

4.6 Trees and Forests in History, Religion and Islamic Legislation

We have seen in the last chapters that the present situation can only be judged out of a thorough knowledge of the historical background. Such historical and cultural knowledge will allow us to understand better how the environment is looked at and how it is dealt with. especially religion gives as the basic information on the values, ideals and common sense that shape the present society of Yemen: "In the case of man, much of the behavior involved in interactions with the environment is learned behavior that has become part or the repertoire of responses of particular human groups. It is, in other words, cultural behavior. ...

The material world is of course not the only source of influences upon cultural behavior. However, it is a basic source and accordingly deserves at least as much attention as the ideologies, human valuations, antecedent cultural practices, linguistic categories, motivational patterns, personality structures, and similar factors, which anthropologists and other social scientists have tended to emphasize in their attempts to make items of cultural behavior intelligible. Two main ways of relating cultural behavior to environmental phenomena may conveniently be distinguished:

- a) either showing that items of cultural behavior function as part of systems that also include environmental phenomena
- b) or else showing that the environmental phenomena are responsible in some manner for the origin or development of the cultural behavior under investigation." [Vayda (1969) p. xi:]

It has been commented in the past chapters, how the situation of water scarcity and unreliability leads to a dispersed population with only small social aggregates that confederate to tribal organisations. It did in the case of Yemen, not lead to some sylvi-culture. There is no forestry - or in general: Care for the natural environment does not make part of the cultural system. So the duty of the engineer is the development, the creation of a cultural item (forestry), adapted to the the local environment and to the existing cultural system. The main question for that purpose, and the main aim of this study, is to find out reasons for that negative attitude and how it might be overcome.

4.6.1 Pre-Islamic History

[mainly after:

- Henninger, J.: *Ueber Lebensraum und Lebensformen der Fruehsemiten.*
- Henninger, J.: *Arabica Sacra. Aufsätze zur Religionsgeschichte Arabiens und seiner Randgebiete.*]

Sheep and goat have been domesticated in the Near and middle East already some 40,000 BC. Cereal pollen was found dating 14,000 BC. After Flannery's [Flannery: *The Ecology of Early Food Production in Mesopotamia.* in Vayda p. 283:] model the population

specialised quite early in different fields of production. Farms were established in the low areas and exchanged their products for meat from hunters. Farmers nowadays do still have the same relation with Bedouins. Flannery claims [ibid p. 292:] that: *"The cultivation of plants required no new facts or knowledge, but was simply a new kind of relationship between man and the plants with which he was most familiar."*

In the late Pleistocene (11,000 BC) the climate turned warmer and wetter. Farming in the Zagros valley with more than 300mm/y, sheep and goat grazing, are under way since 8500 BC! A big step forward was to move plants selectively onto niches for which they were not ecologically adapted. Natural competition had to be removed and a selection for characters set in, characters not beneficial under natural conditions, as bigger and softer seeds that do not drop when ripe, that means before they can be harvested, what would make harvest cumbersome. Those efforts started some 7000 BC. A thousand years later a dominating increase of wheat and barley over natural grasses took place. The rise of *Prosopis (farcta)* is an early indicator for the influence of grazing and the rising numbers of domestic sheep and goat.

Until 4000 the first market towns with temples and irrigation got established. At those market places agriculturalists and herders exchanged their products and tradesmen offered obsidian, copper, salt and asphalt!

Around 3500 BC the climate turned again drier or colder. The population movements over the next thousand years from the deserts to the green belt of Syria, Palestine and Mesopotamia were mainly due to drought. From 2500 onwards the size of herds increased again.

The early Yemeni history is more dominated by trade than by agriculture - while already that time the bulk of the population did not profit much from trade. The Sabean kingdom came into being the third millenium BC and flourished the 10th century BC. It got rich from incense and myrrh trade. On one hand it is widely accepted now that the incense came from the Horn of Africa (Somaliland) and India. Still, the plant is growing in Yemen, especially in its southern parts: Hadhramout, Houf and Socotra. Given its high value it is understandable, that it was guarded as private property. Plini reports:

"The whole wood or forest (of incense trees in the South Arabian coast) is divided into certain portions, and every man knoweth his own part: nay, there is not one of them will offer wrong unto another, and encroach upon his neighbours. They need not set any keepers for to look unto those trees that be cut for no man will rob from his fellow if he might, so just and true they be in Arabia".

They Sabeans developed a very sophisticated irrigation culture, dams and house construction. The main kingdoms were Ma'in (north of Sa'ba), Al Jouf, Hadramout, Qataban, Ausan, Sam'ai, Himiar & Axum (Ethiopia). During the full millenary BC South-Arabic tribes had moved into Ethiopia. The Ethiopian churchlanguage (Ge'etz) is strongly related to the old South-Arabic languages

that are still spoken in Mahra (*Mehri*), Oman (*Shauri, Harsusi, Gebeli*) and Soqatra. Ethiopian, hebrew, aramaic-assurian and arabic are all semitic languages, having some slight relation as well with indoeuropean and hamitic languages (pharaonic egyptian, lybian-berber, kushitic).

About 5-100 b.C the incense trade moved to the Red Sea, as the Romans had succeeded in the technical mastering of the difficult winds on the Red Sea. The land road lost it's importance and the population centers moved westwards onto the highlands.

Sana'a, what means '*fortification*', is mentioned for the first time 60/70 A.D. In the third century a.D. a re-beduinisation of the area has taken place under the influence of Iranian horsemen.

From the Islamisation onwards not much of importance for trees and forests is known, except that queen Arwa started the plantation of *Ficus* on public places and that she established some very large mahjour areas.

4.6.1.1 Myths, Gods and Religion

At the origin of religions in the Middle East stands animism, the belief in ghosts of stones, graves, springs, wells, living in the desert, cemeteries and old ruins, but mainly at places with water, rich vegetation, trees and bushes. It looks that the first idea about God was, that there is only one God, called **IL** or **EL**. But soon he was joined by Gods of the moon, sun, venus and plejades, a whole pantheon of Gods as personification of natural forces! A cult of saints and of eponymical heroes intermingled with religion and led around 0 A.D. to a situation where every tribe had its own God. Some of the Gods survived even Islamisation, as three Goddesses of the quraish: *Al Lat* & *Al Uzzah* (Venus) and *Al Manat* (destiny) - the relevant passage in the quran that served as base for "*The Satanic Verses*".

Some of the old customs are still surviving nowadays. In South Yemen e.g. the pilgrimage to the grave of the giant *Hud* at Wadi Masila in Hadramout, one day's walk east of Tarim [Serjeant (1981) I p. 15:]. The place is called "*Mahall al Khadr*", what gives a clear reference to *Gilgamesh* (s. chapter 4.5.1.2.1).

Each tribe had his own God, related to the trio *Almaqah* (moon) - *Athtar* (venus) - *Dhat Himjam / Dhat Ba'dan* (sun!). *Almaqah* is the destroyer, the God of heavy rains, storms and flood. As the God of Saba he was the official God of the state. His attributes were the moon, the ibex and later the bull. Monotheisme started in his name 300 A.D, in the name of *Rahman* in the 4th century.

Myths, as the collective memory of ancient times are totally lacking in Southern Arabia. So we have to rely on the interpretation of fairy tales. Daum scrutinized the Yemeni fairy tales and found that the main and most often repeated event is the killing of the *ifrit* ("the ibex" - as symbol of the God *almagah*) by *Athtar*. This sacrifice will produce mild rain. *Athtar* is not only the God of fertility, mild rains and springs, but as well of war. He looks to be a kind of analogue to *inanna* (s. next chapter: *The Gilgamesh Epos*). *Hima, haram* or *mahgar* (rare term) have been the protected areas dedicated to him.

It looks evident that the tales are of a very old origin, older than 7000 years. Rains must have been torrential and destructive. They probably refer to the time when water buffalos have been sketched at Saada. Since the climate change 3500 BC nobody would "kill the storm" to get "mild water". The opposite is the fact. Rain and floods are the most important events, WATER is equivalent to RAHMAT. Professor Serjeant gave some other reference substantiating this claim:

- The side between the northern and western corner of the Kaaba is a gold plated rain gutter '*mizab ar rahma*'. Rahma means blessing. The blessing in this countries is obviously rain.

And it reminds of the preislamic God *rahman*.

In Hadhramout the ritual hunt of the Ibex is done until present. The animal is not slaughtered by cutting the throat but sacrificed by stabbing it in its neck, exclaiming: "*Wa' shaiba maktul!*" [*The old is dead!*]. Ibex horns can still be seen on many houses in the Hadhramout and Houf. Some other arguments in favour of Daum 's claim that the fairy tales have a very ancient base are some very ancient traditions that survived in the southern parts of Yemen:

- Ritual circumcision mentioned in the tales, is still done in parts of Mahra and Hadhramout - is done with a stone knife. That refers the ceremony to the stone age (4000-8000 b.C.). This custom was forbidden by the Imam and violations severely punished by the cutting of the hand. [reported by Thesiger in *Arabian Sands*.]
- Marriages in all patriarchal societies are patrilocal, what means that the bride moves to the house of her husband's family. In Mahra some reminders of matrilocal customs could survive. The first year (min. 6 days) is spent in the tents of the parents of the bride!

Three fairy tales from Yemen, collected by Diederichs [*Es wächst ein Baum in meinem Land*. In: Diederichs p. 96-97, 116-119, 144-147], leave the same destiny for forests as the stories in 1001 Nights: (1) Forest as the last resort for income generation; (2) forests as dangerous wilderness and (3) woodcutting as punishment. Wood and wood use can be found in fairy tales, as in the Quran, in parables as the wooden stick that gets alive - the staff of Moses. [*Die Geschichte von der Sklavin Tawaddud*. In: *Die Erzählungen aus den Tausendundein Naechten*. Enno Littmann. Bd III. 2: p. 687:]

(1) In the story of the second mendicant friar [*"Die Geschichte des zweiten Bettelmoenches"* *ibid*. Band I. 1 p. 134:] the son of a king is abducted while travelling as tradesman. He arrives at a village and talks with the tailor who tells him: "*Your art doesn't bring any profit here; in our town there is nobody who knows anything about science or even about writing, except earning money. So I said: "Allah, I do not know anything else than what I have told you"; he replied: "Get your belt, take your axe and a rope, and cut fuelwood in the steppe that you may nourish yourself until Allah sends you deliverance; and don't tell nobody who you are or they will kill you."* Then he bought me an axe and a rope, brought me to the woodcutters and recommended me to them. So I went out with them and cut wood, the whole day, and came back

with a bunch on my head. That I sold for half a dinar. For on part of it I fetched food, the rest I put away."

Ali Baba has the same destiny before he meets the fourty thieves [Die Geschichte von Ali Baba und den vierzig Raeubern: ibid p. 793]: *If I use the money that I still have to buy an axe and a donkey, and I go with them to the mountains to cut wood, I come back and sell it on the market, then the proceeds will be sufficient to stop my misery and to sustain my family. ... So he looked at this vocation as a blessing.*"

Woodcutting gets an additional and educative function in the story of the snake-queen [Die Geschichte von der Schlangenkönigin: Ibid p. 765:] where the only son of a widow is very lazy, does not want to work and can't take any decisions: *"Like that he staid now for a while, and he did not start any profession: But they had neighbours that were woodcutters, and they came to his mother and said to her: buy a donkey, a rope and an axe for your son, the he will go with us to the mountains to cut wood. The revenue for the fuelwood will be shared and with his share he can take care for your subsistence."*

In the story of the pious shepherd forests are just wilderness: *"the mountain, on which the shepherd was at home, had many trees, rangelands and wild beasts."*

In the story of Ala Ed-Din Abu esh Shamat [Die Geschichte von Ala Ed-Din Abu esh Shamat: ibid Bd. II. 2: p. 647:] the hero gets caught in Genua and is due to be beheaded by the christian kings. He gets the last chance for survival as a servant in the church: *"What kind of service shall I do?" She answered: Early in the morning you have to get up; then you have to take five mules and go with them to the forest to cut dry wood; this you have to split and to bring it to the kitchen of the monastery. Then you have to clean the carpets, the marble plates and to put the carpets back*

...
Even in the famous story of Aladdin and the magic lamp, the hero gets the order of the magician to collect wood and to make a fire. [Die Geschichte von Ala Ed-Din und der Wunderlampe: ibid p. 673:]

All in all not quite promising base for a forestry culture - in opposition to the situation in Mesopotamia:

4.6.1.2 Trees and Forestry in Mesopotamia

4.6.1.2.1 The Gilgamesh Epos [based on: **"Als die Goetter noch mit den Menschen sprachen. Gilgamesch und Enkidu"**. Brockhoff / Lauboeck. Herderbuecherei: Texte zum Nachdenken Band 296. Freiburg, Basel, Wien 1981:]

The Gilgamesh Epos is included here, as it does not only represent the earliest written text on earth, but contains as well deep metaphysical insights, a world-view on the meaning of life and the respect for trees and nature. Mesopotamia has strongly influenced the Arabic pre-Islamic and the Islamic culture. The original Akadian texts have been deciphered by George Smith and the results published 1872. A missing fragment of the text was found by the same G. Smith at Ninive one year later! The tables originate from early Sumerian, 3000 bC. They are written in cuneiform characters. Sumerian is an agglutinative language. A main feature is the classification of existing objects into

persons and things. In the first class there are Gods, ghosts and people. There is no differentiation made between living and dead or male and female!

A basic clue to the text is the term **ME**, meaning "TO BE", but only for things in relation with mankind. So not stones, plants animals, but ideas, feelings, actions and their results. **ME** can mean "WORD" as well. It has so clearly a relation to the Greek *logos*, the biblical: "In the beginning was the word" - and last not least to Topics (s. chapter 2.3.3)."

The Samaritans being of small, dark haired stock, came from the mountains in the east, others came from the south over the sea. They had many Gods:

- An, the highest of the Gods.
- Enki, the God that in the depth of the abzu separated salt from sweet water. He guards the *MEs*, he knew when the time was ripe to deliver further *MEs* to the people. He was the God of wisdom, compassion and mercy.
- Enlil, the God of the air.
- Aruru, the God-mother, creating people from mud at the order of An.
- Utu, the God of the sun.
- Nanna-Suen, the God of the moon.
- Ereschkigal, the Goddess of the world of the death.
- The luminant Inanna, the Goddess of the morning star and the nature. She was full of passion, insatiable, and she was the only one, to destroy the undestroyable. She had brought some *MEs* to the blackheads before the time had come, *MEs* that make life comfortable, as art and culture. But nasty gifts as fight, war, jealousy as well. The people adored her, but didn't notice that they turned to slaves, as she kept hidden from them the highest ME: the FREEDOM. So the council of Gods decided, to send two people to the earth, to end the all-ruling power of the Goddess. Those were Gilgamesh and Enkidu.

Inanna succeeds again in steeling from Enki the following *MEs*: "the rule, the eternal crown, the kings crown, the scepter, the kings insignia, the kingdom, the sublime shrine, the shepherddom, the honour of the women, the office of the high priest, the three priests offices Ischib, Lumach and Guda, the descent into the underworld, the ascent from the underworld, the golden standart, the art, the room of cult, the music, the five instruments Gusilim, Lilis, Ub, Mesi and Ala. Brotherhood, heroisme, might, ennemity, honesty, the destruction of towns, the lament, the falsity, the joy of hart, the metal art, the writing, the blacksmith's handwork, the leather-, construction-, basketmaker-handwork, the wisdom, the attention, the holy ablu-tion, fear, fright, quarrel, disgust, peace, victory, council, the sadness of hart, the judgedom, the force of decison" - and many more.

Using those *MEs* the people in the **town** developed the kingdom, the art of writing and established the world's first compulsory school system.

The story of Gilgamesh's birth is in fact the story of Moses. Nin-sun, the daughter of Enmarkar, was prophesised to get a son that would displace his father. As the order came to kill all children, the mother puts him in a basket that she throws into

the river. The heavenly eagle *Imdugud* catches it and brings the baby to the garden of *Schukallituda*. *Schukallituda* was a famous gardener who had observed during the years the movement of the stars and the effect of the elements. He succeeded in planting shade trees and grafting fruit trees.

Inanna the queen of Uruk, had a huge tree, the *chuluppu* tree, that she took care for. But it served as rest place for *Lilit* the demon and the *anzu*-eagle. Snakes lived in its roots. It stood without leaves and no magic helped to cure it.

Gilgamesh cuts the tree and brings it to *Inanna*. He keeps the rootstock and the top, from what he produces *Pukku* and *Mikku*, the magic wands. As he tortures his human fellows with those and with his strength, the Gods have to create a second being of the same strength to serve him as equal companion. This was *Enkidu*. He grew up in the wilderness with the wild animals and did not know any human being. In the human world he learned the language and human behaviour. Then the beasts left him.

After his visit in the underworld he was questioned by *Gilgamesh*. An other adventure should bring them "to the evergreen mountains of the cedar woods, in the land of life. To kill the cruel guard, cut the big cedars and bring shoots home to Uruk to make the country flowering and their names immortal." *Chuwawa*, when submitted, offered them "the river, the fountains and the trees of the cedar forest. He offered to cut the trees and bring the shoots for the gardens of the high town of Uruk." *Gilgamesh* pitied the monster, but *Enkidu* refused and killed *Chuwawa*. *Enlil* decides: "Because you felt pity in your heart, but *Enkidu* hindered you to follow this pity, *Enkidu* will suffer his punishment".

The text is definitely unique. Pity for a monster is rewarded on the ground that it has been created and it is a part of nature! For the first time in history the right of living beings - beings not of the human race, unattractive and even "useless" beings - is mentioned. A right, we are still struggling with, 5000 years later!

On the strive for the herb giving eternal life, he meets *Ziusudra*, who tells him the story of the big flood, in fact the equivalent of the story of Noah. He finds the spiny herb that gives eternal life, but while he is taking a bath, a snake eats it and rejuvenates since that by changing the skin. After some fits of despair, a voice in his hart tells him: "*Gilgamesh, that life you are looking for, you won't find it!*" And he understood. What kind of life had he been looking for? The eternal youth, the unchangeable, that what remains. What a road he had gone for it? How many changes he had went through? Suddenly he recognised that he was more than the snake, that the changes he had undergone did not only change his external skin, but himself, his soul, his essence, that changed and still was himself, and that this was the real life.

It didn't look worthwhile to live the same life in eternal youth. He understood, that so, as he had gone through the sleep and stayed himself he would go through death, be changed and stay himself in an other form of being. He was not scared of death anymore and knew now, that he would be reunited with his friend *Enkidu*.

Later generation adored *Gilgamesh* as the king of the dead.

Especially in the Arab world (see 1001 Nights!) he is known as "**El Khidr**", the Green. A famous pilgrimage destination is his grave in Hadhramout, under the name of Hud.

4.6.1.2.2 Trees and Timber in Mesopotamia

[Willcox: *Timber and Trees: Ancient Exploitation in the Middle East: Evidence from Plant remains*. In: *Trees and Timber in Mesopotamia*. Bulletin of Sumerian Agriculture Vol VI, Cambridge 1992.]

From Mesopotamia, especially southern Iraq, we have the earliest testimonies on institutionalised care for trees, for tree plantations and active management of plantations. One reason for such care was the lack of timber during the Sumerian period. Additional to the dry environment that limits forest growth, it is unluckily an old tradition to destroy gardens and tree plantations during wars (and Mesopotamia had a substantial amount of wars even before Saddam). There are many documents mentioning the uprooting and cutting down of trees. A statement as "*large trees were being uprooted, the forest growth was ripped out*" indicate that "forests" were a topic for these poets in the south of Babylonia. [ibid p. 119:] A second reason was the interest in exotic species.

Plantations, cultivation:

Postgate reports [ibid p. 178:] that *Tiglat-Pileser I.* had collected and planted trees from the countries he had visited. Such botanical gardens have been established also by *Assurbanipal II.*, *Sargon*, *Sennacherib* and *Assurbanipal*. "*One precious document is the Banquet Stele of Assurnasirpal which gives a list of some 40 trees planted at Kalhu. In the reign of Sargon some of his officials write about the production and transport of various trees for the new capital planned at Khorsabad, including cedar and cypress saplings.*"

The main species were that time (as today) the local tamarix and poplars. They were and are planted on the dikes around the farms and on the banks of irrigation ditches. They served and do serve as windbreaks, to hold the banks of the canals and dikes, and they produced the much needed timber. Mostly they were "*property of the state or temple, and we may assume that cutting timber was a prerogative that was just as jealously guarded in the Presargonic period as in Hammurabi's time, when unauthorized felling of trees could cost one's life.*" [ibid. Steinkeller, p. 120 (from: Steinkeller, P: *The foresters of Umma*. In: M.A. Powel (ed), *Labor in the Ancient Near East* (AOS 68), 1987, p. 73-115.):] In combination with fruit orchards (apples, grapes, figs, and dates) it seems that trees have been used in agroforestry systems to create optimal ecological conditions of light and shade.

Institutions, inventories, fines, special techniques:

From the southeast of Iraq a good documentation on two decades in the 24th century BC is available, proving the systematic monitoring of those woodlots. The inventory lists contained as main categories:

- wood on hand, in storage
- wood newly cut from the marsh woodlands, from tree plantations ("gardens"), or from the dikes surrounding fields and farms
- trees actually growing
- wooden tools, implements, vehicles

With "tools" wood was meant fit to create that mentioned tool. It looks that the woodcutters were in the same time carpenters and knew how to take "advantage of the extra strength offered by the natural union of branch and trunk, especially for making hoe and axe handles." [ibid p. 105:]

The administrative organisation has been described by Steinkeller (1987) for the "Foresters of Umma". Like the men of Ur III Umma, their counterparts in Presargonic Girsu were also called **lu tir (me)** in the 24th century b.C. We have here probably the first word for forester. They had to watch the forests for their lord and were personally instructed or reprimanded by him. Here a "report" on the forestry problems 5000 years ago. It sounds familiar: "I have inspected the forests which have been entrusted to Aplijum and Sin-magir. In these forests trees have been felled. No one guards them ... To Samas-hazir say, thus speaks Lu-Nimurta: "May Samas preserve your health. Sin-magir and Aplijum. The overseers of the forests, came to the palace because of their beams and taxes and gave their report. With regard to the forest the king spoke as follows to them 'Do not neglect the forests! Guard your forests! Tomorrow at my inspection I will not keep alive the man who is responsible for one embezzled (? [? in text. Probably insecure translation.] tree which is felled.' Thus he spoke to them and they came to me, and said thus: 'You hear (?) continuously about felling in the forests. A tablet about the forests has not been given to us, therefore based on the tablet we have not made our guards work in the forest.' Thus they said to me and I wrote to you. Now I send them to you. Of all the woods that are available and all the open space in them, do not give them anything in lease. Write them down on a tablet and give it to them. Do not omit any wood or open space so that you give no reason for recourse. These matters have been made very clear to you in the palace. Answer them fast, so that they may get no reason for recourse. [ibid p. 155:]

The fines for cutting one tree were quite high with 250 g silver. Equally high fines can be found in the code Hammurabi and Lipit-Estar!

Species:

Besides the above mentioned tamariscs and poplars, ideal for irrigated conditions and easily propagated by cuttings (what concerns poplar), several other species have been used:

- *Acacia nilotica* or *arabica*: "se-du"
- *Buxus*: "tiskarin" = "taskarinnu"
- Cedar: "eren" = "erenum"
- *Cupressus*: "su-ur-man" = "surminum"
- *Dalbergia sissoo* (Ebony): "musukkannu" / "esi" = "esum" / "usu"

- *Juniperus*: "asal" = "dupranum" / "li" = "burasum" / "za-ba-al" = "supalum"
- *Phoenix dactylifera* (date palm): "gisimmar" = "gisimmaru"
- *Pinus*: "u-suh" = "asuhu" (ev. *Abies cilicica* (improbable), *Pinus brutia* or *halepensis*) Used for charcoal, but mainly planted as ornamental and for amenity.
- *Pistacia vera*: "lam-gal" = "bututtu"
- *Platanus orientalis*: "gul-bu" / "dulbu"
- *Populus*: "ildag" = "ildakku", "adaru"
- *Populus euphratica*: "asal" = "sarbatu" The spreading characteristics of the branches seems to have been used by Inanna and Sukalleduda, where the "asal"-tree is specifically planted for its broad shade ...
- *Prosopis farcta*: "girgunu"
- *Punica granatum* (pomegrenade): "lal-dar" = "nurmum"
- *Quercus* (oak): "ha-lu-ub"/"ub" = "haluppum" / "allanu" (s. Gilagmesh)
- *Salix acmophylla* (willow): "ma-nu" / "sa-kal" = "sakalum" / "hilepum" (?)
- *Tamarix aphylla*: "sinig" = "binu" / "tarpu'u"

4.6.2.3 Trees in Egypt

[after: *Lexikon der Aegyptologie*, Wiesbaden, 1975 & E. Stahelin, priv. com.]

The Egyptians did not have any expression for forests or forestry during the Pharaonic time. Tree cutting during wars and raids have been as common as in Iraq that time. An interesting remark on raids has been brought to my attention by Prof. Serjeant. He derives *ghazu* from *ghaz* (petrol), as oil was poored into the hart of the palms to destroy them.

In Egypt trees were used in gardens and parks mainly for shadow and fruits. As taxes were due for trees, it looks they had a substantial importance and value. The cutting of trees needed a permission of the wasir. Holy trees were *Acacia nilotica*, *Ceratocystis siliqua* (carrob), *Ficus* (sycomore), *Hyphaena thebaica* (doug palm), *Persea*, *Punica granatum* (pomegrenade), *Phoenix dactylifera* (date palm), *Salix* (willow), *Tamarix* (tamarisc) and *Ziziphus spina-christi*.

Famous are the exhortations of Ipuwer [Hornung: *Gesänge vom Nil*. p. 88 & 99:], 19th dynasty, that deplore the troubles and loss of order during a changing time, where not only the state, but as well the social relations and the nature were disturbed: "Truly, the trees are destroyed and the branches defoliated, the servant runs away from the house. ... Truly the public servants are hungry and suffer privation, and the servants are being served ... because of the claims. Truly the hothead says: "If y would know, where a God is, I would offer him a sacrifice."

...
But beautiful it is, when the hands of the people built pyramids, when ponds are dug and orchards are created for the Gods."

4.6.2 Trees and nature in the Shari'a (Quran and Hadith).

Quran [*The Koran (Qur'an)*. Palmer (transl.). reprint 1942.] and hadith [El Bokhari: *Les Traditions Islamiques*. Traduit par O. Houdas, W. Marçais.] have been systematically screened for any hint on forests and environment. It is easy to understand that there are no verses of direct use for forestry, as - Each tree you plant brings you one step nearer to paradise - or the like. Trees have not been of much concern that time and the Quran is a metaphysical concept, not a forestry law. But, it is a general guideline on how to see and interpret the world and how to organise human society and private life on it.

Trees and Wood.

The following Quranic verses mention trees:

2:34, 7:20ff.(1), 14:31(2), 18:6(4)42(2), 19:25(3),
20:118(1), 24:35(2), 27:61(4), 36:80(4), 37:60(5),
54:21(2), 59:5(4), 69:8(2).

Verses marked with (1) concern the tree in paradise: Here often the spineless lotus (*Ziziphus*) occurs, e.g. comparing this heavenly one with the thorny one of earth and hell as in 34:17. But mostly trees are mentioned together with rain and water: 2:23, 6:100/142, 7:58, 10:26.

Verses marked with (2) are parables, as 24:36 the light producing, allegorical olive tree in "*the niche of the light*", (3) the tree Maria has to bend to get the dates, (4) Trees as God's creation or cut by his order as 56:70/71, 59:5: "**Have you considered the fire which ye lit? Do ye produce the tree that gives it, or do we produce it?**" (5) is about the dreadful, hellish tree *saqum*.

Verses mentioning wood and wood products:

7:114, 11:38(2), 18:70(2), 20:20(1)/39(2), 23:19(2),
26:119(2), 27:10(1), 43:34(3), 44:44(4), 54:14(2),
55:25(2), 69:12ff.(2), 72:15(5), 111:5(4).

Verses marked with (1) comment on the staff of Moses, that turns into a snake when thrown on the floor. (2) are those on the ark of Noa, the wooden box of Moses or boats in general, (3) mentions a door, (4) again the tree *saqum* and (5) the carrying of (or being) fuelwood for the hellfire.

The heavenly paradise and paradise on earth: water, gardens, fruits.

Verses on gardens and palm trees are plentiful in the Quran. Gardens representing some equivalent of paradise on earth: 2:23-24, 17:94, 18:31-34, 26:58/135/148, 34:17, 37:40, 50:9-10, 55:47-49, 56:27-29, 69:23, 71:13, 78:19, 33, 80:25-30.

Fruits: 2:23, 3:197, 6:99/142, 13:2-4, 14:38, 16:12/69, 18:36,

36:34, 37:40-43, 41:48, 55:5-7 (+ diversity), 69:24.

Submission of the earth and the heavens in man's favour:

14.37: "God it is who created the heavens and the earth; and sent down from the sky water, and brought forth therewith fruits as a provision for you; and subjected to you the ships, to float therein upon the sea at His bidding; and subjected for you the rivers; and subjected for you the sun and the moon, constant both; and subjected for you the night and the day; and brought you of everything ye asked Him: but if ye try to number God's favours, ye cannot count them; - verily, man is very unjust and ungrateful."
16:11/66, 20:55-57, 22:6/64/66, 31:10, 42:28, 43:10-12, 50:9-10, 80:25

While above quoted verses establish a priority of mankind, the dominance of man over the earth, in short the homocentric view, the following two groups of quotes relativate that and demand from man a responsible behaviour, to keep and maintain the established order:

Diversity - Balance - Equality:

15:19: "And the earth we have stretched out and have thrown on it firm mountains, and have caused to grow upon it of everything a measured quantity. And we have made for your means of livelihood therein, and for those for whom ye have not to provide."
15:21, 39:22
16.13: "And what he has produced for you in the earth varying in hue, verily, in that its a sign for a people who are mindful."
20:56, 35:26, 50:8,
53:39: "... that no burdened soul shall bear the burden of another? and that man shall have only that for which he strives; and that his striving shall at length be seen?"
55:2-9: "The merciful taught the Qur'an; he created man, taught him plain speech. The sun and the moon have their appointed time; the herbs and the trees adore; and the heavens, he raised them and set the balance, that ye should not be outrageous in the balance; But weigh ye aright, and stint not the balance. And the earth he has set it for living creatures; therein are fruits and palms, with sheaths; and grain with chaff and frequent shoots; then which of your Lord's bounties will ye twain deny?"

The texts, while not easily interpretable, make clear that there is variety, created by God, and that such has to be preserved actively by man:

**"N'as tu pas entendu
que Dieu dit a Marie:
"Secoue le tronc du palmier,**

et les dates en tomberont"?

**Si Dieu avait voulu
qu'elle put avoir les dattes
sans secouer le palmier,
il l'eut permis: mais toute action
doit avoir sa cause.** [Khawam p. 103:]

The search in the enormous documentation of hadith that Bukhari had established did not produce much clearer insight into the relation of mankind with nature or direct rules. Only the protection of the *haram* makes part of the *sunna*: "On ne doit pas couper les arbres du territoire sacré." [El Bokhari: Titre XXVIII: De l'expiation du delit de la chasse et autres choses analogues. Chapitre VIII:]

The most impressive hadith has been reported by al Bayhaqi: **"When doomsday comes if someone has a palm shoot in his hand he should plant it.** ["Ahmed Ibn al-Husayn al-Bayhaqi, *Sunan al-Bayhayi al - Kubra* (Hyderabad, India: n.d.)." In: "Islamic environmental ethics, law, and society. M.Y.Izzi Deen (Samarrai). Again in: Engel, J.R.Z.; Engel, J.G. (eds.): *Ethics of Environment and Development*. London, Belhaven 1990."] It is intensely used by forestry extension in Tunisia. In fact it is quite astonishing that in this situation, the end of the world, someone is asked to care for plants!

4.6.3 Islam - Politics - Social Organisation: Centralisme versus Federalism

Islamic tradition and law, as well as Islamic science, focus on the improvement of the situation for the whole community. Common welfare is more important than individual wishes. As § 10 (in the next chapter, p. 327) of the guidelines on environmental protection claims, the most important duty of the rulers is, to improve the situation of individuals and of the community.

Now what concerns leadership, there are different approaches. In spite of the Quranic verse 53:39, establishing equality between all Muslim, the government of Saudi Arabia has a much more dictatorial approach than the government of Yemen. One reason might be the different attitudes of *shia* and *sunna* towards governments. The *shafii* school (*shia*) permits the violent disposal of an unjust or unqualified chief, the *sunni* schools order the submission under any chief as a God given examination. A good reason why a ruler in Yemen has to be much more sensitive in what concerns acceptance. Especially as the violent disposal of the old imam by the new one was a compulsory tradition, guaranteeing that the Imam is able to aggregate and use the power of the disaggregated tribes!

What concerns the qualities of leaders after el Mawerdy (1058) [Muatassime: *Islam et Developpement Politique*. In: "L'Islam et son Actualité pour le Tiers Monde". p. 801-2:] there are physical requirements, they have to be able to see, hear and speak. Communicatory capacities have always been very important. Just remember the sheikhs that have to convince and not to give orders! Moreover there are moral requirements: They have to be just, wise, vali-

ant and courageous to be able to protect the Islamic lands. Intellectually they have to master the sciences sufficiently to be able to interpret *shari'a*, to practice *ijihad*. Ibn Taimiya (1328) adds competence and loyalty to those requirements. Competence (*qawa*) combines technical mastery with moral force. Loyalty means for him the defence of public functions against personal whims and those of the family. Khalif Omar reminded his son: **"Every man invested with authority over the Muslim who assigns *functionaries for friendship or familiar relations is cheating God, his prophet and the Muslim.*"**

Now what concerns the guiding regulations and administration of water, range and forests, the basic sentence on the common right on common use:

"People share three things: water, pasture and fire."

[after Ba Kader (IUCN): *Islamic Principles for the conservation of the natural environment*. A correct prophetic tradition related by Abon Dawood with correct ascription.]

In the desert areas access to drinking water is an undeniable human right, under slightly better conditions the right for water for the ablutions as well.

Water rights in matters of irrigation are guided by the following principles:

- a) Priority: the higher fields are irrigated first.
- b) Equality: nobody should profit at the expense of others, surplus water has to be distributed.
- c) Moderation: Ankle deep flooding is in most cases considered as sufficient.

The legal opinions do not differ much on the issue as such, but on the assignment of responsibility: Who is in charge to apply the rules. While Ba Kader bases his interpretation on experiences of the situation in Saudi Arabia and puts the power into the hands of the government, Zabara in Yemen knows that the government is not able to manage that huge and conflict prone field by itself, that it needs to put the responsibility into the hands of different smaller organisations that are present on the spot, have the technical knowledge and the power to convince the users. Zabara in his first paragraph (Z1), as well as Ba Kader (BK1-BK3) put at the top the obligation for every Muslim to participate actively in conservation. Ba Kader grounds this obligation in the commitment towards Islamic morals and manners. Environmental protection can clearly be based on religious awareness and Islamic guidance.

BK4 just quotes the fact of common ownership while Z2 confirms that for *waqf* property there is a priority of the will formulated in the endowment. To oblige the population is the right and duty of the local leadership Z6, as the central government is mainly concerned with itself and lacks the luster of "being determined by the common good" (BK5). Government should assist and not ordain. This quest from Z2 is repeated in Z3 and Z5.

The idea of responsibility (Z2) for future generations is related to the ideas of prevention and responsibility for actions,

formulated in rule BK9, BK11 and BK12. In both cases the priority of the common over the individual good is clear (BK5, BK6, BK10), but the ways to reach it are different. Ba Kader, starting with individual, personal duty, does assign the right for regulatory measures and actions to the government. His terms are (BK12) "*forbid, limit, impose*". Zabara, for the case of Yemen, calls for the government to raise the awareness and to assist the population! His terms are (Z2, Z3, Z5) "*help, assist, guide*". Where obligation comes in it has to be done through the local, consensus oriented leadership (Z6).

The regulation of water use is the most vital and critical field for Yemen. Two laws have been issued:

- High water council: *National Water Legislation, Draft law for Regulations of Water Resources & their Explication*. 1990.
 - Ministry of Agriculture: *Draft Water and Irrigation Law*. 1992.
- Both proposals, both most probably based on World Bank or other assistance, are technically sound documents - but both do totally lack applicability under Yemeni conditions. Countrywide quantitative measurements of water use, well depth, water quality and the like are just not feasible. The situation is the same as for the meteorological stations. Moreover, the assumption of the High Water Council, that water is a common good (state property, Art (3)), is very much based on quranic truth - but not on reality. The approach of the Ministry of Agriculture, assuming that the owner of the land owns the water is not really Islamic - but realistic. Moreover it contains certain restrictions in favour of the community, especially that "*Use of water for drinking purposes of humans and animals has the priority over any other uses from each of the water resources.*" (Art 6) and "*dispensing with water as a commercial commodity is strictly prohibited.*" (Art. 8).

The main problem is the competition between institutions. Both want the "responsibility" and "authority", especially as it embraces financial planning and credits, permits and licenses, studies and projects, expropriations, short - jobs and money!

4.6.3.1 Ba Kader: Legislative Rules of Islamic Law which Govern all Procedures and Measures for the Protection and Conservation of the Environment. [Ba Kader, IUCN: chapter 4, p. 20-23:]

1. Protection, conservation and development of the environment and natural resources is a mandatory religious duty to which every Muslim should be committed
2. Religious awareness and guidance in this field is necessary so that each individual may take part in the protection and development of the environment and natural resources. . . .
3. Religious awareness and Islamic guidance includes a call to all individuals, at all levels and by all possible means, to commit themselves to Islamic morals and manners in dealing with nature, the environment and the natural resources for their sustainable use and development. . . .
4. Ownership of all environmental elements is the common and shared right of all members of the Islamic community. . . .
5. Islamic law stipulates the interference of the ruling autho-

rities for the good and interest of all people and to eliminate common mischief and corruption. ...

"The leader's actions are determined and dictated by the common good." ...

6. The interest of the nation and the community should be preferred to the interest of individuals in the case of conflict. ...
7. ... Preference and priority should be given to fundamental interest if these conflict with needed interests or luxury interests. ...
8. ... Priority should be given to actual or urgent interests ...
9. ... Avoidance of mischief should be given preference and should come before the achievement of interests", ...
10. The primary duty of the ruler and his assistants, whether they are administrative, municipal or judicial authorities, is to do their best to realize the interest of individuals for the betterment of life and society as a whole." ...
11. The state has the right to take all measures and actions to avoid, prevent or minimize damage before it occurs ...
 - The State has the right to forbid any action ... that may lead to or result in damage or mischief. No one is entitled to stop or even spoil the community's sustainable use of any of the basic elements of resources of the environment."
 - The State has the right to limit the scope of action, its place, time and kind and quality ...
 - The State has the right to impose certain measures or technical standards to prevent the occurrence of damage ...
12. The State has the right to take all necessary measures and actions associated with elimination of actual damage, repair of its effects and provision of indemnity for it ...
 - The State, for instance, has the right to hold individuals, organisations, establishments and companies responsible for the elimination and removal of damage resulting from their activities, enterprises and objects which are needed for the welfare of the whole community
 - The State has the right to impose moratoria on certain projects or enterprises if it realizes that such objects or enterprises will lead to, or result in, real damage to the environment that is in excess of the benefits thereof. ...
 - The State has the right to hold individuals, organisations, establishments and companies responsible for the cost of eliminating the damage ...
 - The State has the right to claim damages or indemnity from individuals, organisations, establishments and companies for avoidable damage to the physical or natural environment, resulting from unlawful activities which cannot be eliminated or recovered.
 - The State has the right to censure or blame individuals, other owners of organisations and establishments or their designees, should they infringe or violate the terms of license, charters, permits or contracts in-

tentionally or deliberately or through evident negligence or violation of the general policies and instructions set forth by the State for the conservation of the natural environment, its elements and its resources."

link FETWAS