Yemen Geographical Situation

Yemen, the Happy Arabia (*Arabia Felix*), as mentioned in the ancient time, has been one of the oldest centres of civilization and the construction of the world first dam proves this. The present Republic of Yemen comprises the former Yemen Arab Republic and the Peoples Democratic Republic of Yemen and was proclaimed in May 1990. Geographically, Yemen occupies the south-west corner of the Arabian Peninsula between 12° and 20° latitudes and 41° and 54° longitudes. It is bounded on the north by Saudi Arabia, the Gulf of Aden on the south, and Oman on the east and the Red Sea on the west. The country area is 555,000 km² and it has more than 100 sizable islands scattered in the Indian Ocean, the Red Sea and the Arabian Sea. The most notable islands are Soqatra in the Indian Ocean, Hunaish, Perim and Kamaran in the Red Sea.

Population of Yemen

The majority of the Yemeni are Arab of Semitic origin other communities like Africans, South Asians and Europeans do exist, albeit in relatively small numbers. One of the unique features of the population of Yemen is the significant role of tribes and sheikhs in the highlands and remote areas. The government seems to accept such norms and behaviours as they assist in creating a politically stability in such areas. The Yemeni population has a relatively very high growth rate, 3.7 per cent, which pose a lot of challenge to the government development plans. The last published census showed that the Yemen population is 22 millions; 51 per cent of them are males and 49 per cent females. It also showed that 24 per cent of the population live in the urban area and half of the population are under 15 years of age while 3.5% are in the age range of 65 and over.
The Climate of Yemen

The climate of Yemen generally ranges from semi-humid to semi-arid until reach to regions that have arid tropical climate. Nevertheless, the climate of Yemen can be classified into eight identifiable regions. These regions are: the Coastal Plains, Low Western Highlands, Medium Western Highlands, High Eastern Highlands, Medium Eastern Highlands, Highlands Plains, Eastern and North Eastern Highlands, Eastern Desert.

Typically, the highlands of Yemen have a mild temperate climate and moderately dry in the winter, sometimes the temperature drops below freezing point, and in the summer the climate changes to warm and rainy. The central slopes and the far northern and eastern parts (the Empty Quarter) are generally hot, dry and have harsh desert climate. The coastal plain has a hot climate throughout the year and with high humidity. The following table shows the main climatic characteristics of the regions.

<table>
<thead>
<tr>
<th>Climatic Region</th>
<th>Rainfall</th>
<th>Humidity</th>
<th>Temperature Max</th>
<th>Temperature Min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal Plains</td>
<td>50-300</td>
<td>Very high</td>
<td>45</td>
<td>18</td>
</tr>
<tr>
<td>Western mountain (low)</td>
<td>150-600</td>
<td>High</td>
<td>40</td>
<td>15</td>
</tr>
<tr>
<td>Western mountain (medium)</td>
<td>400-800</td>
<td>Moderate</td>
<td>35</td>
<td>12</td>
</tr>
<tr>
<td>Western mountain (high)</td>
<td>400-1000</td>
<td>Moderate</td>
<td>32</td>
<td>Frost</td>
</tr>
<tr>
<td>Eastern mountain (high)</td>
<td>200-400</td>
<td>Low</td>
<td>32</td>
<td>Frost</td>
</tr>
<tr>
<td>Eastern mountain (medium)</td>
<td>100-200</td>
<td>Very low</td>
<td>35</td>
<td>Frost</td>
</tr>
<tr>
<td>Highland plains</td>
<td>200-400</td>
<td>Low</td>
<td>32</td>
<td>Frost</td>
</tr>
<tr>
<td>Eastern Desert</td>
<td>50-100</td>
<td>Very low</td>
<td>25</td>
<td>5</td>
</tr>
</tbody>
</table>

With regards to the rainfall, most of the Yemen areas enjoy two seasons of rainfall,
during the months of March/April and July/August. However, the arid tropical climate that prevails in the coastal regions results in erratic precipitation of low amount. The country mean annual rainfall is usually less 200 mm, but the highlands receive great amount of rainfall usually between 400-800 mm. The Coastal plains and the Eastern Desert Plains get the lowest rainfall rate which is 50-300 mm and 50-100 mm respectively.

Due to the elevations and wind, the country annual mean temperatures is considerably low. The monsoon negatively affects the temperature during the summer time. The absolute maximum is 40° and minimum is 20° but the difference is considerably high between the night and day temperatures.

Soil

Very inadequate information is available about the Yemen’s soil classification and distribution. The study carried out by King et al can be considered as the most important one although it only covered the western and the northern part of the country. The most prominent properties of the soil of Yemen are that they are generally fine textured (sandy loam, loam, silty clay and clay loam), alkaline (pH 7-8.5) and have well developed structures but weak and very structure can also be noticed. In light of the USDA soil taxonomy the soil of Yemen can classified as following Table no. 2:

Table no. 2. Classification of the Soils of Yemen

<table>
<thead>
<tr>
<th>Soil order</th>
<th>Characters &amp; Distribution</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entisols</td>
<td>Young soils found in the coastal plains, terraces of he central mountains and wadis</td>
<td>Covers about 50% of the country</td>
</tr>
<tr>
<td>Aridisols</td>
<td>Second to the Entisols and has weak to very weak structure with light texture</td>
<td>Covers about 20% of the country</td>
</tr>
<tr>
<td>Inceptisols</td>
<td>Well developed moderate to strong</td>
<td>Covers about 15% of</td>
</tr>
</tbody>
</table>
Socio-economic Activities

The arable land constitute 5% of the total area and up to 54% of the population works in farming related activities and consider agriculture as the main livelihood mean (Table no. 3). About 45% of the arable lands are rain fed, 37% depends on wells and the rest are irrigated by spring and flood water. Agricultural constitutes about 18% of GDP and the agricultural sector grows at a rate of 3.73%. The other activity that provides jobs for considerable sector of the rural people is the herding. The total numbers of livestock and their grazing pressure are rough estimates. However, the main livestock resources include cows, sheep, goats and camels (Table no. 4). The rural people depend on livestock as a source of milk, meat and the majority of farmers, 75%, use oxen in the traditional land preparations. The diary production for commercial purpose is very limited.

Table no. 3. Land uses Classifications

<table>
<thead>
<tr>
<th>Land use</th>
<th>Percentage of land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arable land</td>
<td>5%</td>
</tr>
<tr>
<td>Permanent pasture</td>
<td>30%</td>
</tr>
<tr>
<td>Forest and woodland</td>
<td>4%</td>
</tr>
<tr>
<td>Deserts and other uses</td>
<td>61%</td>
</tr>
</tbody>
</table>

Table no. 4. Livestock Resources (in 000 heads)
Next to agriculture and herding comes the fishing occupation that provides employment and source of income for the majority of the population in the rural coastal areas. Yemen has a very long coastal strip of 2000 km along the Red Sea, Arabian Sea and the Gulf of Aden beside many islands. The fishing resource in the Gulf of Aden is very rich and fertile and has high potential. The latest reports show that Yemen has exported 60,000 tones of fisheries and aquatics organisms and has met the domestic demand for fish meet. In addition, there are three factories for canning of fish and this provides good job opportunities for the people in the coastal areas.

### The Forest Resources and Protected area of Yemen

Forests, in general, play a vital role in any rational land use. The potential of contribution of forests to the GDP, recreation assets and the environment cannot be overlooked. However, in a country like Yemen forests contribution to the GNP does not exceed 0.25-0.5 per cent, even though, they are expected to play different roles in varied climatic and topographic regions. The attention given to this important economic sector is so perfunctory and this could be explained by the fact that that there is no model of forest contribution to the GNP. The economic potential of the forest could be reflected through the protection value that forests provide to agriculture, meet basic rural people needs beside providing humble scale
employment.

Yet, in Yemen there is no planned or planted forest and the present forest resources are only natural forests that are saved from extradition due to their location in the remote inaccessible areas. The Yemen natural forests are not only exhaustible resource but they are low producer and contributor to the country economy. This is clear from the fact that forests and woodlands only constitute 4% (2,388,000 ha) of the total land of the country. With the significant population growth the country planners need to decide on the type and the extent of land to be used as forests, the species to be grown, management system and ahead of all to protect the existing forests. The protection of present forests is crucial issue because it protects the soil against erosion factors (water and wind), improve humidity, slightly lowering the temperatures, increase soil fertility with the fallen leaves, act as safe habitat for wildlife and provide excellent sanctuaries and national parks.

Until 1990 the country was not having intention, or at least the plan, in declaring any protected area/land. This can be referred to very complex social, economic and legal hurdles. But, with the assistance from many international donors and organizations it was possible to raise the awareness of many stakeholders and decision makers about this vital issue. The outcome of this was the declaration of two areas as protected area, Jabal Bura’a and Uttoma’a. As experienced in many “hit and miss” decisions, the announcements of these areas as protected were not all clear but created many critics and urged for revision. There is great chance that the revision may result in retarding of the decision that concerns with Uttoma’a or least add some specifications and limitations to the announcement.

In respect of the forest resources, it is hard to state that Yemen has a real production forest but comparatively to the climatic and geographic zone that Yemen falls in, it
would be admissible to consider the woodlands of Yemen as forest. The reported forests resources of Yemen according to their importance and size are Jabal Bura’a, Hawf, Jabal Iraff, Soqattra, Mangroves, Uttoma’a and Jabal Allawz.

Jabal Bura’a Forest

Jabal Bura’a Forest is one of the important forest/protected area in Yemen that has distinguished biodiversity. It is situated in the Tihama western escarpment 50 km to the north east of Hodiedah city. It is one of the areas that low population density. The last census showed that there is 45 villages inhabited by 1499 families (total population is about 8000 person)

The Forest is located between 41° 54 and 41° 50 longitudes and between 43° 28 and 43° 24 altitudes. The area of this forest estimated as 4100 ha and its elevation of Bura’a Forest ranges between 300 - 1600 meters above the sea level. However, the dense vegetation cover occurs in the area that has elevation of 300-800 m. The slope is very acute and reaches 70% especially in the north and east north aspect and in the western side of the watershed.

Administratively, this forest/protected area comes under the Governor of Hodiedah. It is considered as one of the richest forest/protected area as it includes 81 families of the trees and shrubs. Due to the changes in the climatic factors and uncontrolled human activities it has been noticed that the dense vegetation cover is gradually disappearing and this urged the Ministry of Agriculture and the Ministry of Water and Environment to work hard to announce the forest as a protected area. It is planned that such step will result in a change in the society behaviours and the prevailing utilization mode.

The distinguished location and fairly high elevation makes Jabal Bura’a has the benefit of a diverse climate. The lower part of the forest (low elevation) has
subtropical climate but the higher elevation areas possess mild temperate climate. The rainfall ranges between 40 – 600 mm and the rain occurs during two rainy seasons. The long dry season form the major obstacle of tree growing development. The mean annual temperature is 29°C and the range of temperature between 20-30°C. The soil is fairly shallow one and depth does not exceed 30 cm the pH is 8 which means that the soil is of alkaline nature.

According to the tree density, the forest can be divided into two major sections. first has low tree density but has a large area; i.e., up to 2000 ha. The second section lays in the inner part of the mountain and has a higher tree density, though of its relatively small area that does not exceed 500 ha. Despite of its small sized area but this section represents an import natural resource for many socio economic traditional activities that have been in practice for long times.

This forest is rich in the vegetation composition. There are 22 reported plant species, 12 genera and families. The main trees and shrub species that are reported in Bura’a are: Acacia ehrenbergiana, A. meleifera, Ficus spp., Ziziphus mucionata, Z. spine Christi, Tamrindus Indica, Dobera glabra, Commiphora abyssinica and C kataf. The forest vegetation cover can be classified into five layers:

i) The forest of the valley where the dominant species are F. salisifolia, F. vasta, Terichelia emetica and Tamarindus Indica. This layer includes about 80% of the forest total tree volume and thus considered as the most important part and species.

ii) The forest of the southern foothill. This form very low density and very small area about 16 ha. It has abandonment terraces and many people use to live it this area.

iii) The Acacia forest layer. This is the biggest layer in term of area and has a significant natural regeneration that enables it to resist the over cutting it exposed it.

The layer includes beside Acacia spp. Phoenix spp. and Berchemia discolor.
iv) Deteriorated Acacia forest layer. Is small size area does not exceeding 1% of the Bura’a area. The species composition is similar to the Acacia forest layer.

v) Phoenix recinata forest layer. This is the poorest layer of the Bura’a and constitutes 32% of the total area. However, this layer enjoys an acceptable natural regeneration.

**Hawf Forest**

Hawf is the one of the largest area that is covered with relatively dense dry deciduous forest trees. Such thick and large forest is not present elsewhere in the Arab Peninsula. This forest is the least explored and investigated forest in Yemen and its inaccessible location might be the major justification for such negligence. However, available reports showed that the forest includes over 250 indigenous species some of them have medicinal uses as Commiphora gileadensis (antiseptic) Commiphora habessinica (asthma) while few of these species are rare and some are facing the threat of disappearance.

Hawf is located in the south east corner of Almahra’a Governorate between 52° 42’ and 53° 06’ longitudes and 16° 32’ and 16° 41’ latitudes. The Forest has thick tree cover, high plant and animal diversity and it covers 30000 ha from the region of Ras Fertik until the Yemeni-Oman border. It occupies narrow strips from the coast of the Arabian Sea and extends to the inner/north through the mountains that have altitude of 1400 m. These mountains are considered as a natural extension of the Green Mountain and Dhofar region of Oman.

The topography of Hawf is characterized by the sea and the series of rocky concave mountains, which is rich in limestone and embrace many deep wadis that form a separation between the mountains. There are many several small streams present in the forest but the major wadi in the area is called Wadi Marara as it is the most
important water source for the district. The soil of the forest is calcareous, fertile, varies in depth and physical and chemical characteristics and the significant determinant factor that affect the soil are the slope and the altitude.

Hawf area receives rain during the monsoon time, i.e., mid June – mid Sep. every year. The total precipitation falls in Hawf area is unique in the arid climate of the Arab Peninsula. The process that the forest receives the rain is known as Fog Oasis. In this process the rain occurs from the cumulonimbus clouds which results from the wind that is saturated with water vapour and then condensed when it pass over the cool surface of the sea surface. The rain fall is less at the sea coast (less than 100 m) and in the middle elevation receives up to 500 mm. The vegetation cover suggested as the most effect factor for condensing the moisture. The rain mostly occurs in form of fog, mist, drizzle and shower.

The Forest is dominated by Anogeissus dhofarica as it is one of native species of the region. However, beside Anogeissus other species like Acacia, Jatropha, Commiphora, Ficus, Delonix, Basica, Allophylus and Adenium are also present in considerable rate. During the rainy season the forest experiences rapid vegetative growth and the forest trees, shrubs and grass become very green but they changed to dry and shed their leaves during the dry season. However, species like Acacia, Boscia, Cissus and Delonix remain green and flower during dry season. The plant density is highest in the zone that has elevation from 0-300 m. In this zone there is 4723 plant/ha can be found. In the zone of 300-600 m there is 3811 plant/ha. In the zone that is over 600 m the reported density is 4534 plant/ha.

There many forest dwellers who consider the forest as their homeland. They can be considered as an integral part of the forest ecosystem. The community who lives in the forest are called Maharic and found scattered in the forest landscape in
communities of 2-5 families (10-20 individuals). The Maharic are poor and household earnings are low that do not meet the basic needs. The main occupations are subsistence rain-fed agriculture and herding. The livestock resources include cows, sheep, goats, donkey and camel. The household possession of the cattle might fairly be high but the real value is low due to the distant market. In the settlements near the coast like Jadeb and Rahan the main occupation of the people is fishing. Recently, there is a trend of using Hawf Forest as a recreational area and many people start paying visits to the area and this might help the forest dweller through creation of new jobs and thus improve their living situation.

Iraff Forest

Iraff forest is situated in the western region of Lahajj Governorate at the foothill of the north west escarpment of Almaqatirah. Iraff is considered as connecting point between the dry coastal area and the temperate mountainous area between the 44° 33' 31" and 44° 16' 18" longitudes and 13° 05' 51" and 13° 09' 39" latitudes. Administratively, Iraff area comes under Almaqatirah District, Lahajj Governorate. The total area of Iraff forest is estimated as 400 ha. The forest was under communal ownership but recently the ownership is limited to the community inhabiting the forest and they are about 35 ownerships. The population who lives in Iraff forest area is very small and they would not exceed 800 persons within 150 families and they are living in 16 small villages.

For the last decades the area of Iraff was known for its ecological balance due to the prevailing norms that preside over all people behaviours including the exploitation of the natural resources. This has helped to conserve the small forest and woodland in the area. However, like other regions, many new things happened and changed the balance and then lead to the deterioration of the vegetation cover. The changes can be
seen as change from seasonal pastoral to stable form of living that depends on land reclamation and cultivation. This lead to a high population growth accompanied by many socio-economic activities that affected the forest vegetation. An example for this is the growing demand for fuel wood, road construction and commercial fuel wood felling. These consequences lead to a great retreat in the vegetation cover area specially the Juniperus which was reduced by 50% during the last three decades.

There is no detailed study for the vegetation cover in Iraff forest. However, the last study reported 45 plant species but only 33 of it have been classified. The vegetative cover in Iraff area has three layers:

1- The tree layers which comprise vegetations that have height of 1.5 m and above. This layer composed mainly from Juniperus trees but other species like Altamg, Aldhalam, Aldhuraim, Alethnab and Qaily can also be observed.

2- Shrub layer where the height doesn't exceed 1.5 m and comprises species like Alhomar, Alhamroor and Alfatah.

3- Grass layer that only comprises grasses and seasonal plants.

The vegetation density seems to be independent from the altitudes variations. At the 190 – 1380 m altitude, the reported tree density was over 380 trees/ha and mainly composed of Dodonea viscosa and Juniperus procera. The density was 160 – 660 tree/ha at 1275 – 1420 m and composed of Grewia, Kilab and Juniperus. At the altitude above 1300 m dominated by Acacia etbaica and Juniperus and this is an open woodland and the tree density is less than 200 trees/ha.

There are four forms of plant community reported by Homaimeed, 1998. These are Dodonea viscosa and Juniperus procera and this form the most important community form. It has dense vegetation that reached 1380 trees per hectare beside 15-30 shrubs and 10-15 grasses. The second form is the Grewia and Juniperus community
considered as moderate dense community (240-660 tree/ha) But this form occupies the highest area among the other community form. Two other communities of minor importance are the Kilab and Juniperus that has fair density 160 -320 tree/ha and the Acacia etbaica and Juniperus community which has low density (less than 20 tree/ha).

Throughout the time Iraff forest has played an important stability role for people there through supporting the socio-economic activity of the people in Iraff. The forest provides a grazing ground for the livestock owned by the local people. It also serves a feeding ground for the honey bee that is kept by the people. Last but not least, the forest also provides the people with the energy required through the fuel wood in addition to the required poles for the house construction and agricultural equipments.

Soqattra Island

Soqattra is the biggest islands of Yemen and situated in the Indian Ocean between 12° 19’ and 12° 42’ latitude and 53°20’ and 53°30’ longitudes. The island has a surface area of 3625 km² and comes under the Governorate of Hadhramout. Soqattra is one of the richest regions in term of vegetation cover. It comprises more than 828 plant species of them 260 species are indigenous ones and there are 8 threatened species in Island. The vegetation cover is traditional used for fodder, fuel wood, poles, food, gum/resin extraction and other medicinal uses.

It is hard to consider the vegetation cover of the Island as a real forest, but the fact is that the island has a noticeable plant species that have commercial and medicinal values such as Buxus hildabrandti which is one of the hard wood species. In addition, there are some species that are used for dyes extraction e.g., Gaillonia tiactaria and
Indigfera ruccellatiuctori, Dracaena cinnebari which is used as a source of gum-resin. The Boswelia spp. is used for extracting locally-used-chewing gum.

The Island can be divided into three physiographic regions namely; Coastal plains, Calcic escarpment and Highlands. The coastal plain and near by hilly areas are dominated by Adanum obsum. In the plains, there is dense presence of Elacarpus transultus, Ornocarpum caeuleum and Mussoenda capsulifera. The escarpment and highland are dominated by the Pluchea Euryops/ P. siadia and Dracaena cinnebari.

There are 85000 people inhabiting the island. The people’s main occupations are herding and fishing, nevertheless, there is a recent interest in agriculture and this can be projected from the interest in orchards establishment and agricultural land reclamation. The agriculture land represents 1.5% of the Island area.

Mangroves Forest

The mangroves are group of tropical and sub tropical trees that grow in salty or slightly salty medium and confined to the tideland. It is characterized by the aerial root system and its seeds grow on the tree before it fells in the growing medium. There are many mangroves species but in Yemen there are only two species, the black and the red Shura'a (Avicenna marina and Rhizophera mucronata). The former is widely available compared to the later, which has limited area.

There are many roles played by the mangroves forest in Yemen. It plays as incubator and hatching medium for fish eggs, serves as habitat for local and migrate birds, protect the shore against the erosion and damages by waves and wind, provide green scenery and serve as credit for the tourism and resort. In addition, mangroves trees are suitable and being used for house and boat construction. It serves also as fodder for some camels and goats.
Mangroves are found in scattered area along the Red Sea, in islands close coast. However, the main regions that have dense mangroves are Khor Katheib and Aljathmeiah to the north of Hodiedah and Wadi Siham. Other minor mangroves locations include the Qandal Island that is situated to the west of Khor Katheib and Kamaran Island, island besides Alluhayyiah, the area between Alarj and Ras Eisa’a south east of Asulaif, south of Alkhoba, Jalilah, Aldubaiah, Alzaharyiah, Almulk, Mokha and Alareerah

Uttomah Forest

Uttomah district is situated 50 km in the western part of Dhamar governorate. It is formed of 5 sub districts (Samah, Hemiar Alwasat, Mahal, Bani Bahr and Razih. The topography of the district is mainly high mountainous and embrace many valleys that comprise the main tributaries for Wadi Rima and Wadi Zabid in the north, eastern north and the south and western south respectively. The area of the district is 460 sq. km. The district is announced as protected area in early June 1999.

Jabal Allawz Forest

The Jabal Allawz forest is situated 3300 m above the sea level and it is 50 km east of Sana’a city in Khawlan area between Bani Bahlool and Bani Hushaish. The area of the forest is estimated to be 264 ha and the tree inventory showed that there are 11960 Juniperus, 4000 Talah, Lawaz 680 and 1372 of the other species. The socio-economic activities of the people there are agriculture and herding. The economic importance of this forest lays in the fact that it is most valuable source of Juniperus trees as the pole of this species keeps it viability and strength for longer period compared to other tree species in Yemen.

Existing State of Forest Utilizations and their Impacts
Forest resources play crucial role for the rural people everywhere as it provides sources for fuel wood, poles, food, fodders and minor production. However, excessive and uncontrolled uses of these benefits will deteriorate the forest state to the point that it will no more being capable to continue providing such services and benefits. Rural people might have the excuses for such over exploitation, but the tragedy is that they are the first people who will suffer when the forest resources disappear or jeopardised. Thus, wise use of forest resources is not the responsibilities of forest dwellers but it is every one responsibility because at the end the whole society will suffer. The wise and planned usage of forest services will not only help people in remote areas but it will help the forest itself by facilitating the process of natural regeneration. The following are the major benefits and services provided by the existing forests and protect areas of Yemen. With few exceptional cases, the fundamental benefits of forests are similar but it might differ in the intensity from one area to another.

Poles

The forest is the main source for poles for the people in Bura’a, Hawf and Iraff. People use the poles for home construction, doors, windows and small home furniture. The pole length ranges from 2.5 – 3.00 m. The main source for the poles is the Juniperus but other Acacia species are also use for these purposes. It is very rare to transport the poles to the near by towns and cities because the people there in towns and cities prefer the sawn wood over the local round wood. However, the present forest state is not competent to meet the local people needs, leaving aside the near by cities needs. The price of pole varies depending on the species and location.

Fuel wood and charcoal
Fuel wood extracted from the forest is the major source of energy for the rural people. The person consumes about 0.9 -3.00 kg of fuel wood per day. The forest dwellers in obtain fuel wood from the following species: Juniperus, Aloe, Caralluma, Cissus, Euphorbia, Qaradh, Altamg, Al maqar, Almaanaa and Alhomor. Some of the forest trees are felled for the production of charcoal. Usually charcoal produced by small business men who are not forest dwellers but they provide employment opportunities for the forest dwellers. The charcoal represents the real threat for the forest trees because it is being produced in commercial quantities not to meet forest dwellers needs. There are no laws or regulations to organise the production and movement of the charcoal and this is the real risk for the forest resources.

Herding (grazing)

Due to the scarcity of agricultural lands animal herding is the major activities for the forest dwellers in Yemen. The forest people keep and rear different livestock such as cows, goats, sheep donkeys and in few cases camel. Some of the forest dwellers benefit from the forest as grazing ground for their cows for six months while the goats and sheep use the forest through out the year. The grazing does not follow any systematic approach and herders may drive their animals all over the forest without exempting any marginal lands or rare species. Here the threat will emerge because after a period of time there will be no new regeneration and forest vegetation cover deteriorate before it totally vanish t the end.

Honey bee keeping

Honey bee keeping is one of the safe utilization of the forest resources that would not bring any harm to the forest vegetation. Honey bee keeping is an old traditional occupation that provide additional source of income for the forest dwellers. The experience and interests of the dwellers differs from one forest to another and it hard
to single out any skilled honey bee producers among Yemeni forest dwellers. In Iraff, the average the household has about 18 hives and some households have been reported to have 150 hives. The production of a single hive could give return of YR 6000 per year. In Bura’a Forest is the honey bee production is relatively new thing recently introduced to the area.

Minor forest benefits

The forest and protected area of Yemen provide many minor benefits such as species that is being used as food, for example Tamrindus Indica, Ziziphus spp. and Commiphora spp. There are some other species used for medicinal purposes such as Commiphora gileadensis (antiseptic) and Commiphora habessinica (asthma).

The mangroves forest has an important environment role beside the scenery value, hatching medium for the prawn and fishes.

Finally, the development activities; e.g., road construction in Bura’a Forest, is one of the activities that worsen the forest state. Road construction affects the forest directly by removing trees and other vegetation, deteriorating the forest environment and marginal areas. It also affects the forest through in direct way by facilitating the transportation of illegal/uncontrolled tree felling and cutting. However, construction does have benefit to the society as whole, forest vegetation and forest dwellers. Salt mines, boat port and prawn farms are other example of development activities that will affect rare mangroves forest and need special attention.

Conclusion

The forest and protected areas of Yemen are rare green areas in the dry Arabian Peninsula. These areas serve as living museum that include rare plant species and the remote location of these resources has helped to save them from disappearance. The
forests of Yemen are natural regenerated therefore no wonder they are low producer and missing effective management system. Even though, the potential of these forests areas are not well utilized as the current forms of utilizations showed traditional and primitive utilization forms.

There are no independent reliable source as regard to the quantities, values, utilization and employment involved in forest products and services provided by the forest resources. However the reports of the GDFDC, Ministry of Agriculture and Irrigation (MAI) suggest that the forest resources meet entire local rural demand from fuel wood, charcoal, and poles for rural house construction.

One of the administrative obstacles for forest development in Yemen is the conflict of interest beside interlink of responsibilities between official “government” bodies. Another obstacle the forests face is the rights and concessions for the forest dwellers and the absence of legislation and regulation that control such things. Last but not least, almost all Yemen forests have no clear status for the land ownership and this hinders their development and their survival as well.