Report on Land and Water Rights with other relevant topics, in the Montane Plains and Wadi Rima (MPWR) Project, Yemen Arab Republic

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ITINERARY

September

4th Arrival in Sana'a
7th Interviews with YAR Officials and others
8th Ditto - travel to Zabid
9th Attend meeting between Project and farmers at al-Husainiyah
   Return to Sana'a
10th - 16th Field work in the Montane Plain, staying overnight in
   Sana'a or Yerim Camp
17th Travel to Mokhaidah
18th - 24th Field work in Wadi Rima area
25th - 27th Taiz and visit to Dhi Sufl district
28th - 30th Sana'a, visits and writing report

October

1st - 5th Writing report, etc
6th Travel to Beirut
9th Arrive in UK

Sources of special relevance consulted

Hisham al-Akhras, A note on land tenure in Yemen, mimeograph, September
   1972 (rather general)
A M A Naktari, Water rights and irrigation practices in Lahj, Cambridge
   1971
A M A Naktari and R B Serjeant, Land Tenure and water rights in Wadi Jizan,
   Part of the Sir William Halcrow Report to the Government of
   Saudi Arabia
H Mundy, Socio-economic aspects of the Wadi Naur Region, in a report to
   the World Bank
R B Serjeant, Cultivation of cereals in mediaeval Yemen, Arabian Studies,
   1, London-Cambridge 1974
   Star calendars and an almanac from south-west Arabia. Anthropos,
   Fribourg, 1954, xlix
   Some irrigation systems in Hadramawt, Bulletin of the School of
Al-Tayyab Zaia al-Abdin, Chapter on Taxation in the Yemen from draft
   Cambridge Ph.D thesis
Tesco-Viziterv-Vituki, Survey of the agricultural potential of the Wadi
   Zabid, Budapest, 1971
Introductory

It is not proposed to deal with the general outlines of spate or perennial stream (wadi) irrigation which must be known to all members of the team, and in any case these are described in considerable detail in the list of sources above along with diagrams and photographs.

The Wadi Kima' presents a much more complicated problem than the Montane Plain, at least at first sight, and so it will be dealt with first.

In the case of the various other subjects upon which enquiries were made, especially in the montane Plains, I have left typed copies of my notes with the project, so these will be dealt with in this report only briefly, in outline. Moreover where detail is concerned, I should normally in my field work go over my notes, mark points for checking, and significant lines of further study. This would have required much more time than I had at my disposal. I am satisfied that my notes are on the whole pretty accurate and that they will be a useful guide-line to more extensive work. To take an example in point - local weights and measures vary from the standard laid down during the times of the Hamid al-Din Imam, and of course one another. It will probably be necessary in assessing crop yields to have a detailed knowledge of these.

The Wadi Kima'

Like so many (if not all) wadi irrigated complexes Wadi Kima' irrigation is the subject of a dispute over water-rights. Most likely a number of minor differences also exist which would come to light when a more detailed study can be made of the system than is possible during my own brief visit. Much of the time such disputes seem to lie dormant (though not forgotten) but they can spring to vigorous life with some new turn of circumstances - such as, for instance this very MPWR Project! There is however no prima facie reason to suppose that the Project itself is likely to become the target for either of the two main interests involved. On the contrary cooperation and spontaneous friendliness have been encountered by us, despite the rigours of Ramadan. It is the YAR Government which will have to act, if indeed action is taken at all, to settle the dispute which goes back for some 40 years - not in fact a long time for southern Arabia.
Historical background

To understand the situation a basic historical background is necessary.
The Zaraniq (singular Zorungqi) tribal confederation of the Tihama in
whose territory the Wadi Rima lies, were a turbulent group which caused
the Ottoman Turks, before World War I, great annoyance. In their effort
to remain free of Turkish control they kept in touch with the British in
Aden, and, in 1915, offered to place themselves under British protection.
When the Imam Yahya took Hodeidah from the former British protégé the
Idrisi of 'Asir, the Zaraniq approached the British, offering to fly the
British flag. Then from 1926 they fought the Imamic Government of San'a
for some four years.

In September 1929, Imam Yahya's son Ahmad (later to succeed him as Imam)
successfully occupied Bait al-Paqih and all the Zaraniq country. In
simple terms Ahmad conquered the Tihama, and he dealt severely with the
troubulent Zaraniq chiefs, sending them to Hajjah prison, where many are
said to have perished.

It may be assumed that Ahmad imposed the taxation system which was applied
to the Shafi'i districts, in general, of the Lower Yemen and Tihama, and
which they found so oppressive owing to the corruption of the officials
who operated it. Under this system the Government sent out assessors
and inspectors to estimate the tax on grains (zakat or 'ushur). In the
Zaidi north on the other hand the assessment of the tribes was made by
local Shaikhs who were also responsible for collecting the tax - always
taken in both cases in kind, and stored in Government madfanas (underground
silos). In some parts of the Yemen the Republican Government has substi-
tuted the latter system where the former system of direct taxation was
in operation.

Perhaps even before the complete conquest of the Tihama, Imam Yahya's
son, Saif al-Islam Muhammad al-Badr is said to have opened a water-channel
on the north side of the Wadi Rima, to draw off running water to irrigate
a large area of al-Jarubah which until that time had been bush or forest
(ghabah) and was uncultivated. The new take-off water-channel, known as
Hashrhab al-Dawlah (and now as hashrhab al-Hukmah), is situated further
up-stream than the take-offs for the channels on the south side of the
wadi which was under cultivation before the new channel was opened.
According to the theory of Islamic shari'ah law, broadly speaking, water is mubah or something that cannot be owned, but once a water channel has been dug to divert it then there is acquisition of rights in this water so acquired. Furthermore the bringing of 'dead' land into cultivation is considered meritorious, and this land when developed would become the property of the developer. The question is fully discussed in Maktari, Water Rights, p. 9, seq., for which see Appendix.

The Islamic house therefore in setting up this estate al-Jarubah, known by the technical term of safiyah could validly argue that it was doing in accordance with shari'ah law. On the other hand the Zaraniq tribes would maintain that this was tribal land and that no person or institution has any right to take over their land (and presumably water) without appropriate compensation or purchase. Herein lies in fact a conflict in law and authority between the tribes and any centralised government. An exactly parallel case is reported by Maktari p. 10.

We were informed by a well-informed merchant that complaints were made by the local people to Imam Yahya (i.e. prior to 1948) about the Mashrab al-Dawlah channel, and he ordered it to be closed, but this order was ignored.

Nevertheless, said this merchant the channel did not have any (bad) effect during the days of Imam Yahya - i.e. it did not harm the south side of the Wadi. Later around about 1950 or so, the channel was extended (he probably meant 'deepened') by natural causes and this did make a difference to the water available for the south side of the wadi.

An innovation said to have been made by the agent for Imam Ahmad, was to join al-Ni'īn, a channel below Mashrab al-Dawlah, to the Mashrab al-Dawlah. Previously al-Ni'īn had been maintained by small landholders who drew water from it. It was then that the drawing off of water by these two channels on the northern side began to affect the channel al-Maliki and other channels below it on the southern side. It may be deduced that these two channels also adversely affected the al-Wajih channels above al-Maliki on the southern side.

After the 1962 coup the tribes of Sina' went to President Sallal and wanted to assert their old rights, but were advised by a prominent landholder to hold back meanwhile and not stir up trouble at an unsettled and
critical time. They felt however that they did not obtain satisfaction.

In 1962-63, Dr Husni informed us, the YAR Government leased the water and the safiyah of al-Jarubah to al-Vajih, after having sequestrated it along with other lands held by ruling family and other noble houses. (There were safiyahs of various kinds held by members of the Iman's family and other nobles in many parts of the Yemen. It seems that, however, a dispute arose over the rent, so the Government tried to run the safiyah itself, but not successfully and it proved unprofitable. About 1970 or 1971 it came under the Governors of Hodeidah which leased it to the Zaramiq, but this did not work wither, and went back to the Ministry of Agriculture.

There is an official (a sort of manager) in charge of the division of the waters (manur 'ala tapqim al-miyah), and he has a soldier to act as supervisor, at al-Mishrafah, over destruction and repair to canals. This official has jurisdiction over the division of water from the channels Mashrab al-Dawlah/al-Hukumah and al-Mi'in, but no other water comes under his jurisdiction.

We are informed quite recently there had been a judgement (mahakannah) from the Minister of Justice in person in the Wadi Rina' dispute, but execution has been postponed until they see if perhaps agreement can be reached by conciliation (suh). The Project should be informed as to the general direction of this judgement if possible. The people of the southern bank are said to have a record (sijill) showing the legality (al-shari'iyah) of their claims, proving that the land (of al-Jarubah safiyah) belongs to them, and that the north bank channel (shariij) is an innovation.

It is clear that the Project should also be informed, at a certain stage, what the YAR Government intends to do with regard to the state holdings of al-Jarubah and the vexed question of water rights, if in fact it intends to do anything at all. The Project will, I assume, report objectively on what it considers the ideal solution to technical problems, but if the YAR Government makes certain politico-legal decisions on water, it is conceivable that the Project's proposals might need to be modified to meet them.

While the YAR Government, one would imagine, is not very likely to take
measures detrimental to its holding at al-Jarubah which is, when all is said about water rights, a going concern, it would appear, on the basis of the information available, that it might not be too difficult to make concessions over the sale of water which is claimed by the landowners of the southern bank to be rightfully theirs.

Deflectors and Water Channels

a) South Side
To understand the situation in the Wadi Kuma it is necessary to know something of the water channels and deflectors (mas refr) which lead the water from the main wadi into the various complexes of fields. The following list of channels on the south side which, I suppose, would already have been in existence when the first new channel on the north side was cut, I believe to be accurate.

1. Hashah al-Ashraf, probably also called Hashah Sawadih belonging to Ahmad and Muhammad al-Wajih
2. Hashah Fari', belonging to the Banu 'Ali Khadad Ghalib branch of al-Wajih family. It waters part of the Banu Sawadih and al-Dumainah
3. Al-Haliki
4. Al-Zurrah (This is bilad al-Salam)
5. Al-Yusufi
6. Al-Musaffiyah (This is bilad al-Musawifah)
7. Al-Basit (Of the Quarshiyah)
8. Al-Kurdi (Of the Quarshiyah)
9. Al-Hukaima
10. Hathlan
11. Al-Badawi

The importance of the holdings of the two al-Wajih houses is obvious as their lands will drink first being watered by two top deflectors, and they sell water from them to other farmers. We notice at the Head (Ras) part of the Wadi from which channels split off to north or south a hole (Hishaaq) in the barrier which was open to permit water to go to Dar Ghalib al-Wajih and the village of al-Ma'abiran by way of Hashah Fari (22, ix, 74)

b) North Side
On the northern side the following channels described to us by the Official in charge of al-Jurubah, 'Umar b 'Ali al-Sulafii al-Mihni, who is responsible
for the division of waters of the first two.

1. **Hashrāb Ḥudayd**
   This is known as Hashrāb al-Dawlah or Hashrāb al-Ḥukumah. It takes from the cutting (ḥizz) of the Wadi Rima and goes out to al-Ghawādir and then to the Safī(yah) then from the Safī(yah) to al-Hussainiyah.

   al-Ghawādir is divided into three, a part goes out to al-Shuf'ah (Govt. lands), a part to the lands of Sa'idah, and part to the lands of al-Hijrāb (also Govt. land), and thence to al-Hussainiyah.

2. **Hashrāb al-Ḥi'in**
   It enters south of al-Ghawādir then goes to the beginning/origin of al-Shuf'ah and waters two parts of al-Suf'ah lands, then it join up with the main Hashrāb, and passes on to the three directions.

3. **Hashrāb al-Duwairah**
   It irrigates a piece of the Government land in al-Duwairah, and from al-Duwairah it goes on to al-Hussainiyah.

The top channel is Hashrāb Ḥudayd on the northern side, then comes the two southern channels Hashrāb al-Ashraf and Hashrāb Fari', then al-Ḥi'in.

When al-Ḥi'in channel was linked up with the Hashrāb al-Dawlah the water supply of the southern channel al-Maliki is said to have begun to be adversely affected by the two northern channels.

There is a flood (ṣa'il) two or three times a year, but the stream (ghail) runs nearly all the year round, except for about two months; there is however generally water in the Ras al-Wadi.

If the flood water is much it waters the Wajīh lands without the al-Wajīh families being obliged to purchase water from the channels of the northern side. The Hashrāb al-Dawlah/al-Ḥukumah, i.e. Hashrāb Ḥudayd is higher than the Wajīh channels and if the water of the ghail is insufficient the Hashrāb al-Dawlah is cut into, so as to let water pass on to the Hashrāb al-Ashraf belonging to al-Wajīh.

To let water pass on to other lands further down the Wadi both the Hashrāb al-Dawlah and the Hashrāb al-Wajīh must be cut into. The water that actually flows into the two channels with their deflectors belonging to the al-Wajīh family is further distributed under the supervision of their own
agents (wakil) to farmers outside the Wajih lands who pay al-Wajih for it.

It will be perceived that the al-Wajih family is in a favoured position vis-a-vis the rest of the southern bank, firstly in that their lands, if my understanding of the situation is correct, obtain a larger share of water directly from the qibli since they are higher up the wadi, secondly in that they can sell water surplus to their requirements, and thirdly that they probably may not need to purchase so large a proportion of water as those below them. (These deductions however require confirmation on the ground).

Purchase of Water

An al-Wajih spokesman stated that 'we buy water by the ma'ad', the latter approximately an acre, at 15 to 20 riyals according to the volume of the flood ('ala 'qadr al-defrah). When one buys water by the ma'ad it is understood that the amount of water will be sufficient to fill the field to the top of the bund (zabir). This is worth a lot since with cotton you would have to give the same ground four pumpings while a good soak with flood water as described suffices it for six months.

An alternative method is to purchase water by the day - a day’s water costs 205 riyals, but such water can be distributed as the purchaser wishes, and al-Wajih would perhaps give water to their neighbours, but in return for money.

A man wishing to purchase water either pays cash down, or his Shaikh is responsible to the Government (i.e. as represented by the Manur of al-Jarubah, al-Shulaifi al-Nihmi) for his payment. Payment in the latter case is made when the crop is harvested. The land-holder (malik) and share-cropper (sharik, muzari') appear to share payment for water, but this is to be confirmed.

The Manur of the nafiyah of al-Jarubah, al-Shulaifi al-Nihmi, stated that in the nafiyah the Government pays for getting the water (by maintaining channels, deflectors etc.) not the share-cropper (muzari'). Repairs and maintenance cost from 15,000 to 20,000 riyals annually. These expenses are met by the sale of water (to the south bank farmers) which brings in an annual income of from 20,000 to 50,000 riyals. The money is paid to
the Kasur who is responsible for allocating shares of water within the
wadi of al-Jarubah. Bull-dozers are used for building breaks.

Share-cropping and taxation

The original holder of the safiyyah of al-Jarubah, Saif al-Islam Muhammad
al-‘Adn, received two thirds of the crop and the share-cropper obtained
one third of the crop. The share-cropper was stated to provide the seed
but we did not in this case inquire into what further conditions are
stipulated between the two parties. The tithe (tax) was payable on the crop, even by Saif al-Islam himself.

The Kasur stated that after the tithe has been deducted the share-cropper
in al-Jarubah receives half of the crop, and the Government half.
He added however that there were arrangements between the cultivators
themselves whereby the harvest is divided in the proportion of one third
to two thirds, but we did not follow up this statement as he seemed
a little vague on this point.

The Kasur's statement does not at first sight seem to tally with answers
given at one point in the safiyyah where we made enquiries. There a man
belonging to al-Damainah on the southern bank where he has land of his
own, was working Government land on a share-cropping basis, and stated
that he received only one third of the harvest while the Government received
two thirds. This man was harvesting with hired labour some of it from
Labid, and the labourers were vociferous in their complaints about
the small return they received for their heavy labour. They added that a
woman working with her husband would only receive a sixth of what is paid
her husband in kind, and therefore women refused to work in the field and
were sitting at home.

What is notable over the whole project area is that the crops are assessed
by Government assessors according to the system obtaining in the days of
the Irans - a system which corrupt officials made oppressive to the farmers,
and which I believed had been abolished. It was said that only east of
Saif al-Falal is the system of assessment by local assessors as introduced
to the south since 1962 actually current. This year we are informed a
local 'appraiser' is to be appointed by the Government to assess the farmers.
This would certainly be a popular work and bring the area into line with
most of the rest of the Yemen. At present the assessors for the farmer on the north bank with whom we talked come from Bait al-Faqih, but for the south bank from Zabid - they must fall in different administrative districts. The tithe in kind have to be conveyed by the farmers themselves to Bait al-Faqih and Zabid respectively.

Urban investment in agricultural land

Dr. Hani stated that the merchants of Hodeidah are putting money into purchasing land - I understand him to mean agricultural land - in the Tihama. We did not attempt to investigate this subject in Wadi Rima', but it could have significant economic consequences. It can be assumed however that land purchased by merchants will continue to be worked under share-cropping arrangements of some sort in the case of al-Wajih holdings. In Jizan (Saudi Arabia) this process may have contributed to the elimination of a large number of small land holdings and the development of a small number of very large land holdings. Though it is for the YAR Government to decide on its policy over alienation of land from local small-holders to absentee landlords working their property by employing share-croppers, I feel that this question of land transfers should be studied and eventually be included in the final report to the YAR Government.

Interview with the 'aqil of al-Madan

Al-Madan is in the group of villages known as 'uzlat Salamah of the qada (administrative district) of Zabid. It is watered by two channels called Sharif al-Yusufi and al-Zurran which serve the south bank of Wadi Rima'.

The top barand or deflector of the Wadi is called al-Ras (the Head), and the order of watering follows the standard practice of al-a-'la bi-'l-ala, the upper lands being watered first and the water descending to the lower lands. The Sharif of the water-channels (sharij) has notebooks the size of a small volume on thickness concerning irrigation rights, (ta'wid al-qarad - a term possibly the same as Maktari, p. 73, compensatory allotments of water)). Land documents relating to property are to be found with the 'trustworthy persons' (mawarin), the faqih of the Bani Jibiyah who are themselves big landowners. The introduction of the water channels on the north side of the Wadi was said by the 'aqil to be an innovation (sagul) and therefore unlawful.

In watering the field is filled with water to the top of the bund (zabir)
even if it be of the height of a man. The water is then passed on to the next field.

The land measure is the matad (pl. ma'jadi) which measures 60 dhira' (60 x 60') square. There are both large and small land-holders and the former should hold about 250-300 matads - it being suggested that the sayyadin already mentioned would own holdings of this size. Small-holdings own 10, 15 or 20 matads, and a middling size holding would be from 20 matads upwards. Small holders act as share-croppers (sharik) to large land-holders.

The 'aqil distinguished between rain-land (al-dahi) which is considered poor, and al-wadi, literally valley land, which is considered good. In al-wadi land, which was also described as the place of the water-channels the share-cropper receives a third of the harvest, and the landowner two thirds. In the rain-land (al-dahi) on the other hand the share-cropper receives as much as half of the crop. The 'aqil did however say that the usual share-cropping arrangement was division of the crop on a 50:50 basis. Many poor persons are ready to work as share-croppers and though many people have left the village plenty remain to work on the land. If those abroad heard of a plan for development they would return, but the village has no external source of income such as fishing.

Assistance at the harvest is given by the classes known as Akhdam and Luhuj (who are landless), as also by the itinerant croppers known as hakhdadirah, but anyone whose land is dry (i.e. probably without rain or flood-water) will come to help. For cutting millet (dhurah) these people receive bundles of stalk with the heads. Two or three days later they come to cut off the millet heads. For up to two hours of work a day at this they receive a bushel of millet heads.

Landholdings are fragmented, but there are some owners who have all their holdings in one place. A man's neighbour has the right of pre-emption (chuf'ah), otherwise a landowner may sell to anyone. People are most reluctant to sell land, and the 'aqil said that cases had been known where a man starved to death rather than sell. In pre-emption the neighbour must accept the seller's price or the latter will sell to anyone else who is willing to pay that price but it appears that seller and potential buyer each appoint a mediator to determine on a just price for the land. The pledging of the land (rahn) was said to exist, but we did not go into what seems a complicated subject.
Where taxation is concerned up to now it appears that the system of assessment from the local centre is still in operation and the assessor (mutahamin) comes out from Zabid to assess the crop. The villagers have to take their tax (zakat) to the Government at Zabid. This year however the system favoured by the cultivators where an 'amin' is appointed from the local in-habitants to assess the tax is to be introduced here for the first time.

Fitrak, now become virtually a sort of poll-tax on every member of the family is paid at the end of Ramadan. The amount is decided by the Government in accordance with the price of sorghum at the time - the figure quoted for the current year is 1 riyal, 30 bahars per head, man, woman and child. Another source said that the tax is based on the price of the Prophet’s qa‘ (measure of sorghum).

The agricultural year begins with the month of Mabkar (latter half of May), and there are three harvests (suru') a year:

Mabkar, i.e. saif millet in both wadi and dahi lands
Hamiran, i.e. bulrush millet (dukhn) and gairah (a white millet also known in Zabid)
Tammuz, bulrush millet

In the two Tishrins and the two Kanuns of the Rumi calendar used here, maize is grown in wadi land.

A Date-growing village (Mijnilis)

We only visited one village of this type, and all villages dependent on date-growing are doubtless to be found in the salty coastal regions. They are very different from the grain-growing areas and as they export a good variety of dates (munassif) to places such as Ibb, Taiz, al-Qa'idah market, Bait al-Faqih, Hodeidah and even Sana'a, they have some economic significance. Their land measure is so many dirhams (the space between one palm trench and the next) to the ma‘lad. Detailed notes on our findings are with the project.

Conclusions and Remarks on Wadi Rima

1. A conflict exists over Wadi Rima' water rights in which two interests are involved - the land-owners and farmers on the south bank, and the Government holding (fanisheh) supervised by a Government nominee.
2. It would seem unlikely that the YAR Government would wish to impose a solution to the dispute that would substantially diminish revenues from the Government holding at al-Jarubah.

3. The project could, in theory, come into conflict with these two interests or with a number of individual interests if it proposals include re-allotment of surface waters and particularly if it should wish to alter the existing layout of fields, bunds etc., but no such plans are at present envisaged. There is however no suggestion of hostility by any faction to the project's work.

4. No attempt was made to discuss the use of, or restrictions on the use of underground water resources. It would hardly have been appropriate to do so at this stage.

5. It is very satisfactory that Dr A M A Maktari who has experience with closely similar irrigation systems at Lahj and Jizan is available for consultation on Wadi Rima' problems.

Appendix

We were given a somewhat different list of deflectors by the Fari workman from the afore-going NORTH side list, but it is probably not inconsistent with it. His information for the south side tallied with that of al-Wajih.

1. al-Mudaib
2. al-Ghawadir
3. al-Hindaji/Mundaji (spelling may be wrong)
4. Muhajjam
5. al-Ja'al
7. Warak
8. Bani Humaid
9. al-Duwairah haqq al-Fawashiq

Some of these are obviously names of tribes.

The Montano Plains

In this area a number of villages was visited, and discussions held with farmers. Officials were consulted in Ma'bar, Dhamar and Yarim.
A wide range of subjects was examined - land tenure and extent of holdings, sharecropping, types of land and soil, land measures, remuneration of harvest workers, taxation, agricultural calendars, taxation, grain measures, sales and pledging of land, wells, shepherds, and grazing, migration, and a miscellany of other topics. In my notes, of which copies remain with the project in Sana'a, I particularly tried to record old and new technical terms in current usage.

This part of the village was largely exploratory and more in the nature of sampling than the systematic collection and cross-checking of information, for which, indeed, time would not have allowed. A summary of the type of information collected only, is therefore presented below. Quite a considerable part of the data assembled was new to me, since the Highlands have been much less studied than the Tihama from an agricultural viewpoint.

Officials are able to give a more coherent and logical set of answers to questions than farmers, but my impression was that, in detail, farmers were more accurate. Sometimes, too, officials appeared a little inclined to describe the ideal rather than the real.

**Land holdings**

a) **Land measures**

According to officials in Ma'bar the *libnah* is the unit used, i.e. 15 dhira' (cubits) square, but a Jahran farmer said it is 20 dhira' square. At Dhi Sarif and Kitab/Qitab it is 26 dhira' plus 16 *gabdah* (the width of the clenched fist) square.

At Yarim the *habl* was the unit used - the large *habl* being 32 dhira', and the small *habl* being about 16 dhira square - the *gabdah* is not added to this.

In the Ḍhamar region the *libnah* is 24 dhira' square.

Further sampling would not doubt bring additional variations and it would be necessary to establish for each district what exactly the *dhira* or cubit itself measures.

For the Tihama, Sa'id Ahmad al-Shami, formerly Ambassador of the YAR in London, showed me, some years ago, a paper in which he stated that the *ma'ad*, (a little over a *seddan*) is used in the Tihama; and the *libnah*, from 4 dhira' square at Sana'a, to 12, 14, or 25 dhira' square in other
districts, is used in the mountains. He states that the dhira' is 666 milli-metres. In point of fact there seems to be a greater variation than he mentions.

b) **Land-holdings**

The most reasonable figures were given us by the Shaikh of Rubat 'Amran who thought his territory had 200,000 *libnahr* of arable land, and that individual holdings lay in the region of 200, or 500, or 1,000 *libnahr*.

In many districts landholdings appear to be fragmented.

So far as our inquiries showed, land appears to be owned outright, and without burdens, but if I am incorrect in this, any special forms of holding or obligation would no doubt emerge in the course of the work of the project.

Titles to land are embodied in documents called *basirah* (singular *basirah*). Another type of documents — *fusul* — separates out what belongs to one owner and another.

Government land sequestered from owners after the 1962 coup d'état seems to be represented in a number of *safiyahs*. There is also a certain amount of *waqf* land.

The Muhafiz of Dhamar, Qadi Muhammad al-Hajji recommended that *waqf* and Government lands to be used for drilling purposes in so far as it it feasible to do so.

Concerning wells drilled on land other than public lands he informed us he had arrived at a procedure. If the well proves to be productive of water, and not merely a test well, then, after the project has finished with it, the man whose land the well is in, would have the right to water his fields around the well. (I took this to mean that if the man in question has a remote plot with other land intervening between it and the project water-producing well, he would not be entitled to use its water for that remote plot). The remaining water would be available for use by other land-holders without payment. The reason for this is that the water would be a gift from the British and not acquired by the efforts of the land-holder. There, he said, the State has the right to dispose of the extra water. Shortly after the visit of the original visit of the drilling team, we heard that tribes-people came in to ask that their land should be used in drilling — indicating they they would be willing to fall in with the appropriate arrangements for the disposal of production water — in round.
c) Types of land and soil

Wadi Zabid (Tihama)

al-turbah al-murr - a good heavy clay soil
al-turbah al-gharib - silt (not soil)
Karabah - poor soil in which the informant thought there is a high calcium carbonate content
qushb - peat type of soil with much organic matter.

Ma'bar

'agar or surbi - rain land
ghaili - land irrigated by running streams but it is used to mean land irrigated by mechanical pumps,

Dhi Sarif

qa'ati (plural) - terraced lands
Karabah - as above
Mirri - good soil, probably same as murr above
naie - gravel - sometimes used to lighten heavier soils.

Yarim

dahi = 'agar - rain land
mal dasim - fat land
mal da'if - poor land

Rubat 'Amran

sa'saw' - hard ground requiring much water
naashawi - a middling land (should mean starchy)
mirri - good land using only rain water (see above)

Qa' Shir'ah

Murri/mirri - as above
rimal - sandy stretches
hasia - stony, gravel land

d) Wells

Many wells are held in common. We have not yet explored how arrangements are made for sharing the water. There ought to be documents embodying agreements on this. The depth is generally measured nowadays by the gasabah which is about three metres in length in Jahran. Sometimes they are measured in gamahs (a man's height). The use of animals to draw water for irrigation has greatly diminished since my first visit to the Republic in 1969, pumps having largely replaced camels, donkeys, and cattle for this purpose.

e) Disposal of land

Land, it appears may be sold outright, but in Jahran we were informed that when a man has to sell his land, customs decrees that he has the right to remain on the land as a share-cropper. How far this is a general custom we did not determine, but it may be purely local to the area.
Pre-emption (shuf'ah) is a principle well established in Islamic law, and the standard law books may be consulted on it. A man must offer the land to his neighbour(s) first, but in one district at least we were told that if the neighbour will not pay the price demanded he can sell it to others. In Shir'ah we were informed that pre-emption (shuf'ah) is only in force where the land belonging to different owners has no dyke (tariq) to separate the two plots.

Land can be pledged, no doubt in accordance with the usual prescriptions of the Islamic shari'ah. We also heard of the temporary sale known as bai' al-'igalah; there is an article on this subject in the Encyclopaedia of Islam, 2nd edition. For standard Shafi'i transactions my 'Forms of plea, a Sufi'i manual from al-Suir', Rvisita degli Studi Orientali, Roma, 1955, 1-15, could be consulted — they would apply to the Tihama.

Share-cropping (Musharakah, shirk)

If, on the basis of our limited sampling, one may summarise — a larger land-holder will cultivate part of his land himself (with also hired men), and put out the rest to share-croppers. Share-croppers may be either smaller farmers, or landless men.

Contracts vary according to what each side provides. They are made by mutual agreement in accordance with the quality of the land and type of crop — in general they seem to provide for a division of the crop in ratios of 1/3 to 2/3rds or 50/50 depending on the contribution of the respective parties, but if the land be poor, as little as 1/3 of the crop may be given to the land-owner. In some places there are customary presents to the land-owner when he visits the share-croppers land — views differed as to whether these form part of the contract or are merely customary hospitality. An example of a difference is in the Yarim district where in dahi land the crop is divided on a 50/50 basis, but ghaili land irrigated by pump varies widely in accordance with the contract into which the parties happen to have entered. Yarim officials told us that Government and waqf land are treated in much the same way as land hired by share-croppers from private individuals.

Share-cropping is clearly a highly important issue and detailed information as to the various types of contract, taking into account the many varying factors, should provide most useful data. I suggest that typical contracts be acquired and a series of them be rendered into English.
Taxation

In the Zaidi districts of the Yemen, taxation is by 'amanah', i.e. by local assessment, without the sending out of Government assessors, soldiers, etc. In the Montane Plains the people seem to choose their own amīn (plural umma') but if they cannot agree an amīn is nominated by the Government. The amīn, usually the 'aqil or headman, who collects the tax on grain, receives a quarter of a tenth of it as his collection fee.

Normal Islamic practice is followed here, and the tithe ('ushr, plural l'ushur) or zakat - sometimes known by such terms or phrases as ʿal-qadh al-'ashr, the tenth measure (given in taxation), is normally paid before the partners to the share-cropping contract divide the harvest. This is to avoid the possibility that when the harvest has been divided, one or both shares taken separately, might not amount to as much as the legal taxable minimum (nisab). In one place it seems that this rule might not be followed, but if it is so then the procedure is irregular.

There is also the Fitrah paid at the Ramadan feast, which is in effect a poll-tax, but it hardly merits consideration here as it is payable by all classes and professions and is not directly connected with agriculture (cf. p. 9. supra).

Price-fixing

Price-fixing is normal practice in the Zabid parts of the Yemen, on grain and animal fodder (al-qutain). In Yarim it is arranged by an official called 'aqil al-hubub - the headman of the grain. He is said to be responsible to the Office of Supply (Maktab al-Tamwin), but it was remarked that this office does in fact nothing - the 'aqil al-hubub is obviously a traditional function from olden times. Price fixing is discussed in the Zaidi law books such as the printed al-Bahr al-Zakh'ar. It may perhaps not be found in the Shafi'i areas, but of this I am uncertain.

General

Markets (Tihamah)

In the Tihamah, the large markets (suqs) are put out to farm, and the holder of the farming pays a fixed sum to the Government which he attempts to recover (with profits) from duṣṣ he collects in the suqs, notably on the sale of cattle.
Pasture

Pastures over fallow or cropped fields is common to all and not restricted, but herdersmen (children or adults) accompany the flocks.

In al-Jarubah a shepherd boy received 10 riyals per annum for looking after sheep and goats belonging to several owners of the Fawahiq tribe, plus three pieces of clothing, futah, turban, shirt, at the Id al-Fitr. In the Rima' area we also came across a large flock owned by several owners and attended by three or four shepherds who were hired for this purpose. In the Montane Plains a shepherd received as wages a lamb each year for every 10 sheep and/or goats in his charge.

Calendars

The Islamic (hijri) lunar calendar (losing 11 days each solar year) naturally is not used for agricultural purposes. The Rumi months as set out in my 'Star Calendars ...' and Maktari's Irrigation ... are commonly employed throughout the area. There is also, however, a star calendar in which use, in my experience, varies very much over the Yemen, almost from district to district, though the underlying principle seems to be the same. While, moreover, the year has basically four seasons, in some districts only three, or even two seem to be distinguished. In the Montane Plains, Sabt al-Subut, presumably meaning 'The Saturday of Saturdays' seems to bring in the cold weather and falls in October. It is advisable to make out a correct star and season calendar for each district since the farmer dates sowing and cropping by the stars as often as by the Rumi months, or he names them after the seasons of the year. The Rumi calendar has been in use in the Yemen for ancient times and is basically the same as the Syrian Christian calendar. At Rubat 'Amran found with the Shaikh a Ms. containing treatises and verse on the Rumi and Star calendars with much agricultural information. This he permitted us to Xerox.

Consideration of Terms of Reference

In attempting to answer the questions, posed in my terms of reference, on possible social constraints, I think conflicts between old and new institutions are hardly likely to arise. In principle farmers gave the impression of being open to change provided they are convinced it is in their interest. Yemenis tend to conservatism but not of the herdshedd kind impervious to new conditions, but I assume that the project would
not attempt anything so radical as to modify share-cropping systems established from ancient time. Religious or social sensitivities could doubtless be seriously offended if it were proposed to demolish a mosque or saint's tomb or cut through a cemetery to establish a new channel — but such is an extremely hypothetical case, unlikely ever to occur.

Concerning the preference of rural communities with regard to future land systems and their acceptance of possible alternatives, answers can only be conjectural until it is known what these might be. However, in both regions the stress lay in the wish to have more water or free water, and there were no suggestions in Wadi Hima for instance that the existing lay-out of channels, fields and bunds, which does work albeit, should be altered. Any major alteration to small-holdings involving the change of boundaries and removal of bunds to make larger fields, seems to me likely to cause dislocation, though with large estates held by single families such as the Wajihs this might be possible if the family is convinced it will profit thereby. In general I imagine that improvements of a minor nature, such as replacing a cutting into a bund by a lined channel to admit flood-water to a lower field, would have a fair chance of acceptance providing no vested interest is damaged thereby — but alterations to systems of water distribution, upon which decisions which may go back for centuries and are recorded in local registers, or to land titles, might well prove a source of trouble.

As has been stated above we met with friendliness and co-operation in the project area, in both sectors of which we were able to establish good relations, and (we hope) confidence and acceptance of our enquiries into local conditions. Further investigations into matters likely to prove more sensitive, for instance Family budgets, involving the disclosure of private information, we felt would not appropriately be tackled in the initial stage of enquiry, but introduced more gradually and as farmers become more familiar with members of the team.

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