Department at ARI, the results obtained under the FAO/TCP projects could not have been achieved.

### Follow-up activities

The success realized under the FAO/TCP projects laid the foundations for more permanent and more comprehensive activities encompassing seed production to include cereal breeding, seed certification and seed technology. These activities are now being implemented under the new follow-up UNDP/FAO project LEB 78/007, formulated by FAO on the request of the Lebanese Government, and approved by all concerned parties in November, 1979. The implementation of this 3-years project started in January 1980, with financial support from the extended TCP LEB 8901 M.

The new "Cereals Seed Production" project aims at reaching the production of 4,000 tons of certified seeds by 1982, a quantity sufficient to satisfy the needs of the Lebanese farmers. Export of seeds to neighbouring countries is also envisaged. In addition, a seed technology and seed certification laboratory is being equipped under this project. Most of the equipment has already been received at the project site in Tel-Amara, but it is being temporarily kept in storage while waiting for the needed laboratory repair and restoration works to be done.



### Major constraints

The major difficulties encountered during the implementation of the FA TCP/LEB/8901/M, and which continue to hinder the implementation of up project LEB/78/007, arise from the continuing disturbances in the c render the working conditions highly abnormal.

As mentioned earlier, the two small-scale TCP projects have not only their objectives as far as production of seeds is concerned, but have c the targets proposed in spite of all difficulties. It is downstream howe constraints and bottlenecks were, and continue to be, encountered. The high quality seeds produced every year are meant to reach the fa be used by him for better and more production. It is this very goal, l is not attained because of hindering administrative routine.

There is almost always a difficulty of some kind to have an action tak right time. The seed reception committee may not be designated on ti CSBB, or its members (who generally live far outside the seed product very area) may not attend to their duty because of security reasons or lack of funds.

Very often it is the absence of a decision, to be taken by the Board which delays the whole process (i.e. seed purchase and sale price fix distribution policy, etc.). Sometimes, the contract for processing the is not passed at the right time by the CSBB, if ever passed at all; co seed is either processed too late in the season (case of 1979) or even at all (case of 1980).

Whatever may be the reason, the end-result is the same: an important improved wheat and barley varieties (over 2,000 tons) is now available try, but it is beyond the reach of farmers because of rigid administrati cal routine. Also, an increasing reluctance to grow seeds under contr be noticed among farmers because of the above constraints, and becau they experience every year in getting paid for their seed stock deliver have not yet been paid in March 1981, for example, for the stocks th delivered in July of 1980. If such a situation continues, it is understo farmers will gradually loose their interest in growing seeds under contr that the bonus they get in compensation for their obligations (20%) is encouraging.

### Recommendations

The following recommendations are made in order to improve the seed programme in Lebanon:

1- Some decentralization in decision-taking is highly necessary in orde timely execution of the seed production operations. The Board of /Mini