

APPENDICES

APPENDIX 1: QUESTIONNAIRES

1. Collection of statistic information about 25 villages in sub-region: (by Al-Ghory Abdulhadi Abdulhak)

Date: / / 199

Village name:

Interviewee:

1. What are the numbers of migrants in Yemen now and before unification?
 - a. No. now: person family
 - b. no. before: person family
2. What are the numbers of migrants abroad now and before unification?
 - a. No. now: person, family
 - b. no. before: person family
3. How many families and population of the village?
4. What are the problems of migration?
 - a. careless of agriculture land
 - b. problems of rising children
 - c. other
5. What are the benefits from migration?
 - a. get money
 - b. learn new techniques
 - c. increase your education
6. What is the source of water for domestic use?
 - a. private wells
 - b. public wells
 - c. spring
 - d. flood
 - e. truck
7. What are the problems of domestic water?
 - a. shortage on winter
 - b. source of water is far
 - c. price of the water
 - d. quality: (good) (medium) (poor) (unknown)
8. What is the time needed for a woman to bring water and how often they go per day?
 - a. at rainy season: time: minute, no. of times
 - b. at winter season: time: minute, no. of times
9. How many wells and what is the average depth of them in the village?
 - a. no. of wells: , average depth: (meter)
 - b. no. of wells dry out: , when they dry out:
10. What are the sources of irrigation water?
 - a. rain
 - b. flood
 - c. ground water
 - d. spring
11. How the water traditionally distributed in to the land?
12. how is the water distribution practiced today?
13. Are the farmers rent their land and to whom?
 - a. to one of the family
 - b. to who is able to work in the land
 - c. other
14. What is the percentage of rented land in the village now?
15. What is the percentage of the rented land in the village 10-20 years ago?
 - a. more than now
 - b. less than now
16. What is the role of rented land for (seasonal crops, and permanent crop)?
 - a. for seasonal crop in rainfall land
 - b. for permanent crop in rainfall land
 - c. for seasonal crop in irrigated land
 - d. for permanent crop in irrigated land

17. How is the rent land related to the crops (only seasonal crop, Q'at,..)?
 - a. seasonal crops only
 - b. permanent crops only
 - c. both
18. Why is land rent out?
 - a. rented land is far from house
 - b. cost of maintenance of land is high
 - c. few member of the family are working in the land
 - d. other
19. What effect has the rent of land on the intensity of land use and the maintenance of terraces?
 - a. cultivation of land increase
 - b. cultivation of land decrease
 - c. the terraces are maintained
20. How many families not own land and rent land in?
21. How many families own land and not rent land out?
22. How many families own land and rent land out?
23. How many families own land and rent land in?
24. What are the types of crops the village produced now?
25. What were the types of crops the village produced in the past?
26. What are the reasons for this change?
 - a. decrease of water
 - b. marketing was difficult
 - c. diffusion of crop diseases
 - d. low production
 - e. other
27. When is the Q'at started to grow in the village?
28. Is there any relationship between maintenance of terraces and type of crops (esp. Q'at)?
 - a. positive relationship
 - b. negative relationship
29. Which crop is the village sold to other area?
30. What are the location and name of the market closed to village?
31. Are there families depend completely on the agriculture?
No, Yes (number:)
32. What is the percentage of agricultural product cover need of families per year?
whole the year
1/4, 1/2, 3/4, 1/3, 2/3
33. How does the house consumption change from the past?

a. imported grain wheat:	now,	past,	in both
b. imported wheat flour:	now,	past,	in both
c. sorghum and millet:	now,	past,	in both
d. vegetables:	now,	past,	in both
e. tea:	now,	past,	in both
f. imported cooking oil and ghee:	now,	past,	in both
g. rice:	now, past, in both		
h. local coffee:	now, past, in both		
34. Do some families rely on others for support? No, Yes (no.)
35. What are the nearest schools and their level?
36. Where the nearest health clinic and what are its activities?
37. Does the village have a road? Yes, No
38. Who built it and maintained it?
39. Are there any cooperation between farmers (men or women) to do their work, and what is the type of work they share?
 - a. Men: No, was in the past, Yes
 - b. Women: No, was in the past, Yes

40. Who owns the uncultivated land above the terraces (at the mountain)?
 - a. the owner of the land locate below it
 - b. no body own it so it is open (*mosha'*)
 - c. other
41. Does the uncultivated land always go with adjacent cultivated land or can it be separate?
 - a. Yes always it is follow it.
 - b. owned separated
 - c. other
42. Is the usage rights of uncultivated land happened only by owner or any one else has a usage rights for (e.g. cutting trees, pasture, water harvesting)?
43. Can usage rights (in the previous question) be sold?
44. What is the function of the uncultivated land for landholders?
 - a. firewood
 - b. fodder from branches
 - c. pasture
 - d. water harvesting
45. We have seen some abandoned terraces at the tope, so, in this case who is responsible for the damage cause to the good shape terraces bellow?
 - a. is the owner of damage land on the top
 - b. is the owner of land below
 - c. or both have to share
46. How is the labor distribution for agriculture work?
 - a. Men
 - b. Women
 - c. Children
47. What is the labor rate per day? Or, How is labor rate per day change from the past?
48. What is the draughts animal rate per day?
49. What are the new equipment and other things available now but have not seen 30-40 years ago in the village?
50. Who are the first people who brought these equipment and other things to the village, and why?
 - a. the migrants
 - b. the traders
 - c. wealthy people
 - d. other
51. What were their sources of the invested money?
52. Who are the next acceptors of the new equipment in the village?
53. Are the people selling land in the village?
54. What are the reasons of selling land?
55. Is the selling land more now or in the past?
 - a. In the past was more than now
 - b. In the past was less than now
56. What are the prices? And in which conditions?
 - a. irrigated land
 - b. rainfed land in the Wadi
 - c. rainfed land on the middle of terraces
 - d. rainfed land on the top of terraces
57. How are the Shaykh and the A'adl determined?
58. What the function of Shaykh?
59. What the function of al-A'adl?
60. What is the mechanism for solving problems?

2. Questionnaire for detailed study: (by: Al-Ghory Abdulhadi Abdulhak)

Date: / / 199

Name of the village:

Number of interview:

Name of interviewee:

Name of Household Head:

Water:

1. What are the sources of water of your house?
 - a. public well
 - b. private well
 - c. well owned by other
 - d. spring
 - e. other
2. How do you get the water to your house?
 - a. by the pipes
 - b. by donkey
 - c. on the head of women
 - d. by car (truck)
3. How much water does use in your house per day for?

	<u>Amount (l)</u>	<u>Rank</u>
a. Drinking and cooking:		
b. Washing cloth:		
c. Bathing and toilet:		
d. for animals:		
4. What is the time needed for a woman to bring water and how often they go per day?

Note: the time count here is for going and back to the source.

 - a. at rainy season: time: minute, no. of times/day
 - b. at winter season: time: minute, no. of times/day
5. What is the type and capacity of water storage?
6. What is the price of water if any (YR/unit)?
7. What are the problems of domestic water?
 - a. shortage during winter
 - b. Far from home
 - c. Price of water
 - d. quality: (poor) (medium) (good) (unknown)
8. Where is the sewage water of the house go?
 - a. close drain hole
 - b. open drain hole
 - c. to the ground
 - d. other (specify)
9. What are the sources of irrigation water?
 - a. rain
 - b. flood
 - c. spring
 - d. ground water
10. How was traditionally you get the water to your land?
11. How do you get the water to your land today? What is the reason of this change?
When did they adopt a new system of getting the water to the land?
12. a. Do you have neglected fields but they were used before? Y, N, if the answer is Y, then:
 - b. When did you neglect them? And why?House information
13. From what is the house made?
14. When was it build?
15. How many floors and rooms of the house? F: (), R : ()
16. How is the house related to the household?
 - a. inherited
 - b. built by present owner
 - c. purchased
 - d. rented

Household population structure:

17. How many persons male and female in your family?

No	Sex	Age	Relation to H. H. Head	Marital status	age at 1 st marriage	no. of marriage	No. of divorces	Education	place of work	type of work	No of child Death /F
1			Household Head								
2											
3											
4											
5											
6											
7											
8											

18. Are there any family members able to work but without job (hidden unemployment) in the family? Why?

Migration information:

"Migrants in Yemen and abroad"

No.	Relationship to Household Head	skill and work pre migration	places of migration	Duration	skill and nature of work	Place and nature of work

19. Why did you migrate?

20. How did you spend your money from migration? Or how did they spend their money from migration?

- | | |
|------------------------------------|--------------------------------|
| a. building new house | b. bought car |
| c. marriage | d. improve the family live |
| e. buying land in the village | f. buying land or hose in city |
| g. invest it in the city (trading) | h. other (indicate) |

21. What was the source of investments of the house?

Livestock:

22. What are the types and number of animals?

- | | | | |
|----------|-----------|------------|-----------|
| a. cow: | b. ox: | c. calf: | d. sheep: |
| e. goat: | f. camel: | g. donkey: | |

Which animals are needed to work in agriculture?

- 23.
- | |
|--|
| a. Did you feed them the straw from your land? Y, N |
| b. Did you buy extra fodder from the village? Y, N |
| c. do you buy it from outside? Y, N, source?, amount?, price/unit? |
| d. When do you buy the fodder? |
| e. Where do you graze them? |

Land tenureship:

24. How much agriculture land do you have?

- | | |
|--|---|
| a. inherited (area or number of plots) | b. purchased (area or number of plots) |
| c. rent out land (area or number of plots) | d. rent in land (area or number of plots) |

25. Do you have uncultivated land above the terraces you own (at the mountain)? Y, N
If the answer of last question is "yes" then,
26. How did you get this land?
- Inherited and it is mentioned in the contract of the adjacent land you own.
 - Inherited and it is not mentioned in the contract of the adjacent land you own.
 - You have purchased land and it is come with it.
 - You have purchased it alone.
 - You have got it by force "Habat" in Arabic.
27. Did you sell land? Y, N, Why?
28. What are the Prices? On which conditions?
- Irrigated land
 - rainfed land in the bottom of Wadi
 - rainfed land in the middle of terraces
 - rainfed land in the upper of terraces
29. Is uncultivated land always go with adjacent cultivated land or can it be separate?
Note: this question is asked only the "Adel" of the village.
30. For what do you use the uncultivated land?
- Firewood for home use! or for sell! If it for sell, then: to where? Price/unit?
 - fodder from branches
 - pasture,
 - water harvesting
 - other
31. Can usage rights be sold (ex. Water harvesting)? Y, N
Note: this question is asked only the "Adel" of the village.

Land rental:

32. Do you have land rented out? Y, N
33. Do you have land rented from other? Y, N
34. Why do you rent land out?
- because it is far from home
 - maintenance cost more,
 - few people in the family who work in agriculture
 - others (specify)
35. To whom do you rent land?
- to one of your family
 - to who is able to work in the land,
 - to who is honest and able to work on the land
 - other (specify)
36. Why did you rent land from other people?
37. How much land do you rent out (area or number of plots or 1/4, 1/2, 3/4, 1/3, 2/3)?
38. What is the role of rented land?
Note: in this question the amount that the owner get from the rented and what his share of input.
- | | | | |
|-------|-------|-----------------|-------------|
| Prod. | Labor | terraces maint. | other input |
|-------|-------|-----------------|-------------|
- for seasonal crop in rainfall land
 - for permanent crop in rainfall land
 - for seasonal crop in irrigated land
 - for permanent crop in irrigated land
39. Do the tenants maintain the rented terraces same as their terraces?

Agriculture crops:

40. What were the types of crops you grew last year?

Crops	Area or no. of plots	Production	Amount used	Amount sold	price/ unit	place of sell

41. What are the types of crops you grow this year?

Crops	Area/No. of plots

42. What are the new crops you grow now and not in the past?

New crop	Beginning of growing (year)	Source of seed/ seedling	Source of the idea	Reasons

Continuation table for growing Q'at or marketable crops:

Location of sold	Cost of input	Amount consumed	Income

43. How much is your agriculture product cover your family need?

- a. whole year
- b. 1/4, 1/2, 1/3, 2/3, 3/4
- c. for more than one year

44. What are the types of foods consumed now and 30-40 years ago in your house?

now:
before:

45. How much is your family consumption from:

- a. sorghum monthly?
- b. wheat and flour monthly?
- c. meat monthly?
- d. chicken meat monthly?
- e. sugar monthly?
- f. rice monthly
- g. ghee and cooking oil monthly?
- h. powder tea monthly?
- i. Vegetables monthly?
- j. powder milk monthly?
- k. for Q'at monthly?
- l. for medicine monthly?
- m. for clothes monthly?
- n. for school monthly?
- o. for electricity monthly?
- p. for water monthly?(Tax and Zakah)

46. In the agriculture what are the duty of men women children of the your family?

- a. men:
- b. women:
- c. children:

47. Do you hire labor for agriculture work? Y, N

48. What type of agricultural work do you hire labor for?

49. In which season do you hire labor? Time(day)? How many?

50. What is the labor rate per day now?

51. What are the problems of hiring labor now?

- a. Shortage of labor due to migration out of the village
- b. the rate per day is high
- c. there are many labors but the daily rate is high
- d. others

52. For the labor: What are the reasons of increasing the daily rate?

- a. You are few labor in the village so the demand on you is more. Y, N

- b. Expense of the live. Y, N c. others
53. Do you hire draughts animals? Y, N
54. What is the rate of draughts animals per day? Yr/day:
55. What is the source of cooking fuel?
- a. gas b. wood (sources) c. gasoline
56. What do you own in your household?
- a. well: Y, N b. water pump: Y, N
- c. vehicles: Y, N d. TV: Y, N
- e. radio, Y, N f. small dam: Y, N
- g. sykaya (water reservoir): Y, N h. more than house, Y, N
- i. electric generator: Y, N j. mill machine: Y, N.
- k. shop: Y, N l. carpenter workshop: Y, N.
- m. welding workshop: Y, N n. sewing machine: Y, N
- o. restaurant: Y, N p. café: Y, N
- q. hotel: Y, N r. bakery: Y, N
- s. pharmacy: Y, N t. others.
57. What are your other sources of income?
- a. from employment with government or private: b. from non agriculture daily work :
- c. from migrants in or out Yemen: d. from trading:
- e. from taxi driving: f. from other sources:
- g. from hand craft work (swing , carpenter, workshop):
- h. from trading i. other
58. Are the children how study in school work in agriculture? Y, N , Why?
59. Increase of population, and shortage of production are reasons for importing wheat and flour, how can we treat this problem in your opinion?
60. For some people:
- a. what is the timetable of sorghum crop?
- b. what is the timetable of Q'at?

a. Data sheet for Q'at economic study in Addawm:

الدراسة الاقتصادية لأهم المحاصيل في المنطقة (القات): الباحث /عبدالهادي الغوري
Economic study for important crop in the region (Q'at): Researcher\ Al-Ghory Abdulhadi

جدول 1 أ: العمالة

Area المساحة: field name اسم الحقل: Village name اسم القرية:
Name of field owner/ farmer اسم مالك الحقل أو المزارع:
Season الموسم الزراعي: Type of crop نوع المحصول:

Table 1a: Labor

الأجرة daily rate YR	مدة العمل duration	No and type of labor عدد و نوع العمالة				نوع العمل type of work	التاريخ date
		عمالة أسرية Family labor		عمالة بالأجر Rental labor			
		ذكور male	إناث female	ذكور male	إناث female		

جدول 1 ب: تكاليف المواد المدخلة مثل المياه و الأسمدة و المبيدات وخلافه

Table 1b: Cost of input such as water, fertilizer and pesticide etc.

ملاحظات Remarks	القيمة	مقدار الكمية المستخدمة amount of materials used	اسم الكمية المستخدمة name of material used

جدول 2: الإنتاج

Table 2: Production

إجمالي القيمة Total price	القيمة price/unit	الكمية quantity	مكان البيع أو السوق Location of sell/market	التاريخ date

b. Data sheet co sorghum economic fields in Al-Ma'amirah village:

الدراسة الاقتصادية لأهم المحاصيل في المنطقة (ذرة): الباحث /عبدالهادي الغوري
Economic study for important crop in the region (Sorghum): Researcher\ Al-Ghory Abdulhadi

جدول 1 أ: العمالة

Area المساحة: field name اسم الحقل: Village name اسم القرية:
Name of field owner/ farmer اسم مالك الحقل أو المزارع:
Season الموسم الزراعي: Type of crop نوع المحصول:

Table 3a: Labor

الأجرة daily rate YR	مدة العمل duration	No and type of labor عدد و نوع العمالة				نوع العمل type of work	التاريخ date
		عمالة أسرية Family labor		عمالة بالأجر Rental labor			
		ذكور male	إناث female	ذكور male	إناث female		

جدول 1 ب: تكاليف المواد المدخلة مثل المياه و الأسمدة و المبيدات وخلافه

Table 3b: Cost of input such as water, fertilizer and pesticide etc.

ملاحظات Remarks	القيمة price YR	مقدار الكمية المستخدمة amount of materials used	اسم الكمية المستخدمة name of material used	ال

جدول 2: الإنتاج

Table 4: Production

القيمة price YR	مكان البيع Location of sell	الكمية المباعة quantity sell			كمية الإنتاج Production quantity			التاريخ date
		عجور	حبوب	straw	عجور	حبوب	straw	

APPENDIX 2: Tables

Table 1: Total cultivated land (ha), no. of land holding and average holding size in (ha) for each province in 1983 and 1993.

Province	Cultivable Area (ha)	Total Cultivated land in (ha) 1983	%	Total No. Of land Holding 1983	%	Average Holding Size (ha) 1983	Avg. No. Of parcels /holding 1983	Total Cultivated land in (ha) 1993	%	Total No. Of land Holding 1993	%	Average Holding Size (ha) 1993	Total Cultivated land in (ha) 2000	%	Total No. Of land Holding 2000	%	Average Holding Size (ha) 2000
Sana'a city		-		-				1386	0.1	3346	0.3	0.4					
Hodeidah	336613	333607	24.7	58531	9.9	5.7	2.8	306148	19.5	97986	9.0	3.1	307924	26.9	113050	10.1	2.7
Sana'a	380726	380514	28.2	123874	21.0	3.1	5.8	306114	19.5	163618	15.0	1.9	213138	18.6	168707	15.1	1.3
Dhamar	138220	71181	5.3	56661	9.6	1.3	7.1	133846	8.5	112470	10.3	1.2	88997	7.8	111540	10.0	0.8
Ibb	101521	102269	7.6	117787	19.9	0.9	3.7	110678	7.1	167558	15.3	0.7	81846	7.2	159656	14.3	0.5
Taiz	123432	122820	9.1	104389	17.7	1.2	4.0	110202	7.0	151906	13.9	0.7	65177	5.7	157556	14.1	0.4
Mareb	91190	66491	4.9	12111	2.0	5.5	6.2	75406	4.8	13650	1.2	5.5	88746	7.8	14488	1.3	6.1
Hajjah	124594	124102	9.2	43812	7.4	2.8	4.1	148619	9.5	88584	8.1	1.7	58133	5.1	86918	7.8	0.7
Al-Beida	75895	52442	3.9	23416	4.0	2.2	4.7	85149	5.4	37424	3.4	2.3	24997	2.2	37462	3.4	0.7
Sa'adah	61030	51252	3.8	22231	3.8	2.3	4.6	54281	3.5	45115	4.1	1.2	53448	4.7	41276	3.7	1.3
Al-Mahweet	29168	24594	1.8	21930	3.7	1.1	3.2	30743	2.0	38332	3.5	0.8	27175	2.4	38227	3.4	0.7
Al-Jawf	69594	21503	1.6	6329	1.1	3.4	7.1	81312	5.2	10433	1.0	7.8	47916	4.2	10564	0.9	4.5
Total (North)		1350775	100	591071	100	2.3*	4.6*	1443884	91.98	930422	85.1	1.6	1057497	92.5	939444	84.2	1.1
Lahj	32017							27974	1.8	56069	5.1	0.5	20499	1.8	54393	4.9	0.4
Abyan	38474							42251	2.7	32422	3.0	1.3	30090	2.6	40304	3.6	0.7
Hadramout	39785							26215	1.7	40981	3.7	0.6	22211	1.9	45638	4.1	0.5
Shabwah	21215							27869	1.8	23186	2.1	1.2	9106	0.8	25843	2.3	0.4
Al-Maharah	1449							1287	0.1	5277	0.5	0.2	1012	0.1	5466	0.5	0.2
Aden	3935							374	0.02	4473	0.4	0.1	3026	0.3	4427	0.4	0.7
Total (South)								125970	8.02	162408	14.9	0.8	85944	7.5	176071	15.8	0.5
Sub Total	1668858	1350775	100	591071	100			1569854	100	1092830	100	1.4	1143441	100.0	1115515	100.0	1.0

Source: Statistic Yearbook, 2000, 1997 page 58 (result of the survey of 1993) and Kamel Al-Rashahi, 1988, pages 32, 33 (result of the survey for 1983).

* The values are the average in the row of the Total

APPENDIX 3: Water right

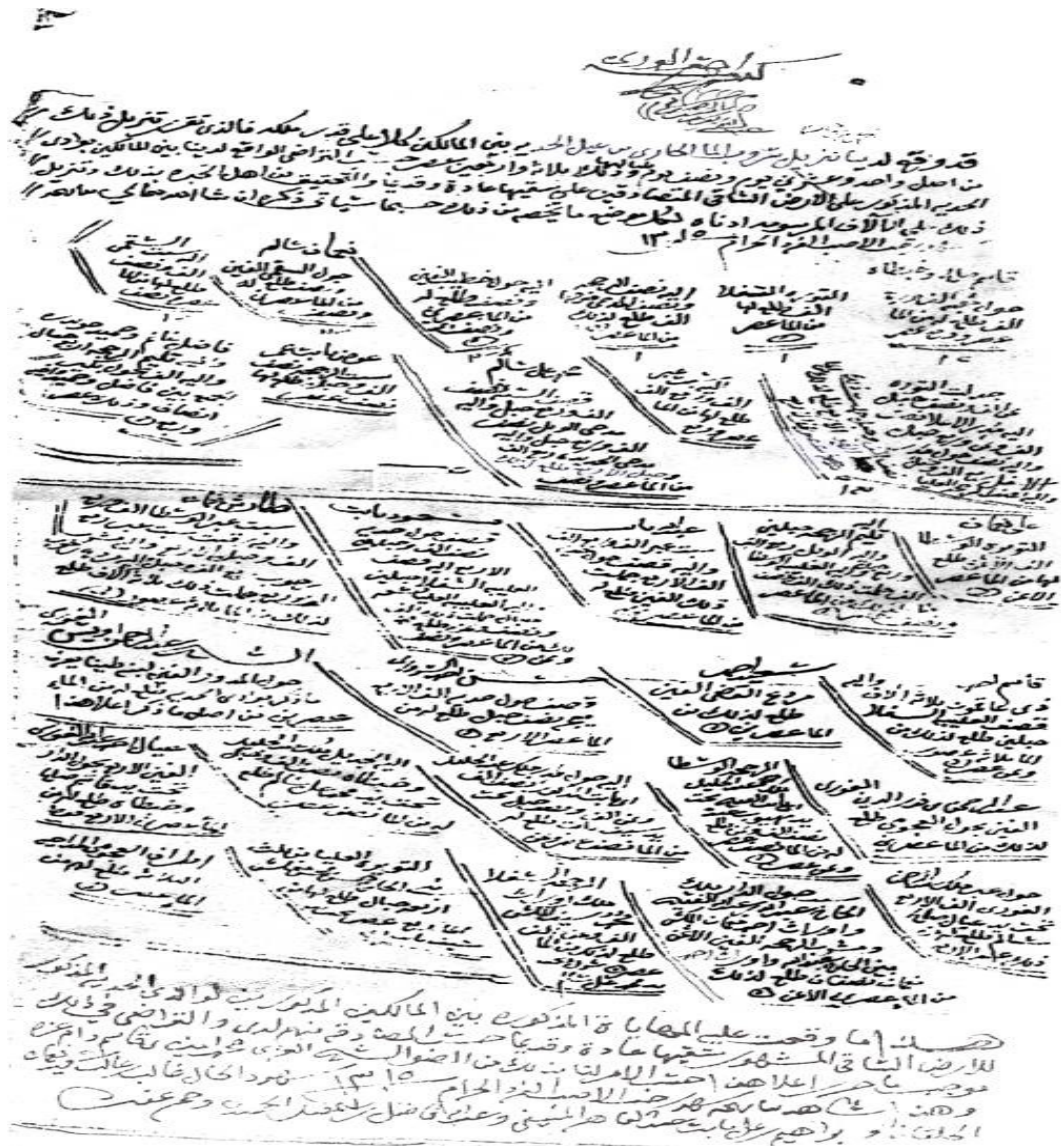


Fig. 1: Water-right distribution of Al-Hadya spring in Al-Ma'amirah in Q'adas

قد وقع لدينا تنزيل سرور الماء الجاري من غيل الحدية بين المالكين كلا على قدر ملكه فالذي تقرر تنزيل ذلك من اصل واحد وعشرين يوم ونصف يوم بليايلها وذلك بثلاثة واربعين عصر حسب التراضي الواقع لدينا بين المالكين بوادي الحدية المذكور على الارض الساقية المتصادقين على سقيها عادة وقديما والتحقيق من اهل الخبرة بذلك وتنزيل ذلك على الالاف المرسومة اذناه لكل موضع ما يخصه من ذلك حسبما سيأتي ذكره ان شاء الله تعالى بتاريخه شهر رجب الاصب الغر الحرام سنة 1315 هجري.

قاسم صالح و خلطاه حول ثعبية ألف و ربع ألف طلع له من الماء عصر وربع عصر	التويره السفلا ألف طلع لها من الماء عصر	إليه نصف الرجحه ونصف المدحي فوقها ألف طلع لذلك من الماء عصر	إليه حول خطيب ألفين ونصف طلع له من الماء عصرين ونصف	نعمان سالم حول السقمي الفين ونصف طلع له من الماء عصرين ونصف	إليه سبة السقمي ألف ونصف طلع له من الماء عصر ونصف
جدلة التويره ثمن ألف ونصف حبل إليه مدار أعلا نصف ألف و ثمن وربع حبل وإليه نصف حول مدار الاسفل ربع ألف وحبل وإليه نصف الرجحة العليا نصف ألف وحبل جملة ذلك ألفين إلا ربع طلع لذلك عصرين إلا ربع	إليه سبة عبر ألف وربع ألف طلع لها من الماء عصر وربع	محمد علي سالم قصف السبة نصف ألف وربع حبل وإليه مدحي الوبل نصف ألف وربع حبل وإليه مدحي الجنبدة ربع ألف وحبل إلا ربع طلع لذلك من الماء عصر ونصف	عوض ثابت عمر سبة الرجحه نصف ألف وحبل طلع لها نصف عصر	فاضل غانم وحميد حويدره وأخيه تليم الرجحه اربع حبال وإليه ألف بحول بكير الجميع بين فاضل وحميد وأخيه أنصاف وذلك عصر وربع	
علي نعمان التويره الوسطاء ألف إلا ثمن طلع لها من الماء عصر إلا ثمن	إليه تليم الرجحه حبلين وإليه الوبل ربع ألف وربع حبل وإليه العليبه الوسطاء ألف جملة ذلك ألف ونصف طلع لذلك من الماء عصر ونصف	عبد الله ثابت سبت عبر ألف وربع ألف وإليه قصف حول حديه ألف إلا ربع جملة ذلك ألفين طلع له من الماء عصرين	سعود ثابت قصف حول حديه نصف ألف وحبلين إلا ربع إليه قصف العليبه السفلا حبلين وإليه العليبه العليا تسعه حبال جملة ذلك ألف ونصف و ثمن طلع لذلك من الماء عصر ونصف و ثمن	طارش نعمان سبت عبر الوسطاء ألف وربع إليه رقيه سبت عبر ربع ألف وحبل إلا ربع وإليه مشرب رحوب ربع ألف وحبل وإليه مردع رحوب ألف وربع جملة ذلك ثلاثة آلاف طلع لذلك من الماء ثلاثة عصور	
قاسم احمد ذي عاقمون ثلاثة آلاف وإليه قصف العليبه السفلا حبلين طلع لذلك من الماء ثلاثة عصور و ثمن عصر	سعید احمد مردع القاضي ألفين طلع لذلك من الماء عصرين	حسن احمد السروري قصف حول حديه ألف إلا ربع بجه نصف حبل طلع له من الماء عصر إلا ربع	الشيخ عبد الرحمن اويس الغوري حول المنور ألفين لبنه طين يعرف بوادي الحديه طلع له من الماء عصرين من اصل ما ذكر أعلا هذا		
عبد الرحمن بن نور الدين الغوري الفين بحول العجومي طلع لذلك من الماء عصرين	الرجحه الوسطاء ملك عبد الجليل إين ثابت الففتح تحت يد مهبوب سعيد نصف ألف و ثمن طلع له من الماء نصف عصر و ثمن عصر	إليه حول مدار ملك عبد الجليل إين ثابت المذكور نصف ألف ونصف حبل تحت يد سيف ثابت طلع له من الماء نصف عصر و ثمن	إليه الجديل ملك عبد الجليل و خلطاه نصف ألف وحبل تحت يد محمد علي سالم طلع له من الماء نصف عصر	عياح احمد عبد الله الغوري ألفين إلا ربع بحول الدار تحت يد قاسم صالح و خلطاه طلع له من الماء عصرين الأ ربع فقط	
حول عبر ملك عبد الرحمن الغوري ألف إلا ربع تحت يد عياح صالح سالم طلع لذلك عصر إلا ربع	سبت حول الدار ملك الحاج عبدالله عبدالله الففتح واوراث احمد نعمان المكش ومشرب الرجحه ألفين إلا ثمن بين الحاج عبدالله واوراث احمد نعمان نصفان طلع لذلك من الماء عصرين إلا ثمن	الرجحه السفلا ملك اوراث محمد سيف المكش ألف و ثمن ألف طلع لذلك من الماء عصر شرك تحت يد محمد علي سالم	التويره العليا للحاج حسن محسن مجلس اربعه حبال طلع لها من الماء ربع عصر تحت يد سيف ثابت	أطراف العجومي المداحيه الثلاثة طلع لهم من الماء عصر	

هذا ما وقعت عليه المهياة المذكوره بين المالكين المذكورين لوادي الحديه المذكور للارض الساقية المشهور سقيها عادة وقديما حسب المصادقة منهم لدي والتراضي في ذلك بموجب ماحرر اعلا هذا حسب الامر لنا بذلك من المصنف الشيخ العزي محمد ابن قاسم دام عزه وهذا شاهد بتاريخه شهر رجب الاصب الفرد الحرام سنة 1315 هجري شهود الحال غالب بن غالب سعيد نعمان الحلقاتي و إبراهيم علي ثابت عبد القاهر المنيفي وعبدا لله فاضل بن إسماعيل الحميدي وجمع غير .

In the top: Praise be to Allah,

Already it was cleared to us the water right turns distribution for water running of spring of Wadi Al-Hadyah among land owners, each one according to his land area. It was determined the total water right distributed to 21 and ½ days with their nights which equal to 43 turns (A'asr = 12 hours) according to agreement happened in front of us between land owners of irrigated lands in Wadi Al-Hadyah, as it was known among them by traditional irrigation in the past and due to inquiry from old qualitative people to distribute the turns among irrigated land. So, and according to al-alaf (thousands is a plural of thousand = 10 Q'asabah x 20.25 m²/ Q'asabah = 202.5 m²). Table 1, below shows each location and its amounts of water right as hopefully it will be written, dated in Ragab 1315 H (Nov, 1897).

In the Bottom:

This is the agreement that the owner of the water right in Wadi Al-Hadya for the old famous custom irrigated land agreed on it in front of me, and according to the distribution shown above (Table 1 below). We did it according to the order of Ash-Shiykh Al-A'izi Mohamed Ibn Q'asem, and this is the evidence wrote in Ragab 1315 H(Nov, 1897). The recent witnesses, Ghaleb bin Ghaleb Saeed Noa'man Al-Halaq'any, Ibrahim Ali Thabit, Abdulq'aher Al-Munify and Abdullah Fadel Ismaa'el Al-Humaidy and large gathering.

Table 1: List of Al-Hadya water right distribution, shown the owner of the land, field name, area and duration of irrigation water.

No.	Owner	Field name	Area	Irrigation time
1	Q'asem Saleh and his partners	Howl Thoa'bah	1.25 thousands	1.25 turn (A'asr)
2		Atowarah Assufflah	Thousand	1 turn
3		½ Ar-ragaha and q'usf al-midhe over it	Thousand	1 turn
4		Howl Khatib	2.5 thousands	2.5 turns
5	Noa'man Salem	Howl Asuq'ma	2.5 thousands	2.5 turns
6		Sabat Asuq'my	1.5 thousands	1.5 turns
7		Gedlat Atowarih Gedar al-aa'la ½ Howl Gdar al-asfal ½ Ar-ragaha Al-A'ulya	1/8 thousand + ½ q'asabh ½ thousand + 3/8 q'sabh ¼ thousand + q'asabh ½ thousand + q'sabh total= 1.75 thousands	1.75 turns
8		Sabat A'ubar	1.25 thousands	1.25 turns
9	Mohamed Ali Salim	Q'usf Asabh Midhy Al-wabel Midhy Al-Hadida	½ thousand + ¼ q'asabh ½ thousand + ¼ q'asabh ¼ thousand + ¾ q'asabh	1.5 turn
10	A'wadh T. A'umar	Sabat Ar-ragaha	½ thousand + q'asabh	½ turn
11	Fadhel Ghanim and Hameed Hwoydera	Talim Ar-ragaha Howl Bokair	4 q'asabh 1 thousand	1.25 turns
12	Ali Noa'man	At-towirat Al-wosta	7/8 thousand	7/8 turn
13		Talim Ar-ragaha Al-Wabel Al-A'olibah Al-Wosta	2 q'asabh ¼ thousand + ¼ q'asabh 1 thousand Total= 1.5 thousands	1.5 turns
14	Abullah Thabit	Sbat A'obar Q'usf howl Hadya	1.25 thousands 0.75 thousand	2 turns
15	Mas-a'ud Thabit	Q'usf howl Hadya Q'usf Al-a'ulibh as-sufila Al-a'ulibah al-a'ulyah	½ thousand + 1.75 Q'asabh 2 Q'asabh 9 q'asabh	(1+ 5/8) turns
16	Tarish Noa'man	Sabat A'ubar Al-wosta Raq'abt Sabat A'ubar Mashrab Rahob Marda' Rahob	1.25 thousand ¼ thousand + ¾ q'asabh ¼ thousand + 1 q'asabh 1.25 thousand	3 turns
17	Q'asem Ahmed	Dhee A'aq'mun Q'usf Al-a'ulibh Asufila	3 thousands 2 q'asab	(3+1/8) turns
18	Sa-a'ed Ahmed	Marda' Al-q'adhe	2 thousands	2 turns
19	Hasan A. As-surure	Q'usf Howl hadya	0.75 thousand + ½ q'asabh	¾ turn
20	Ash-shiykh Abdurhman Al-Ghory	Howl Al-Mudwar	2 thousands	2 turns
21	Abdurahman M. N. Al-Ghory	Howl Al-A'gomi	2 thousands	2 turns
22	Abdulgalil T. Al-Futih, rent to Mahyob Saeed	Ar-ragaha Al-wosta	½ thousand + 1/8 thousand	5/8 turn
23	Abdulgalil Thabit, rent to Saif Thabit	Howl Ad-dar	5/8 thousand + ½ q'asabh	5/8 turn
24	Abdulgalil	Al-Gudail	½ thousand + 1 q'asabh	½ turn
25	Sons of Ahmed A. Al-Ghory, rent to Q'asem Saleh	Howl Ad-dar	1.75 thousands	1.75 turns
26	Abdulrahman Al-Ghory, rent to sons of Saleh Salem	Howl A'ubar	¾ thousand	¾ turn
27	Al-haj Abdullah Abdullah Al-faq'eh and inheritants of Ahmed Noa'man Al-Makush	Sbat Howl Ad-dar and sherb Ar-ragaha	1 thousand + 7/8 thousand	(1+7/8) turn
28	Inheritants of Mohamed saif Al-Makush, rent to Mohamed Ali Salim	Howl Ar-ragah Asufila	1 thousand + 1/8 thousand	1 turn
29	Al-Haj Hasan Muhsen Mughles, rent to Saif Thabit	At-towirah Al-A'uliah	4 q'asabh	¼ turn
30		Atraf Al-A'agomy 3 pieces		1 turn

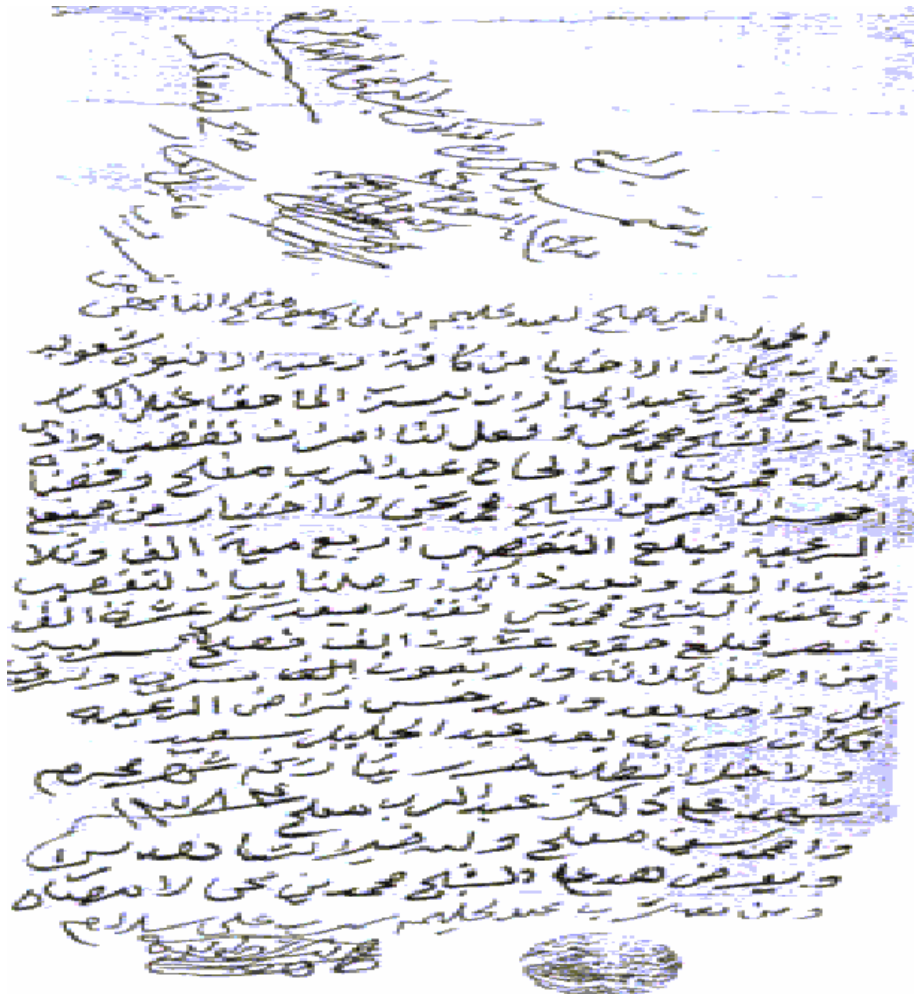


Fig. 2: Water-right distribution of Al-Kuser spring in Al-Anbow in Ash-Shaa'wbah

الحمد لله

فيما كان الاختيار من كافة رعية الانبوه شعوبه شيخ محمد يحي عبد الجبار أن يسرب الماء حق غيل الكسار فبادر الشيخ محمد يحي وفعل لنا أمر أن نقصب وادي الدنة فمرينا أنا والحاج عيد الرب مفلح وقصبناه حسب الامر من الشيخ محمد يحي والاختيار من جميع الرعية فبلغ التقصيب أربع مية ألف وثلاثون ألف وبعد ذلك اوصلنا بيان التقصيب إلى عند الشيخ محمد يحي فقد ر بعد كل عشرة ألف عصر فبلغ حقه عشرون ألف فصح له سربين من أصل ثلاثة وأربعون سرب وسروب كل واحد بعد واحد حسب تراضي الرعية فكان سربه بعد عبد الجليل سعيد ولاجل الطلب حرر بتاريخه شهر محرم سنة 1384 هجرية شهد على ذلك عبد الرب مفلح واحمد سيف مفلح والله خير الشاهدين ويعرض هذا على الشيخ محمد بن يحي لامضائه. ومن بعد سرب عبد الحلیم سرب علي سلام. الذي صحه لعبد الحلیم بن الحاج سيف مفلح الناهبي من سرو بماء غيل الكسار صحه له ما ذكر.

Praise be to Allah,

While of selection of whole peasants of Al-Anbow in Ash-Shaa'wbah to Ash-Shiykh Mohamed Yehya Abdulgabar, to distribute water of Al-Kuser's spring. Accordingly, he made order to us to measure the area of the valley of Adana. So I and Al-Haj Abdurab Mufleh measured the area according to the order of Ash-shiykh and to the agreement of whole peasants. The area is four hundreds and thirty thousands. Then we gave the list of measured area to Ash-Shiykh Mohamed Yehya. He put for ten thousands one turn (A'sr =12 hours). His area is twenty thousands so he has two turns (A'asrian) from whole of forty three turns. The turns followed one by one according to the agreement of the peasants. So, the turn of Ash-Shiykh was after the turn of Abdulgalil Saeed. It wrote in Moharam 1384 H, witnessed for that Abdurab Mufleh and Ahmed Saif Mufleh, but Allah is the best witnesses. This must be submitted to Ash-Shiykh Mohamed Yehya for his signature.

“After turn of Abdulhalim is the turn of Ali Salam”.

In the top: 1) In the name of Allah, it accepted what written by the Q'adhy according to the agreement under his responsibility. And it sealed by the director of Al-Hogariyah on 6 of Al-Q'a'da 1384 H.

2) It is concluded for Abdulhalim the son of Al-Haj Saif Mufleh An-Nabihy from the turns of the water of the spring of Al-Kuser what it mentioned in the document.

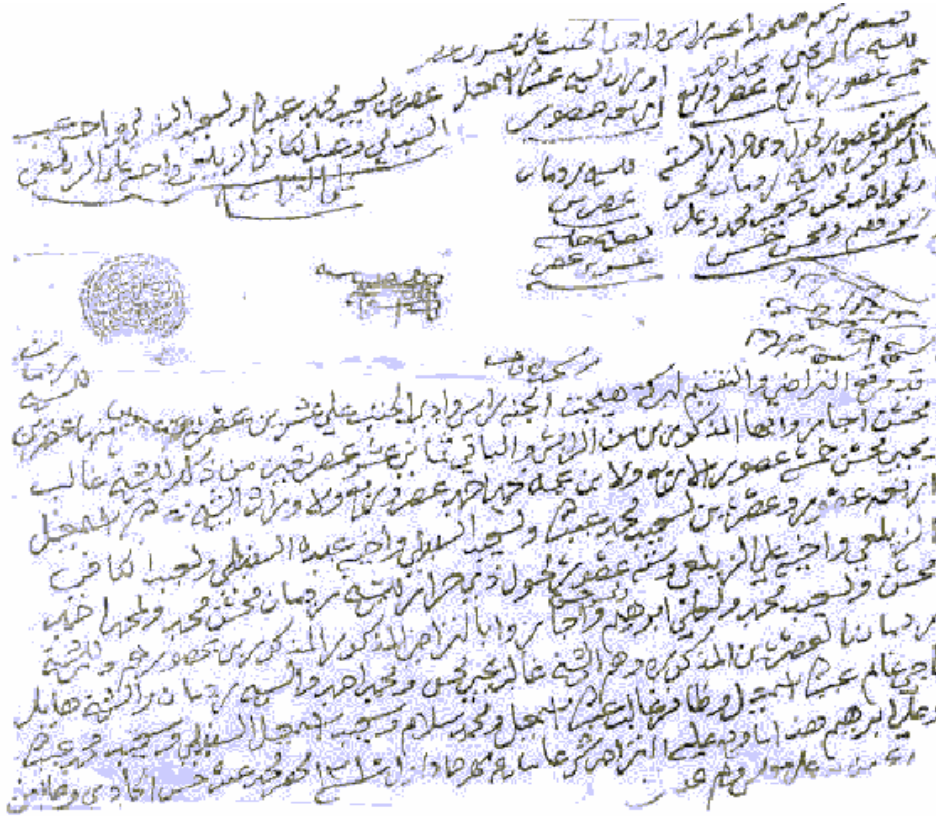


Fig. 3: Water-right distribution of Haygat Al-Gana pool in Hugarah Bany-Yousf

قسمه بركة هيجه الجنه رأس وادي الحنتب على عشرين عصر. للشيخ غالب يحيي خمسة عصور إلابع ومحمد احمد عصر وربع واولاد الشيخ عبد الله إسماعيل اربعة عصور. عشرين لسعيد محمد عبده ولسعيد السنبلتي واخيه عبده السنبلتي وعبد الكافي الزيلعي واخيه علي الزيلعي على التراضي. وستة عصور لحول ذي حرار الستة المذكوره للشيخ ردمان محسن ولمحمد احمد محسن وسعيد محمد وعلي إبراهيم ومحسن حسن. للشيخ ردمان عشرين يصبح جمله عشرين عصر.
الحمد لله وحده

قد وقع التراضي والتقسيم لبركة هيجة الجنه رأس وادي الحنتب على عشرين عصر منها عشرين للشيخ ردمان محسن اجازو بها المذكورين من الرأس والباقي ثمانتي عشر عصر تعين منذلك للشيخ غالب يحيي محسن خمسة عصور إلابع ولابن عمه محمد احمد عصر وربع واولاده الشيخ عبد الله إسماعيل اربعة عصور وعشرين لسعيد محمد عبده الله ولسعيد السنبلتي واخيه عبده السنبلتي ولعبد الكافي الزيلعي واخيه علي الزيلعي وستة عصور لحول ذي حرار للشيخ ردمان محسن محمد ولمحمد احمد محسن ولسعيد محمد وعلي إبراهيم ومحسن حسن واجازو بالتراضي المذكور المذكورين بحضورهم للشيخ ردمان العصريين المذكوره وهم الشيخ غالب يحيي محسن ومحمد احمد والشيخ ردمان والشيخ هايل ناجي غانم عيادته إسماعيل وظافر غالب وسعيد محمد عبده وعلي إبراهيم هذا ما وقع عليه التراضي شرعا عبدالله إسماعيل ومحمد سلام وسعيد إسماعيل السنبلتي بتاريخه شهر جماد اول سنة 1310 هجري بحضور محمد عبده حسن الحمادي وياسين فارغ من بني علي مغلس وجمع غفير.

The top: Water of Haygat Al-Gana pool divided among the families of wadi Al-Hatab to 20 turns. Ash-Shiykh Ghalib Yehya 4 and $\frac{3}{4}$ turns, Muhamed Ahmed 1 and $\frac{1}{4}$ turn, son of Ash-Shiykh Abdula-Ismaa'il 4 turns, 2 turns for Saeed Muhamed Abdu, Saeed Assomboli and his brother Abdu Assomboli, Abdulkafi Azailaa'y and his brother Ali Azailaa'y according to the agreement among them, 6 turns for the field named Dhee Hirar, the 6 turns for Ash-Shiykh Radman Mohsen, Mohamed Muhsen, Saeed Mohamed, Ali Ibraheem and Muhsen Hasan also for Ash-Shiykh Radman 2 turns; all together become 20 turns.

In main document: al-Hamdulillah and then,

Already agreer happened and distribution of water of pool of *Haygat Al-Gana* in the top of Wadi *Al-Hatab* into twenty turns. From it 2 turn admitted by whole people for Ash-Shiykh Radman Muhsen as gift from the whole shared. The remaining 18 turns, for Ash-Sshiykh Ghalib Yehya Muhsen 4 and $\frac{3}{4}$ turns, for his cousin Mohamed Ahmed 1 and $\frac{1}{4}$ turn and for the son of Ash-Shiykh Abdulah-Ismaa'il 4 turns. Tow turns (2) for Saeed Mohamed Abduallah, Saeed Assomboli and his brother Abdu Assomboli, for Abdulkafi Azailaa'y and his brother Ali Azailaa'y. Six turns (6) for field named dheer Hidar for Ash-Shiykh Radman Muhsen Mohamed, Mohamed Ahmed Muhsen, Saeed Mohamed, Ali Ibraheem and Muhsen Hasan. Permitted agreer mentioned the named on their present for Ash-Shiykh Radman the 2 turns and they are Ash-Shiykh Ghaleb Yehya Muhsen, Mohamed Ahmed, Ash-Shiykh Radman, Ash-Shiykh Hael Nagee Ghanem Abdullah Ismaa'il, Dhafer Ghaleb Abdulah Ismaa'il, Mohamed Salam, Saeed Ismaa'il Assomboli, Saeed Mohamed Abdu and Ali Ibraheem. This is what the agreement happened according to the *Sharia'a*. It is written on Gomad Al-Awal 1310 H (Nov, 1892). It was written with attendant of Mohamed Abdu Hasen Al-Hamaadi and Yasen Farea' Bin Ali Mughles and large gathering.

تحت عبادة

بسم الله: بيان سرب الماء حق وادي العجب

العدوف ندحين
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بسم الله: بيان سرب الماء حق وادي العجب

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Fig. 4: Water-right distribution of Wadi Al-A'gab spring in Wadi Al-A'gab in Q'adas

بسم الله: بيان سرب الماء حق وادي العجب

1	العدوف ندحين واصلها ندح	ذى غيره ندح ونصف	ذى زياد ندح ونصف	أطراف الجرف ندح	المشاعين ندح	التريعا واطرافه ندح	الجدله ندح	حول المكوث ندح
2	ذى نماظر ندح ونصف	ذى سويد ندح	العققات ندح ونصف	سبه القحاف ندح	حول الوادي عشويه	حول الكراث الاعلا وحرزبه عشويه	الحوائط عشويه	حول القات عشويتين واصله عشويه
3	ذى حديد والبقر عشويه	ذى لحاح عشويه	ذى مصائب عشويتين	البيستان عشويتين واصلها عشويه	سبه الحلبي والدمه عشويه	ذى يوسف عشويه	الحوائط عشويه	
4	المشجب عشويه	سباب الهجمة اسفل عشويه					ذى البقر عشويه	

على الشرب على ما اشرب على حسب البيان يستمر غالب محمد على هذا البيان مقلد عهد الله ومن شل سرب الثاني حمل عليه حخته قرش لصاحب الأمر يعلم. كل وافق عليه بتاريخه شهر شعبان سنة 1285 هجري على رأي الشيخ غالب الأمر. ثم أبرز عمان سيف ومن إليها تبين لدي شرعا ونفذ حكما لصحت عادة مرور الماء في حول المشاعين جنب العدوف حسبما شهد لدي علي سيف ومهيوب انعم زيد المغلس بعادة حال النزاع بين سعيد محمد الخطيب بلسن وكيله محسن محمد يوسف المنيفي و عقلان ثابت

احمد وكيله والده ثابت احمد وعمه نصر احمد مجاهد المجلس فتقرر ما ذكر نتيجة الاقتاع شرعا في أعلاه وما حصل من ضرر بسبب إنزال الماء يلزم ثابت احمد على عادة أهل الماء كون الماء ينزله من الدفن عاده سرور بممراته. بخط وإمضاء القاضي عيد الكريم ثابت حمدان بتاريخ شهر القعدة سنة 1287 هجري.

بسم الله الرحمن الرحيم

لما حصل الاختلاف بين حميد ثابت ومن إليه وبين عمان سيف ومحمد حسن ذي الجمل ومن اليهما في استحقاق أسفل وادي العجب للسقي من الغيل وكان حميد ثابت ومن إليه قد تمسكوا بالحكم المحرر باطنا صورته بان السقي للاعلافا لأعلا وهذا الاختصاص للإلباس وعدم التصديق على العوايد السابقة تم تجدد حضور المذكورين إلينا وكان أزام محمد حسن ومن إليه بإثبات حجه في استحقاق أسفل الوادي من الماء فابرز مسوده وحكم أما المسوده فتاريخها شهر شعبان سنة 1285 هجريه وعلى ظاهرها إمضائين احدهما سعد انعم و الآخر محسن حسن اشتملت المسوده على تعداد المواضع المستحقة للسقي من الغيل والحكم بتاريخ شهره القعدة 1287 هجري بخط وإمضاء القاضي عيد الكريم ثابت إلى هذه المواضع أسفل الوادي والمعروف ذي عبر وذو زياد ثم أجدله وهي محل النزاع الذي يطالب عمان سيف ومن إليه باجرا مستحقها من الغيل وبذلك تقرر ان حكم على ما هو الظاهر وهو ان الاستحقاق للاعلافا الاعلا ومع ظهور استحقاق الأسفل بالعادة القديمة. تحقق لدينا الوادي كان في حاله واحده على الغيل المذكور فيستمر الناس على عواندهم في السقي ويختاروا مسربا بينهم للتوزيع كل على قدر أرضه والله ولي التوفيق وهو حسبنا ونعم الوكيل. حرر في 25 ربيع الآخر سنة 1372 هجري. أفقيير إلى رحمه الله وعفوه: حسن احمد عبد السلام.

In the Name of Allah,

List of water right turns for spring of Wadi Al-A'gab

- 1). 2 turn for Al-A'adof, wa-aslaha turn; 1.5 turns for Dhee Abdu; 1.5 turns for Dhee Zeyad; turn for Atraf Al-Harf; turn for Al-Mashaa'een; turn for Al-Turya'a wa-atrafu; turn for Al-Gedlah; turn for howl al-miqrath;
- 2). 1.5 turns for Dhee Nemadher; turn for Dhee Suwaid; 1.5 turns for Al-A'aq'mat; turn for Sabat Al-Q'ehaf; ¼ turn (A'shwiyah) for Howl Al-Wadi; ¼ turn (A'shwiyah) for Howl Al-Mikrath al-aa'la wa-Herzibah; ½ turn (A'shwaitain wa-aslaha a'shwiyah) for Howl Al-Q'at;
- 3). ¼ turn (a'shwiyah) for Dhee Hadeed wa-Albaq'r; ¼ turn (a'shwiyah) for Dhee Lihah; ½ turn (a'shwaitain) for Dhee Masaeb; ½ turn (a'shwaitain wa-aslaha a'shwiyah) for Al-Bustan; ¼ turn (a'shwiyah) for Sabat al-H'ilee wa-Ademah; ¼ turn (a'shwiyah) for Dhee Yosif; ¼ turn (a'shwiyah) for al-Hawaet.
- 4). ¼ turn (a'shwiyah) for Al-Mashgab; ¼ turn (a'shwiyah) for Sebab al-Hugmh Asfal; ¼ turn (a'shwiyah) for dhe Al-Baq'r.

(a'la asherb a'la ma-ashrab a'la Hasb al-bayan) might be means irrigation channel must be used as it was before according to the list of the water-right.

Ghaleb Mohamed Ali used this list as Allah commitment, so if one takes the turn of other must pay one Mary Teresa Riyal to the owner of the turn. It is written in Sha'ban 1285 H (Nov, 1868). This is according to the suggestion of Ash-Shiykh Ghaleb Al-Aamer.

Then A'man Saif and his neighbors showed the following:

It is proof to me according to the sharia'a, and implement the order of the tradition passing of the water in the field called Hawl al-Mshaa'een beside the wall of the channel of Al-A'adof field, according to the testified of the witnesses in front of me; Ali Saif and Mahyob An-a'am zied Al-Mughles for the custom of the problem case between Saeed Mohamed Al-Khatib with his lawyer Muhsen Mohamed Yosif Al-Munifi and A'q'lan Thabit Ahmed with his lawyers his father Thabit Ahmed and his uncle Nasr Ahmed Mugahed Al-Mughles. It determined according to the Sharia'a and due to what cleared above and the damage happened due to passing of water, Thabit Ahmed must obligate to custom of owner of water because water is passing from Adefn as turns in his way. It written by Q'adhy Abdulkarim Thabit, Allah blessed him, on the month of Al-Q'a'dah 1287 H (January, 1871).

In the name of Allah, Most Gracious, Most Merciful,

When the problem raised between Hamed Thabit and his neighbors in one side and A'man Saif and Mohamed Hasen dhe Al-Gomal and his neighbors from other side; about the water right from Wadi Al-A'agab's spring, for the area downstream of Wadi Al-A'agab. In

which Hamed Thabit and his neighbors consolidate on the solution shown in the document, “irrigation is al-aa’la fal-aa’la”, and this rule for must problems. Due to the differences in opinion regarding the custom we order Mohamed Hasen and his neighbors to bring their evidence document to show the water right for downstream area of wadi Al-A’agab. So they brought the document with orders dated Shaa’bn 1285H (above) sealed by two signatures one for Sa’d Ana’am and the another for Muhsen Hasan. It includes the locations of the areas have water right from spring of Wadi Al-A’agab and the order dated Al-Q’a’dah 1287 H with hand writing and signature of Al-Q’adhy Abdulkarim Thabit. The names of the locations that have water right downstream of Wadi Al-A’gab and they known by Dhee A’abr, Dhee Zeyad, Al-Mashaa’en and Al-Gedlah where is conflict located where A’aman Saif and his neighbors want the water right to applied for. So it is ordered to follow what it shown in the document in the rule of “al-aa’la fal-aa’la”, also with occurred the right of downstream by old custom. It is cleared to us that wadi was in one rule from spring. So it is wisd to people to continue in their custom in irrigation and they have to choose one person to regulate distribution of water among them according to right of each peace of land. “Wallah walee-Atofiq’ wahowa hasbona wane’a’ma al-wakeil”. It wrote on 25th of second Rabea’ 1372 H. (January 11, 1953). Signed by, Husein Ahmed Abdusalam.

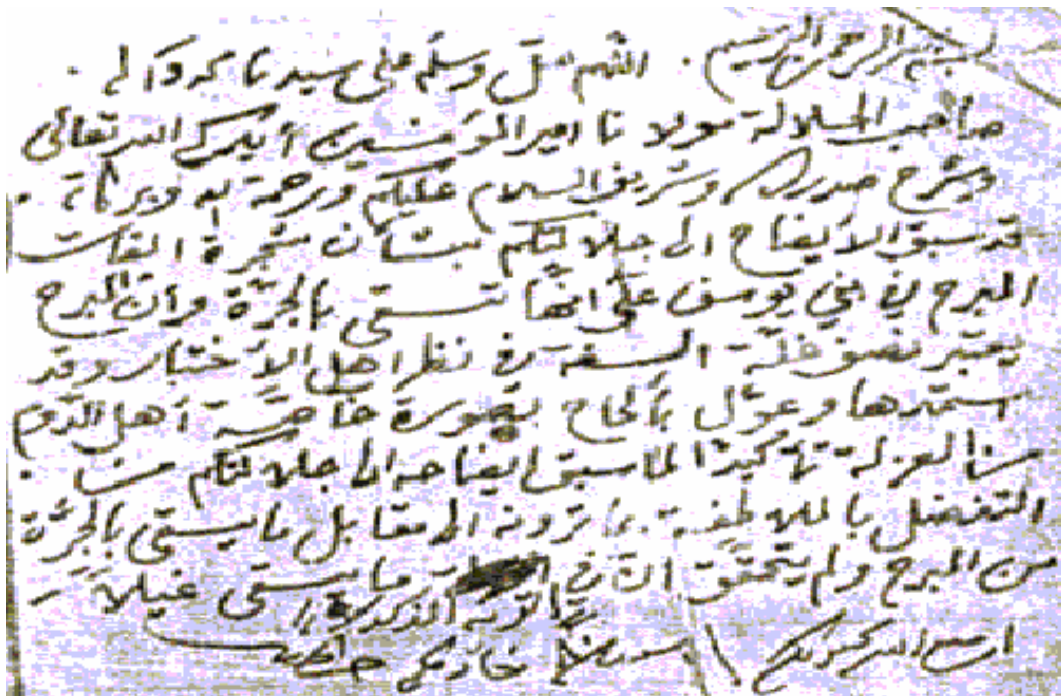


Fig. 5: Letter from the Director of Al-Hugariyh to Al-Imam

بسم الله الرحمن الرحيم. اللهم صلي وسلم على سيدنا محمد وآله. صاحب الجلالة مولانا أمير المؤمنين أيديكم الله تعالى وشرح صدركم وشريف السلام عليكم ورحمة الله وبركاته. قد سبق الإيضاح إلى جلالكم بشأن شجرة القات المبرح في بني يوسف على أنها تسقي بالجرة وأن المبرح يعتبر نصف غلة السنة في نظر أهل الاختيار وقد استمدها وعول بالحاح بصورة خاصة أهل الدوم من العزله تأكيدا لما سبق إيضاحه إلى جلالكم من التفضل بالملاطفة بما ترونه إلى مقابل ما يسقي بالجرة من المبرح ولم يتحقق أن في القرية المذكورة ما يسقي غيلا. أرفع الله قدركم. سنة 1380 هجري. خادمكم حسين الجنداري (عامل الحجرية في ذلك الوقت).

In the name of Allah, Most Gracious, Most Merciful. Allah’s bless and peace upon our profit Mohamed and his descendants. His majesty Khalif of believer, Allah supports him and to comfort his chest. Best greeting and peace upon you. It described to you about the tree of Mobarah’s Q’at in Bani-Yousif as it irrigate by “Garah” (about 15 liters container made from mud). Also Mobarah’s Q’at considered ½ productions per year according to the qualitative rank people, it is tradition and people especially of Addawm concerning about this mater confirming

to what we clarified to your honest asking you kindly to answer as you see to what can consider regarding to what it is irrigating by “Garah” for Mobarah’s Q’at. In fact does not found any Q’at irrigated from spring in Addawm village.

Date 1380 H. Signature of your servant, Al-Gendary

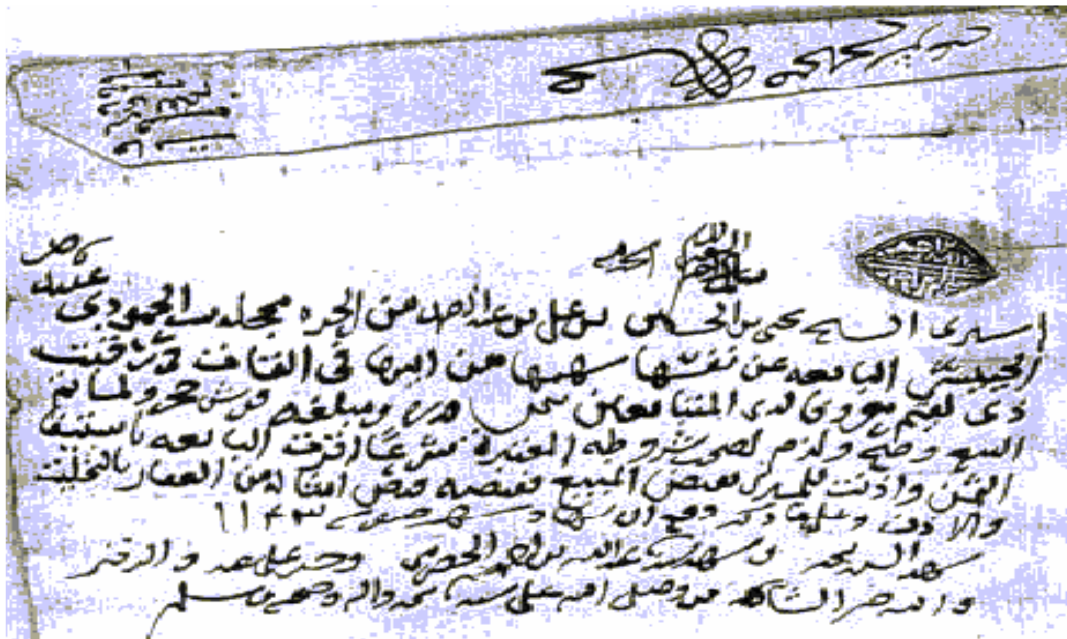


Fig. 6a: Document Showed the Age of Q'at in Addawm

الحمد لله

اشترى الشيخ يحيى بن الحسين بن علي بن عبد الصمد من الحرة مجله بنت الحمودي عبيد الحبيشي ألبائعه عن نفسها سهمها من أبيها في القات في رقبت ذي لقيم معروف لدى المتبايعين بثمن قدره ومبلغه قرش حجر ولما تم البيع وصح ولزم لصحت شروطه المعتبرة شرعا أقرت ألبائعه باستيفاء الثمن وأذنت للمشتري بقبض المبيع فقبضه قبض أمثاله من العقار بالتخليه والإذن وعلى ما ذكر وقع الاشهاد شهر صفر سنة 1143 هجري. شهد كل من السيد محمد والسيد عبد الله بن احمد الحضرمي وحسن علي سعيد والفقيه والله خير الشاهدين وصلى الله على سيدنا محمد وآله وصحبه وسلم.

Praise be to Allah; Ash-Shaiykh Yehya bin Al-Husain bin Ali bin Abduasmad bought from the free woman named Muhgelah bint Al-Hamudy A’ubaid Al-Hubaihy, which sell herself her inheritance from her father the Q’at in “Raq’bat Dhee loq’im”. It is known among them (seller and buyer) with price of one Rail of Maria Teresa. So the sell and buy completed as the conditions fulfill according to the Islamic Sharia’a and seller accepted and received the price and permitted the buyer to take the sold and he (buyer) received it as another of his land with over hand and permission. For that witnesses signed, dated, Safar, 1143 H (August, 1730). The witnesses, As-Syed Mohamed, As-Syed Abdulah bin Ahmed Al-Hadhrami, Hasen Ali Saeed, the poor to Allah (writer) and Allah is the best witnesses. Then Allah’s blessing and peace be upon our profit Mohamed, his descendants and companions

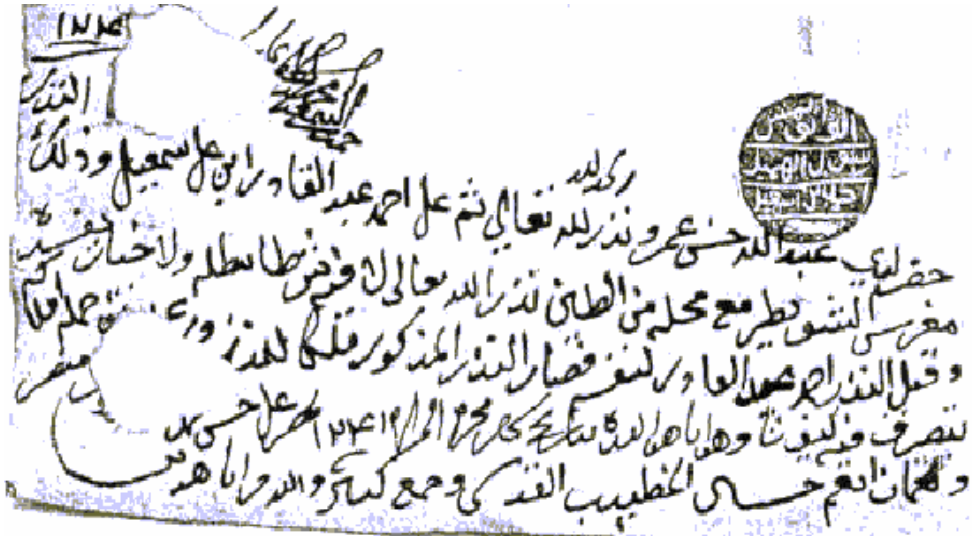


Fig. 6b: Document showed the age of the Q'at in Addawm

الحمد لله

حضر لدي عبد الله حسن عمر ونذر لله تعالى ثم على احمد عبد القادر ابن اسماعيل وذلك النذر مغرس الشويطر مع محله من الطين نذر لله تعالى لا فيه شرطا يبطله ولا خيار يفسده وقبل النذر احمد عبد القادر لنفسه فصار النذر المذكور ملك للمذكور من جملة أملاكه يتصرف فيه كيف شاء وهذا بيده. بتاريخ شهر محرم الحرام 1241 هجري. شهد علي حسن ونعمان انعم حسين الخطيب القدسي وجمع كثير والله خير الشاهدين.

Praise be to Allah, come to me Abdulla Hasen A'umar and vowed for Allah be He raise for above and then for Ali Ahmed Abdulq'ader ibn Ali Ismaa'el one tree of Q'at called Ash-Shuwaiter with the land where it grown in. It is a vow for Allah without and conditions prevent it. So Ahmed Abdulq'ader accepted it for himself then the vow became part of his owning things. He can do what ever he wants to do with it. And this is in his hand. Dated on Moharem 1241 H (August, 1825), witnessed by Ali Hasen Ahmed, Noa'man Ana'am Husain Al-khatib Al-Q'adasy and crowded gathering and Allah is the best witnesses.

Table 2: Agro-chemical used in Q'at field in Addawm village

1997						
Items	Farmer 1	Farmer 2	Farmer 3	Farmer 4	Farmer 5	Farmer 6
Area of field (m ²)	121.5	51	50	80	80	100
Date of 1 st spray	11/10/97	15/11/97	21/12/97	-	19/11/97	30/10/97
Dimethoate (ml)	100	--	100	--	100	100
Perfikthion (ml)	--	--	--	--	--	--
Seven (gm)	250	--	--	--	85	57
Dipterix (gm)	--	57	170	--	--	--
Date of adding fertilizer			28/12/97			
Fertilizer, urea (kg)	--	--	2			
Date of 2 nd Spray			28/3/98		30/11/97	
Dimethoate (ml)			--	--	--	
Perfikthion (ml)			--	--	--	
Seven (gm)			--	--	85	
Dipterix (gm)			85	--	--	
Date of 1 st harvest	2/12/97	30/12/97	8/2/98	15/12/97	21/12/97	29/11/98
Date of 2 nd harvest			31/3/98			
Number of spray	1	1	2	--	2	1
Time from last spray (days)	52	45	3		21	30
Total added (ml)	100	--	100	--	100	100
Total added (gm)	250	57	255	--	170	57
1998						
Date of 1 st spray	16/9/98	23/9/98	24/10/98	19/8/98	28/9/98	6/9/98
Dimethoate (ml)	300	100	200	--	100	200
Perfikthion ml	--	--	--	200	--	--
Seven (gm)	--	--	142	85	85	113
Dipterix (gm)	28.35	28.35	--	--	--	--
Date of adding fertilizer			28/10/98			
Fertilizer, urea (kg)	--	--	4			
Date of 2 nd Spray	--	29/9/98	15/11/98	--	1/10/98	--
Dimethoate	--	100	200	--	100	--
Perfikthion ml	--	--	--	--	--	--
Seven (gm)	--	--	142	--	85	--
Dipterix (gm)		57	--		--	
Date of 1 st harvest	4/10/98	4/10/98	27/11/98	26/8/98	8/10/98	23/9/98
Number of spray	1	2	2	1	2	1
Time from last spray (days)	20	5	12	7	7	17
Total added (ml)	300	200	200	200	200	200
Total added (gm)	28.35	85.35	284	85	170	113

Source: By the author, 2004.

Table 3: The cost of the input to the field of Q'at and the income in Addawm 1997 and 1998

year	Items	Farmer 1	Farmer 2	Farmer 3	Farmer 4	Farmer 5	Farmer 6
1997	Area (m ²)	121.5	51	50	80	80	100
	Male Family labor (day)	1	6.5	53.5	4	38	3
	Female Family labor (day)	1	0	22	0	0	0
	Male Rental labor (day)	2	0	0	0	0	0
	Rate per day for male (YR)	400					
	Rate per day for female (YR)	200					
	Cost of family labor (male) YR	400	2600	21400	1600	15200	1200
	Cost of family labor Female YR	200	0	4400	0	0	0
	Total cost of family labor (YR)	600	2600	25800	1600	15200	1200
	Total cost of rental labor (YR)	800	0	0	0	0	0
	Cost of water (YR)	6000	5000	700	0	4500	0
	Cost of Insecticide (YR)	800	500	730	0	580	310
	Cost of Fertilizer (YR)	0	0	200	0	0	0
	Total cost of input include family labor (YR)	8200	8100	27430	1600	20280	1510
	Total cost of input exclude family labor (YR)	7600	5500	1630	0	5080	310
	Total income (YR)	15000	10100	20800	2000	10000	7200
	Net profit include family labor cost (YR)	6800	2000	-6630	400	-10280	5690
	Net profit exclude family labor cost (YR)	7400	4600	19170	2000	4920	6890
	% of net profit from total income with family labor	45	20	-32	20	-103	79
	% of net profit from total income without family labor	49	46	92	100	49	96
Profit include family labor cost/ha (1000 YR)	560	392	-1326	50	-1285	569	
Profit exclude family labor cost/ha (1000 YR)	609	902	3834	250	615	689	
1998	Area (m ²)	121.5	51	50	80	80	100
	Male Family labor (day)	15	2	18	3	0	4
	Female Family labor (day)	0	0	0	0	2.5	0
	Male Rental labor (day)	4	0	7	6	1	2
	Rate per day for male (YR)	400		400	400	400	400
	Rate per day for female (YR)	200					
	Cost of family labor (male) YR	6000	800	7200	1200	0	1600
	Cost of family labor Female YR	0	0	0	0	500	0
	Total cost of family labor (YR)	6000	800	7200	1200	500	1600
	Total cost of rental labor (YR)	1600	0	2800	2400	400	800
	Cost of water (YR)	1400	0	2000	0	0	0
	Cost of Insecticide (YR)	800	550	1500	550	800	600
	Cost of Fertilizer (YR)	0	0	250	0	0	0
	Total cost of input include family labor (YR)	9800	1350	13750	4150	1700	3000
	Total cost of input exclude family labor (YR)	3800	550	6550	2950	1200	1400
	Total income (YR)	12000	5500	10000	19200	18000	8300
	Net profit include family labor cost (YR)	2200	4150	-3750	15050	16300	5300
	Net profit exclude family labor cost (YR)	8200	4950	3450	16250	16800	6900
	% of net profit from total income with family labor	18	75	-38	78	91	64
	% of net profit from total income without family labor	68	90	35	85	93	83
Profit include family labor cost/ha (1000 YR)	181	814	-750	1881	2038	530	
Profit exclude family labor cost/ha (1000 YR)	675	971	690	2031	2100	690	

Source: By the author, 2004.

Table 4a: Calculation of cost of input and output of Sorghum's field 1 in Al-Ma'amirah in 1997 and 1998

1. Input work Type of work	Field 1 = Marda' Ziyad 1997 (Area = 1166 M2 =0.117 ha)				Field 1 = Marda' Ziyad 1998 (Area = 1166 M2 =0.117 ha)			
	Family labor Day		Rental labor day		Family labor Day		Rental labor Day	
	Male	Female	male	female	male	female	Male	female
adding Animal Manure						0.7		1.3
1 st plowing	4		2.0	4.0			2.2	4.3
2 nd plowing	1		0.5	0.5				
Sowing	0.4		0.2	0.2	0.5	0.4	0.5	0.3
Thinning		1.5		2.0		9.8		4.8
adding fertilizer		0.2						0.1
Remove sediment 'sand'			0.7		5.5			
plowing between plant 'Glab'/ hoeing between plant ' Mihwad'	0.5		0.5	0.5	6.5			
Collecting feed for animals		3.9		1.5		3.9		1.5
Holding plant before harvesting			1.0				2.5	
Sour' remove plant's leaves				9.5	0.3	2.0		5.5
Harvesting	0.5		0.8	1.3	0.75	0.8	0.8	2.3
balling straw and transfer it				1.5		0.3		2
Collecting dry leaves		1.25				1.25		
Remove residuals 'Kushah'	2				1		2	
Clean and transfer 'Kushah'				1.5		0.67		2.0
Threshing			1.0				1.0	
Total work in day	8.4	6.8	6.6	22.5	14.6	19.8	8.9	24.1
Total input labor cost YR	3367	1492	2747	4923	5833	4245	3667	5492
2. input materials				YR				YR
Cost of draughts animal				4750				3600
Cost of animal manure				0				2880
Cost of Fertilizer 'urea' YR				240				320
Cost of Seed for planting YR				750				750
Total input 1+2				18269				26796
3. production= output		YR/unit				YR/unit		
Grain kg	118	46		5428	229	46		10534
Straw Bundle	99	40		3960	135	40		5400
dry leaves Bundle	100	10		1000	200	10		2000
Dry Residuals Bundle	120	5		600	157	5		785
Animal fodder Bundle	120	30		3600	120	30		3600
Grain Ton/ha	1.01				1.96			
Straw Ton/ha	3.17				4.49			
Total output YR				14588				22319
<i>Profit exclude family cost YR</i>				1178				5610
<i>Profit include family cost YR</i>				-3681				-4477
<i>Profit exclude family cost/ha</i>				10103				48113
<i>Profit include family cost /ha</i>				-31569				-38396

Source: By the author, 2004.

Table 4b: Calculation of cost of input and output of Sorghum's field 2 in Al-Ma'amirah in 1997 and 1998

1. Input work	Field 2 = Dhynusair 1997 (Area = 875 M ² =0.087 ha)				Field 2 = Dhynusair 1998 (Area = 875M ² =0.087 ha)			
	Family labor Day		Rental labor Day		Family labor Day		Rental labor Day	
Type of work	Male	Female	Male	Female	Male	Female	Male	Female
Adding Animal Manure						0.5		1.0
1 st plowing	3		1.5	3.0			2.0	4.0
2nd plowing	0.8		0.4	0.4	0.3			0
Sowing	0.3		0.2	0.2		0.3	0.3	0.2
Thinning		1.5		3.8		6.3		4.2
Adding fertilizer		0.2						0.1
Remove sediment 'sand'					2.1			
Plowing between plant 'Glab' / Hoing between plant 'Mihwad'	0.5		0.5	0.5	6			
Collecting feed for animals		1.4				1.4		
Holding plant before harvesting			1.0				1.0	
Sour' remove plant's leaves		0.5		9.5		1.0		5.0
Harvesting	0.5		0.8	1.3	0.3	0.4	0.3	0.9
Balling straw and transfer it				1.5		0.25		1.5
Collecting dry leaves		0.4		0.4		0.4		0.4
Remove residuals 'Kushah'			1		1		1	
Clean and transfer 'Kushah'				1.0		0.42		0.8
Threshing			0.7				0.7	
Total work in day	5.2	3.9	6.0	21.5	9.7	11.2	5.3	18.1
Total input labor cost YR	2067	825	2467	4720	4203	2375	1837	3828
2. Input materials				YR				YR
Cost of draughts animal				4000				3300
Cost of animal manure				0				1920
Cost of Fertilizer 'urea' YR				200				200
Cost of Seed for planting YR				750				500
Total input 1+2				15029				18163
3. Production= output		YR/unit				YR/unit		
Grain kg	83	46		3818	181	46		8326
Straw Bundle	80	40		3200	108	40		4320
Dray leaves Bundle	85	10		850	156	10		1560
Dry Residuals Bundle	90	5		450	106	5		530
Animal fodder Bundle	60	30		1800	64	30		1920
Grain Ton/ha	0.95				2.07			
Straw Ton/ha	3.33				4.94			
Total output YR				10118				16656
Profit exclude family cost YR				-2019				5071
Profit include family cost YR				-4911				-1507
Profit exclude family cost /ha				-23074				57954
Profit include family cost /ha				-56126				-17223

Source: By the author, 2004.

Appendix: 4 Pictures



Fig. 7: Drought tolerance of Q'at during dry season
Photo: By the author, 2004.



Fig. 8: Effect of plastic bags uses for Q'at in the environment
Photo: By A. Al-Kholidy.