

الملاحق

Annexes

كميات تصريف المياه في وادي الاردن *

<u>الموقع</u>	<u>الكمية</u>	<u>المجموع</u>
تصريف النهر في موقع الحاصباني في موقع قرب دان	١٣٠	١٣٠ مليون م ٣ بالسنة
الجريان من الاعلى	١٣٠	من الحاصباني
الجريان في سيول حول الحاصباني	٢٣	
من دان	٢٥٨	
من بانياس	١٥٧	٥٧٢ مليون م ٣ بالسنة
في موقع جسر بنات يعقوب	٥٧٢	
الجريان من الاعلى	١٣٠	
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الرصيد	٦٤٠	
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في موقع التقاء اليرموك والاردن	٥٣٨	١٠١٣ مليون م ٣ بالسنة
من الاعلى	٤٧٥	او ١٣٧٥ مليون بدون تبخر

* حسب دراسات مؤسسة نثازمين الامريكية

في موقع جسر النبي

من الاعلى

الجريان الدائم

الجهة الشرقية

١٠١٣

١٥

وادي عرب

٨

وادي زقلاب

١١

وادي الجرم

٥

وادي اليابس

٦

وادي كفرنبجة

٥

وادي راجب

٤٥

وادي الزرقاء

١٠٥

١٠

وادي شعيب

الجهة الغربية

٦٧

ينابيع بيسان

٤٥

وادي الفارعة

١٢٧

١٥

وادي العوجه

الجريان الفائض من المناطق المتوسطة

النتيجة عن انشاءات معتدلة الحجم

٤٥

من الشرق

٧٤

٢٩

من الغرب

١٣١٩

الجريان الفائض والجريان من مناطق

متوسطة غير معتبرة .

١٦٣

١٤٨٢

ناقص كميات المياه المستهلكة (باعتبار

(الجريان الدائم)

المجموع

في موقع المدخل للبحر الميت

الجريان من الاعلى

جريان دائم

من الشرق

وادي كفرين

وادي رامسا

من الغرب

وادي القلط

ينابيع اريحا

٢٣٩-
١٩٥٠
١٢٥٠

١٢
٦
١٨

٣

١٨
١٥

١٢٨٦

ناقص الاستعمال الحالي

(باعتبار الجريان الدائم)

١٢٥٠

٣٦-

ان هذه الارقام مستندة الى دراسة قامت بها الشركة الهندسية الامريكية تشازمين من مدينة بوسطن تحت اشراف سلطة وادي تينيس في عام ١٩٥٣ ولكن لنا على هذه الدراسة الملاحظات الرئيسية التالية :

أ - التبخر في منطقة الحولة وقدره ٦٢ مم قد تلاشى بعد تجفيف المنطقة وتستعمل هذه الكمية من المياه لاغراض الزراعة والشرب المختلفة في المنطقة ، ولذلك يجب عدم طرح هذه الكمية عند حساب التصرفات .
ب - التبخر في منطقة طبريا وقدره ٣٠٠ مم يبدو مبالغاً فيه استناداً الى مساحة البحيرة ومعدل صافي التبخر السنوي .

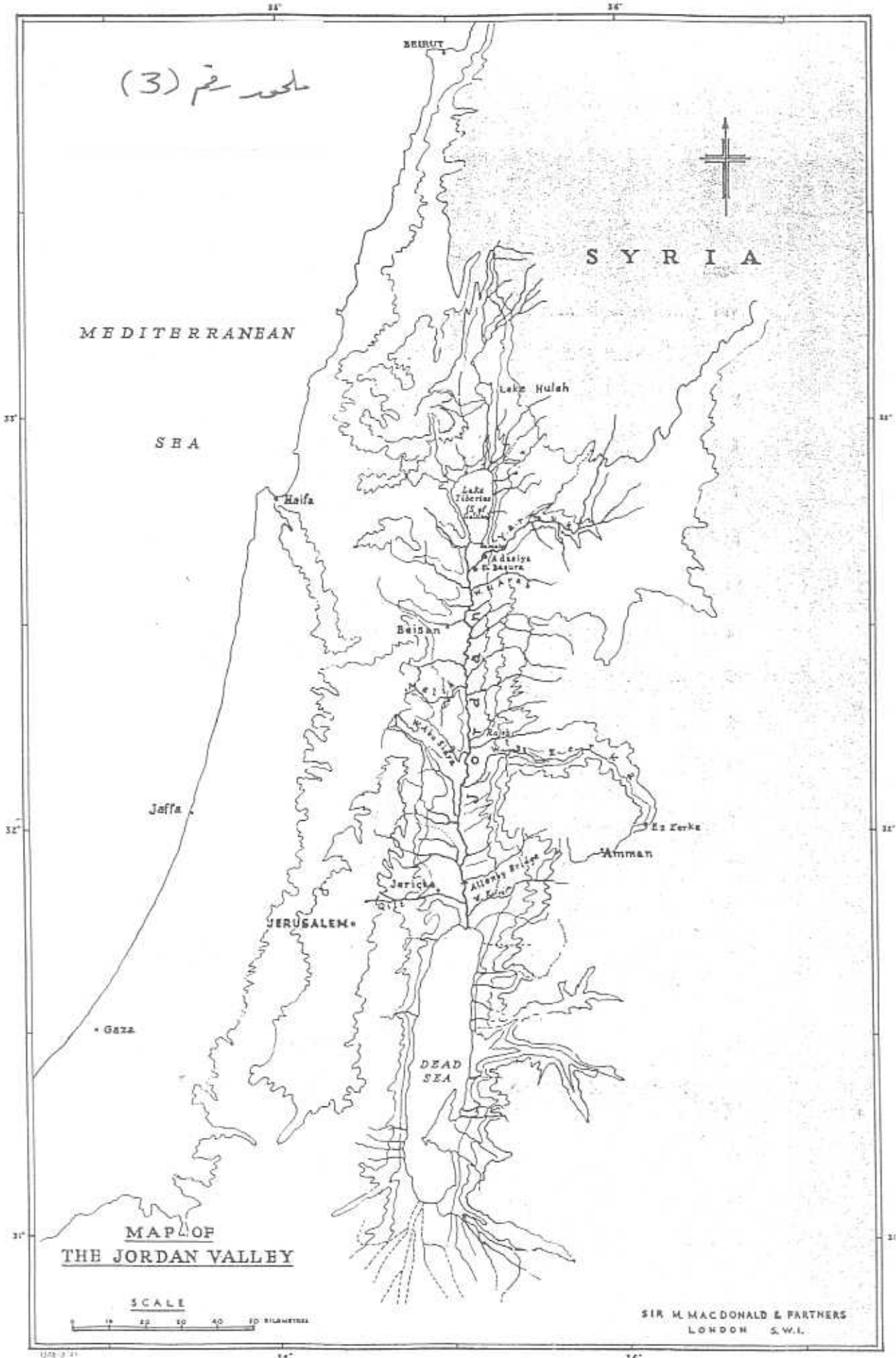
ج - تصرف وادي الفارعة في الضفة الغربية الاساسي هو ٢٠ مم حسب سجلات طيلة ثلاثين عاماً يضاف لها مياه الفيضان فيبلغ مجموع التصرف ٢٥ مم فقط وليس ٤٥ مم حسبما ورد .

SUBDIVISIONS AND WATER BALANCE OF JORDAN RIVER SYSTEM

<u>Source</u>	<u>Country</u>	<u>Flow (MCM/YR)</u>		
		<u>Gain</u>	<u>Loss</u>	<u>Total</u>
1. Upper Jordan				
(a) Dan	Israel	245		
(b) Hasbani	Lebanon	138		
(c) Banias	Syria	121		
2. Jordan in Huleh Valley				504
3. Irrigation in Huleh Valley	Israel		-100	
4. Local runoff Huleh to Jisr Banat Yaqub	Israel/ Syria	140		
5. Flow into Lake Tiberias				544
6. In Lake Tiberias				
(a) Local runoff	Israel/ Syria	70		
(b) Rainfall over Lake	Israel	65		
(c) Springs in and around Lake	Israel	65		
7. Evaporation over Lake Tiberias	Israel		-270	
8. Outflow to lower Jordan				474
9. Yarmuk	Syria/ Jordan	92		966
10. Wadis and springs in Ghor	Jordan/ Israel	505		1471

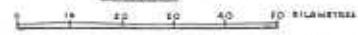
Source: Smith (1966), as revised from Main Plan and Hydrological Year-Book of Israel (1946-1960).

ملحوظ رقم (3)



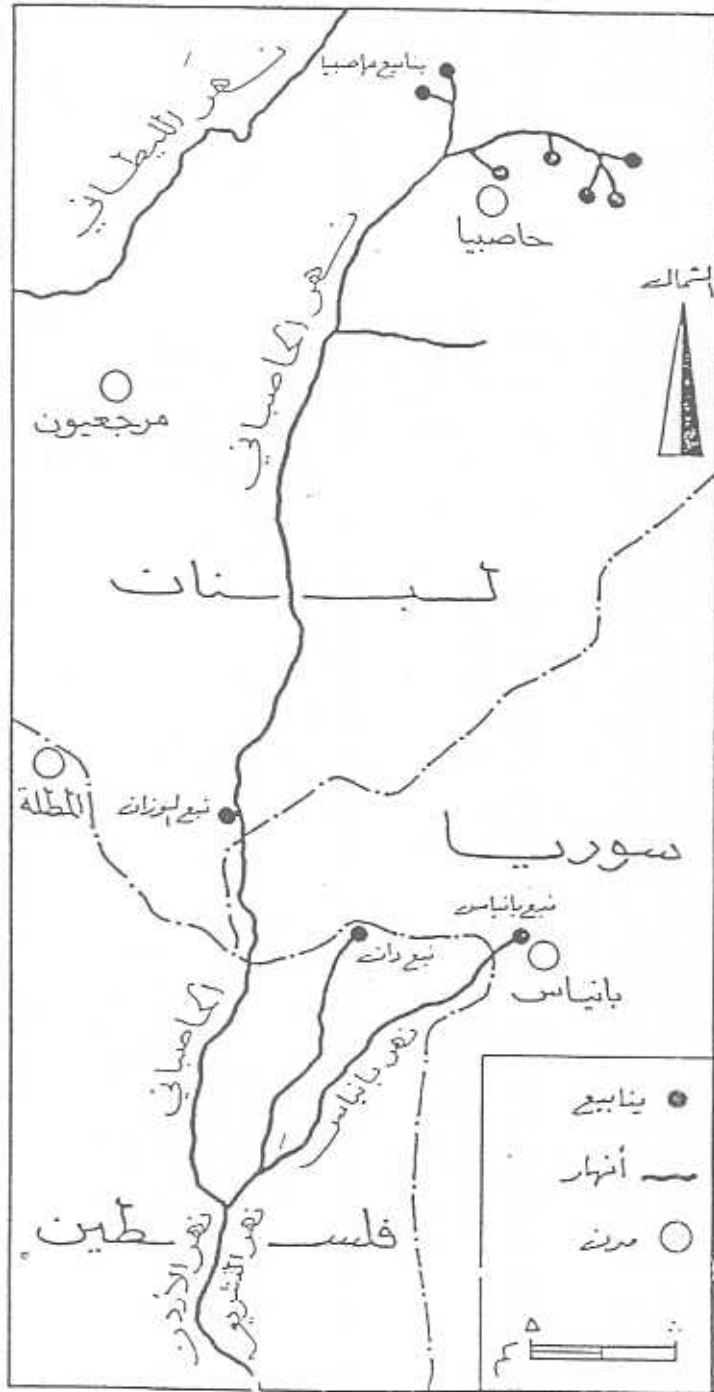
MAP OF THE JORDAN VALLEY

SCALE



SIR M. MACDONALD & PARTNERS
LONDON S.W.1.

الخارطة رقم (4)



روافد نهر الاردن

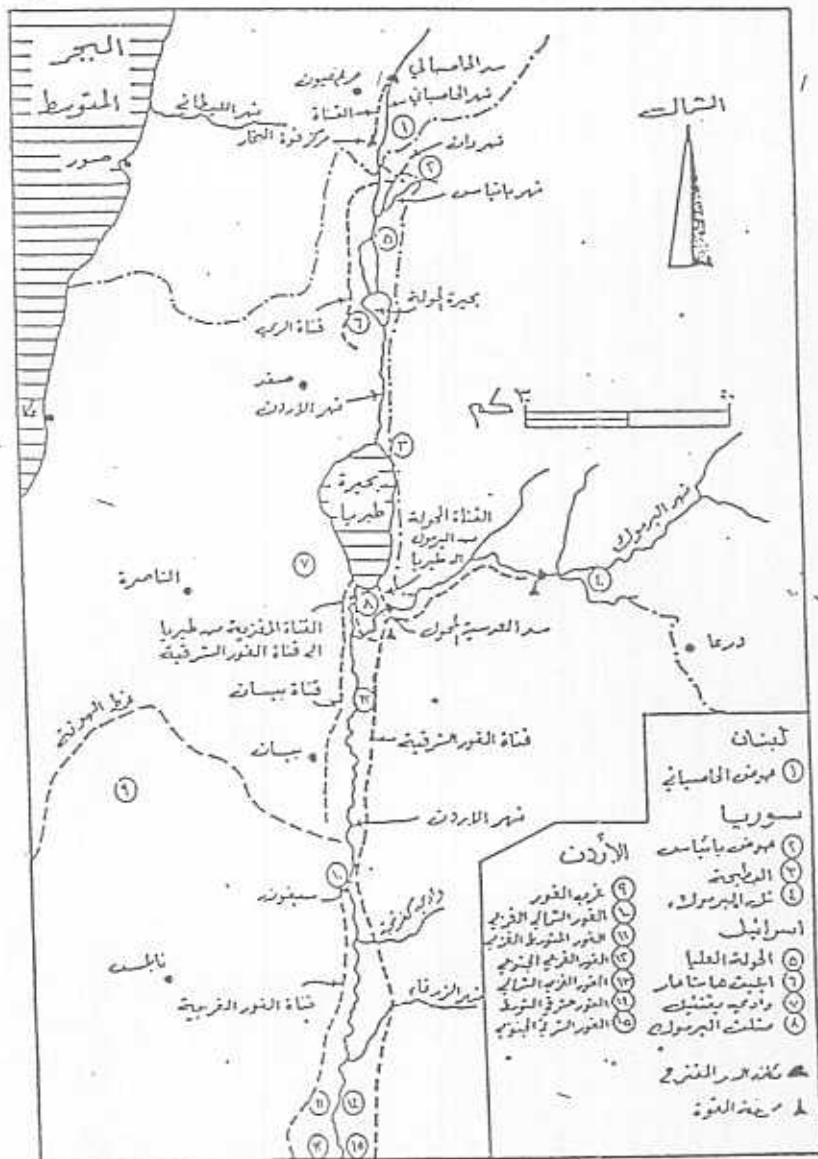
عن ابو قحزة ووردت في سنة ١٩٨٧ م

طبعة رقم (5)

DEVELOPMENT SCHEMES FOR JORDAN RIVER SYSTEM

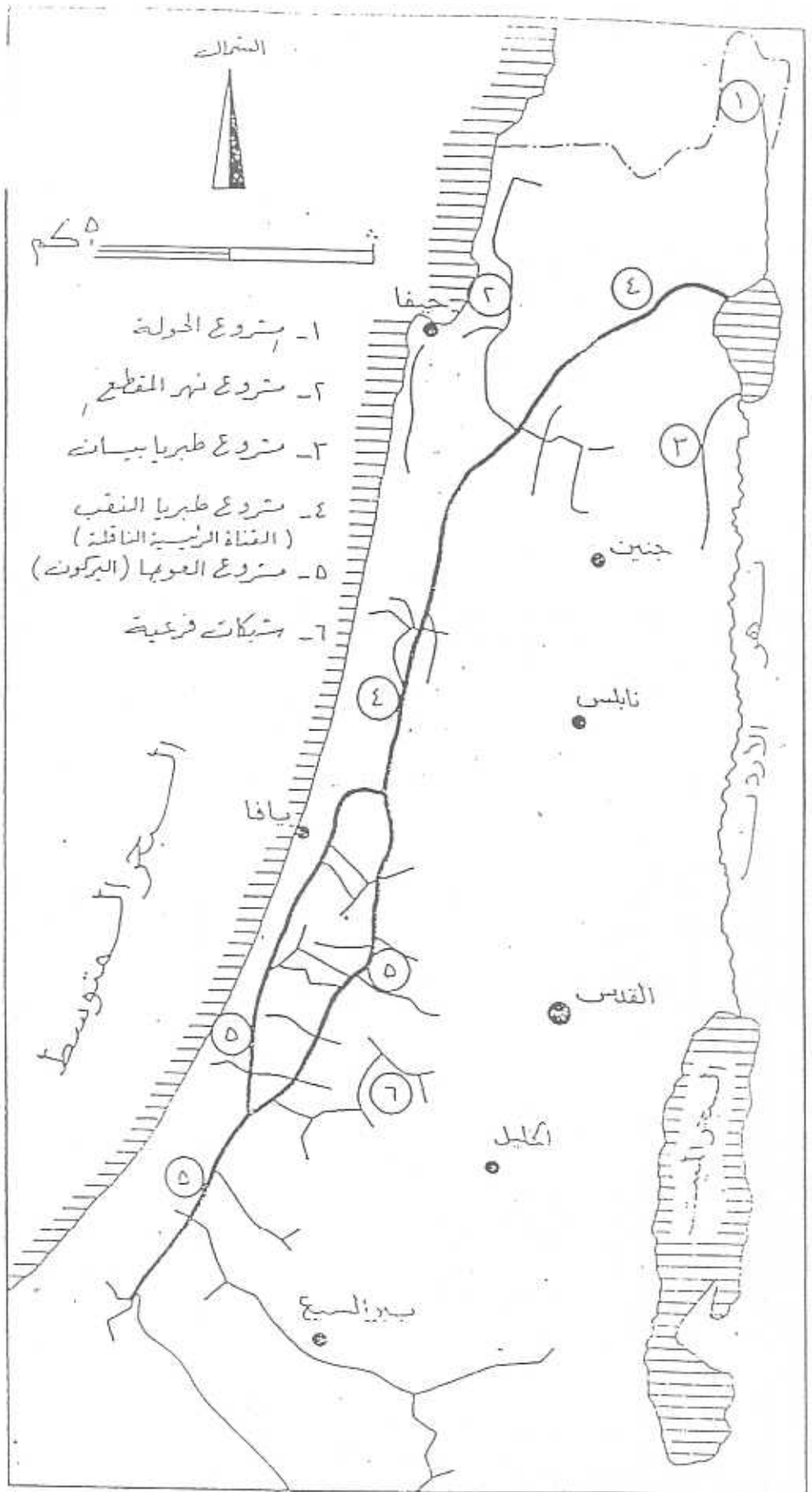
<u>Year</u>	<u>Plan</u>	<u>Sponsor</u>
1913	Franghia Plan	Ottoman Empire
1922	Mavromatis Plan	Great Britain
1928	Henriques Report	Great Britain
1935	Palestine Land Development Company	World Zionist Organization
1939	Ionides Survey	Transjordan
1944	Lowdermilk Plan	U.S.A.
1946	Survey of Palestine	Anglo-American Committee of Inquiry
1948	Hays-Savage Plan	World Zionist Organization
1950	MacDonald Report	Jordan
1951	All Israel Plan	Israel
1952	Bunger Plan	Jordan/U.S.A.
1953	Main Plan	UNRWA
1953	Israeli Seven-Year Plan	Israel
1954	Cotton Plan	Israel
1954	Arab Plan	Arab League Technical Committee
1955	Baker-Harza Plan	Jordan
1955	Unified (Johnston) Plan	U.S.A.
1956	Israeli Ten-Year Plan	Israel
1956	Israeli National Water Plan	Israel
1957	Greater Yarmuk Project (East Ghor Canal)	Jordan
1964	Jordan Headwaters Diversion	Arab League

خارطة رقم (7)



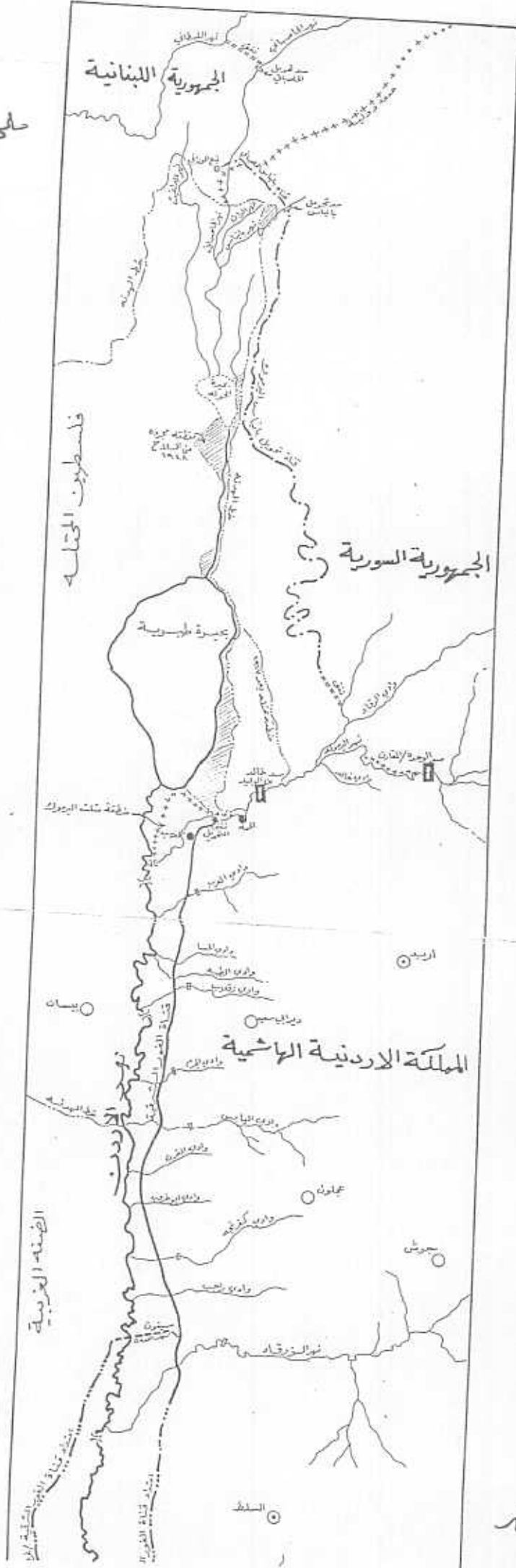
المشروع العربي لاستثمار نهر الأردن وروافده

١١٦٠ م. م. م. م. م.



الخامس المائبة الصهيونية

طبعة رقم (9)



مشروع تحويل راندو
الأردن (العرب)

1(9) *مردود*

WATER ALLOCATIONS TO RIPARIANS OF JORDAN RIVER SYSTEM
(in million cubic meters/year)

<u>Plan/Source</u>	<u>Lebanon</u>	<u>Syria</u>	<u>Jordan</u>	<u>Israel</u>	<u>Total</u>
Main Plan	nil	45	774	394	1213
Arab Plan	35	132	698	182	1047
Cotton Plan	450.7	30	575	1290	2345.7
Unified (Johnston) Plan					
Hasbani	35				35
Banias		20			20
Jordan (main stream)		22	100	375*	497*
Yarmuk		90	377	25	492
Side wadis			243		243
	—	—	—	—	—
Total Unified Plan	35	132	720	400*	1287*

Note: The Cotton Plan included the Litani as part of the Jordan River System. Different plans allocated different amounts in accordance with differing estimates of the resources of the system. One major variable in the reporting of the planned allocations is the amount of ground water included in the estimates.

* According to the compromise "Gardiner Formula," the share to Israel from the main stream of the Jordan was defined as the "residue" after the other co-riparians had received their shares. This would vary from year to year, but was expected to average 375 MCM.

مصاريف استنفول مياه نهر الأردن

لحم رقم (5) ن

مصاريف استنفول مياه نهر الأردن		الخصيص		الكسب		مصاريف (الأراضي)		بلد	
		%		%		الف دونم			
٨٤	٥٥٥	٨٤	١٠٨٧	الاردن		٣٥٥- ش		السير مردوخ	للسنة ١٩٥٠ مرفق رقم (٢)
٦٤-	٢٥٥					٢٠٠- غ		الغدونا ل	
٣٦-									
١٦	١٠٤	١٦	٢٠٧	اسرائيل					
١٠٠	٦٥٩	١٠٠	١٢٩٤	المجموع					
٥٣	٤٩٠	٦٣	٨٢٩	الاردن		٢٩٦- ش		جونستون الدولي	
٦٠	٢٩٦	٣٥	٥٠	سوريا		١٩٤- غ		(الموحد)	
٤٠	١٩٤	٣٥	٤٢٧	لبنان		٣٠		للسنة ١٩٥٣	
٢٥	٣٠	٣٥	٤٢٧	اسرائيل		للشيء		مرفق رقم (٣)	
للشيء	٤١٦	٣٣				للشيء			
٤٤	٤١٦	١٠٠	١٣٠٦	المجموع					
٥٦	٤٩٠	٦٨	٩١١	الاردن		٢٩٦- ش		العربي المصاد	
٦٠	٢٩٦	٥٩	٥٣٨	سوريا		١٩٤- غ		للسنة ١٩٥٤	
٤٠	١٩٤	٤١	٣٧٣	لبنان		٩		مرفق رقم (٤)	
١٤	١١٩	٩	١٢٠	اسرائيل		٣			
٤	٣٥	٣	٣٢			٢٠			
٢٢	٣٣٤	٢٠	٢٧٠	المجموع					
١٠٠	٨٧٨	١٠٠	١٣٣٣						
٤٤	٥٢٠	٥٠	٧٢٠	الاردن		٣٦٤- ش		جونستون المعدل	
٧٠	٣٦٤	٧٠	٥٠٠	سوريا		١٥٦- غ		للسنة ١٩٥٥	
٣٠	١٥٦	٣٠	٢٢٠	لبنان		٩		مرفق رقم (٦)	
١٤	١١٩	٩	١٣٢	اسرائيل		٢			
٤	٣٥	٣٩	٣٥			٣٩			
٣٨	٤١٦	١٠٠	٥٦٧	المجموع					
١٠٠	١٠٩٠	١٠٠	١٤٥٤						
٧٧	٥٢٠	٨٢	٧٦٠	الاردن		٣٦٤- ش		العربي الموحد	
١٧	١١٩	١٤	١٣٢	سوريا		١٥٦- غ		للسنة ١٩٦٠	
٦	٣٥	٤	٣٥	لبنان		٩		مشروع اليرموك	
١٠٠	٦٧٤	١٠٠	٩٢٧	المجموع				مرفق رقم (٧)	

ملاحظة : ش - الفضة السريه
غ - الفضة الغريه

المساحة (9) د

Table 3. Comparison of TVA Plan of 1953 and Arabs Plan of 1954, for Utilization of waters of River and its Tributaries

Country and Districts(b)	1000 dunams irrigated:		Water Duty cu. m.		Million Cubic Meters Water Supplied Annually for Irrigation(e)					
	TVA Plan	Arabs Plan	TVA Plan	Arabs Plan	Total	TVA Plan	Arabs Plan	Total	Wadis and Rivers	Wadis and Rivers
			per year			Wadis and wells				
Israel, total	936	878			1,305	382	923	1,429	382	1,047
Upper Suleh	416	234			426	105	321	287	105	182
Ayelet Hashahar	71(c)	78(c)	770	770	61	-	61	66	-	66
Karneel Valley	30	30	890	890	30	-	30	30	-	30
Lower Galilee	22	22	930	930	20	20	-	20	20	-
Kinda - Beit Alfa	113	-	780	-	98	-	98	-	-	-
Yarmuk triangle	91	-	930	-	95	-	95	-	-	-
W. Ghor, north	11(d)	26(d)	1,330	1,330	17	-	17	45	-	45
Jordan, total	78(e)	78	1,330	1,330	105(e)	05	20	126	85	41
W. Ghor, north	490	490			829	277	552	975	277	698
W. Ghor, central	29(e)	29	1,330	1,330	43(e)	4	39	43	4	45
W. Ghor, south	67	67	1,440	1,440	102	53	47	119	55	64
E. Ghor, north	98	98	1,868	1,868	197	40	157	233	40	193
E. Ghor, central	74	74	1,330	1,330	101	69	32	120	69	51
E. Ghor, south	127	127	1,440	1,440	195	71	124	229	71	158
W. Ghor, south	95	95	1,860	1,860	191	38	153	225	38	187
Syria, total	30	119			50	-	50	132	-	132
Yarmuk Plateau(Mzerib)	30	68(f)	1,500	1,500	50	-	50	80	-	80
Benias Valley	-	20	-	-	-	-	-	20	-	20
El Zoteha	-	22(g)	-	-	-	-	-	22	-	22
Yarmuk below Jaqarin	-	9	-	-	-	-	-	10	-	10
Lebanon, total	-	35	-	-	-	-	-	35	-	35
Hashani Valley	-	35	-	-	300	-	-	35	-	35

الملحمة رقم (9) س

مختص الاعمال الفورية
لتحويل روافد نهر الاردن

المصدر	الاعمال الرئيسية	كمية المياه المنتجة (مليون متر مكعب)	مدة التنفيذ (شهراً)	التكاليف الاجمالية
الخاصاني (النهر نفسه)	سد وثقى تحويلي الى وادي اللطاني	٧٠	١٨	٧٥٠٠٠٠٠
نبع الوزاني على الخاصاني	عملة ضخ قناة الوزاني بانيناس	٥٠	١٨	١٠٠٠٠٠٠٠
بانيناس	قناة بانيناس اليرموك لمسافة ٨٠ كيلومتر	١١٠	٢٤	٢٥٠٠٠٠٠٠
الاعمال الفورية الاضافية في الاردن احتياطي ولتغطية الاعمال الفنية غير المنظورة بحوض الاردن		٢٣٠		٤٢٥٠٠٠٠
				١٠٠٠٠٠٠٠
				١٠٠٠٠٠٠٠
				٦٢٥٠٠٠٠٠



August 30, 1955

DRAFT MEMORANDUM OF UNITED STATES PROPOSALS.

1. The purpose of this memorandum is to set forth the understanding of the Government of Jordan and Ambassador Johnston as to the basic provisions of a plan which would be acceptable to Jordan from the technical and economic points of view. This formulation is subject to final approval.

2. Nothing in this formulation is to be construed as an agreement on the part of the Government of Jordan or of Ambassador Johnston.

3. This understanding is subject to the conclusion of satisfactory financial arrangements.

I - Storage

4. Reservoir facilities of 300 mcm capacity will be constructed on the Yarmuk River for the storage and regulation of Yarmuk waters.

5. In order to determine more precisely the economic, engineering and operational feasibility of utilizing either Lake Tiberias or alternative sites for the storage of Yarmuk flood flows, the construction program would be phased in such a way as to defer actual storage of Yarmuk waters in Lake Tiberias for a period of five years.

6. A final decision on this question will be made by the Engineering Board during the first six months of the year 1960. In making its decision the Board shall take into account requirements within the Lower Jordan Valley, and the economic feasibility of utilizing Lake Tiberias or alternative sites for storage of Yarmuk flood flows. The Board shall, within the context of the above considerations, consult the Governments of the States concerned and receive such comments and considerations as they may wish to present.

7. Should the Engineering Board's determinations indicate the need for storage of Yarmuk water in Lake Tiberias, the Government of Jordan will utilize such storage capacity in the Lake as it is determined to be necessary by the Board, not exceeding 300 mcm, and will cooperate in the implementation of the Board's decision. However, if Jordan should itself make firm arrangements to construct through its own means alternative storage which will insure against the wastage of water, the Engineering Board will acquiesce in Jordan's decision.

8. A declaration will be included in the agreements with the United States to the effect that Israel, Lebanon, Syria and Jordan will not use any provisions of the agreement as a basis for territorial claims, claims for frontier correction or adjustments, or claim for participating in the operation of or control over any of the elements of the Jordan River system within the territory of another participating state.

This declaration, which will be without prejudice to any rights or obligations which the states named have assumed under a general armistice agreement, will also provide that the states named will refrain from invoking the provisions of either an armistice agreement or this agreement for the purpose of interfering with the operation of the other agreement.

II - Supervision

9. An Engineering Board shall be established for the purpose of performing the following functions:

- (a) Review the engineering designs of the diversion structures and other project features on the Jordan River, the Yarmuk River, and Lake Tiberias, should the latter be used as a reservoir for the storage of Yarmuk flood flows, with a view to ensuring that such structures and other project features will not be inconsistent with the implementation of this agreement.
- (b) Make the necessary studies and decisions under paragraph 6 hereof.
- (c) Appoint a water Master as required by paragraph 10 hereof.
- (d) In accordance with agreed procedures, establish the fixed flow patterns for withdrawals, releases and deliveries as set forth in paragraph 12 hereof.
- (e) Establish the procedures for calculating releases and determining fixed flow patterns from Lake Tiberias should the Lake be used for storage of Yarmuk flood flows in accordance with paragraph 13 hereof.
- (f) Perform such other functions as may be agreed upon.

The Engineering Board shall consist of three engineers, one of whom will be selected by the participating Arab States and one by Israel, from a list prepared by an agreed body, perhaps by the UN Secretary General. The two engineers so selected will choose the third who will serve as chairman. No member of the Board, or the Water Master, shall be a national or an employee of any of the states involved.

If the parties desire, and other arrangements are agreed upon for the appointment of Water Masters, the Board may be abolished on the completion of its duties.

10. A Water Master shall be appointed and shall perform the following functions:

- (a) Supervise the deliveries and withdrawals specified in paragraph 12 hereafter and all diversion, regulatory and gauging facilities required to effect such deliveries and withdrawals.
- (b) In accordance with agreed procedures, make the calculations required in connection with the releases and fixed flow patterns from Lake Tiberias should the Lake be used for storage of Yarmuk waters.

- (c) Prepare and maintain such records as may be agreed upon.
- (d) In the event of a violation or threatened violation, take such steps as may be necessary, in accordance with agreed procedures.
- (f) Perform such other functions as may be agreed upon.

The participating governments will give the Water Master full cooperation in carrying out his stipulated duties. He shall have unimpeded access in the performance of his duties to all project features and all points on the water course.

11. The precise duties, functions and prerogatives of the Engineering Board and the Water Master, and details concerning remuneration, maintenance and administrative costs and requirements shall be set forth in an agreement to be forth in an agreement to be negotiated with the participating states.

III - Division of the Water

12. The following annual withdrawals and releases of water are agreed:

- (a) From the Banyas: Up to 20 mcm to Syria.
- (b) From the Hasbani: Up to 35 mcm to Lebanon.
- (c) From the River Jordan: Up to 22 mcm to Syria for the area of Botaiha farms.
- (d) From Lake Tiberias: A delivery by Israel to the Kingdom of Jordan at a specified points South of Lake Tiberias of 100 mcm. The delivery of this agreed quantity will be made at predetermined constant flows according to seasonal schedules determined by the Engineering Board under paragraph 9(d) and will be effected through structures to be approved by the Board. There is a possibility that, to avoid the wastage of water, it might be necessary to utilize some water diverted from saline springs around Lake Tiberias. In no event, however, will this amount exceed 30 mcm. Should the water be diverted from the saline springs, it shall be made available for mixture with Yarmuk water at a point to be agreed upon under the supervision of the Water Master, so that the salinity of the mixture shall at no time be higher than that of average Lake Tiberias.
- (e) From the Yarmuk: Up to 90 mcm to Syria and a delivery by the Kingdom of Jordan 25 mcm to Israel.

13. Should the Board recommend the storage of Yarmuk water in Lake Tiberias in accordance with paragraphs 5-7, Israel will deliver such water to the Kingdom of Jordan at an agreed point. This delivery will be made under supervision of the Water Master in periodically predetermined flows according to procedures to be agreed upon.

ملحق رقم (11)

نموذج لتحديد القوى النسبية واحتمالات الصراع في أحواض الأنهار الكبرى بالشرق الأوسط

الحوض	الدولة	المصلحة (الحاجة)	القوة	وضع دول الحوض	الإجمالي
حوض الأردن	إسرائيل	5	9	5	19
	الأردن	5	2	2	9
	سوريا	3	3	2	8
	لبنان	1	0.5	2	3.5
حوض الفرات	تركيا	5	8	5	18
	سوريا	5	3	3	11
	العراق	4	2	1	7
حوض النيل	مصر	5	7	1	13
	السودان	4	1.5	4	9.5
	إثيوبيا	3	0.5	4	7.5

البيانات مأخوذة ومعدلة عن (Frey 1993). ولقد طبقنا المقياس 1 - 5 فيما عدا بالنسبة للقوة، إذ مقياسها 1 - 10، وذلك للتعبير عن الواقع بشكل أكثر دقة. وقرة العراق محددة على أساس ظروف ما بعد حرب الخليج الثانية 1990 - 1991.

المصدر: توماس ناف: الصراع على المياه والتنمية الاقتصادية