## Appendix

Appendix (1) Botanical Latin name, Botanical types and Local name

| Botanical Latin name         | Botanical types | Local name         |  |  |
|------------------------------|-----------------|--------------------|--|--|
| Acanthospermum hespidum      | Forbs           | Kharab housa       |  |  |
| Amaranthus grecans           | Forbs           | Lesan Eltier       |  |  |
| Andropogon gayanyus          | Grass           | Aburakheese        |  |  |
| Aristida mutablis            | Grass           | Gaw                |  |  |
| Asteraceae hyperhernia ofrun | Forbs           | Abu-morrwa         |  |  |
| Blepharis linariifolia       | Forbs           | Begeal             |  |  |
| Buffalo grass                | Grass           | Khashesha Eljamoos |  |  |
| Cassia tora                  | Forbs           | Kwal               |  |  |
| Chloris gyana                | Grass           | Afan Elkhadim      |  |  |
| Corchorus ditorius           | Forbs           | Khodra             |  |  |
| Cucumia dispaceors           | Forbs           | Eragelgazal        |  |  |
| Dactylactinum aegyptioum     | Grass           | Abu-asabie         |  |  |
| Demodium dichotomum          | Forbs           | Abu-areeda         |  |  |
| Echinocola colonum           | Grass           | Difra              |  |  |
| Eragrostis tremula           | Grass           | Bannu              |  |  |
| Euphorbia hirtal             | Forbs           | Um- lobiena        |  |  |
| Farsetia grandiflora         | Forbs           | Nwara              |  |  |
| Hygrophylla spinosa          | Forbs           | Um-shwieka         |  |  |
| Hyparrhenia confinis         | Grass           | Um-rajjo           |  |  |
| Impomea kordofana            | Forbs           | Tabar              |  |  |

| Indigofra spp           | Forbs | Sharaya           |
|-------------------------|-------|-------------------|
| Ipomoea coptica         | Forbs | Eragelnar         |
| Jasminum nitidum        | Forbs | Khashem Elnaseeba |
| Justicia kotschyi       | Forbs | Nana              |
| Loranthus spp           | Forbs | Enabeldb          |
| Marettia philaeana      | Forbs | Neyada            |
| Ocimum basilicum        | Forbs | Rehan bary        |
| Oldenlandia herbacea    | Forbs | Um-kenatillat     |
| Pennisetum pedicellatum | Grass | Um-Dofofo         |
| Rhynchosia minima       | Forbs | Adanelfar         |
| Schonfeidia gracilis    | Grass | Danb Elnaga       |
| Sesbania arabic         | Forbs | soreeb            |
| Setaria pallidea fusea  | Grass | Dohon Eltier      |
| Sorghum halepense       | Grass | Adar              |
| Sorghum purpureosercim  | Grass | Bejl              |
| Symbopogan nevratus     | Grass | Nal               |
| Tribulus terrestris     | Forbs | Dirassa           |
| Xanthium brosilicum     | Forbs | Lazag             |
| Zornia glochidiata      | Forbs | Sheliny           |



Appendix (2) shows sacrifices area round water points at study area



Appendix (3) the effect of open grazing system on vegetation attributes



Appendix (4) the effect of open grazing system on vegetation attributes



Appendix (5) the plants diversity at grazing sites

| Site .  | • • • • • • • • •                       | • • • • • •                             | • • • • • • • | • • • • •                               | Date  |                 |      |           | • • • • • |   |
|---|---|---|---------------|---|-------|-----------------|------|-----------|-----------|---|
| Transect number Group .                       |   |   |               |   | up    | •••             |      |           |           |   |
|   |   |   |               |   |       |                 |      |           |           |   |
|   |   |   |               |   |       |                 |      |           |           |   |
|   |   |   |               |   |       |                 |      |           |           |   |
|   |   |   |               |   |       |                 |      |           |           |   |
|   |   |   |               |   |       |                 |      |           |           |   |
|   |   |   |               |   |       |                 |      |           |           |   |
|   |   |   |               |   |       |                 |      |           |           |   |
|   |   |   |               |   |       |                 |      |           |           |   |
|   |   |   |               |   |       |                 |      |           |           |   |
|   |   |   |               |   |       |                 |      |           |           |   |
|   |   |   |               |   |       |                 |      |           |           |   |
|   | 1                                       |   |               |   |       |                 |      |           |           |   |
|   |   |   |               |   |       |                 |      |           |           |   |
| Spp =   | Plants sp                               | ecies                                   |               |   |       | R =             | Roc  | k         |           |   |
| L = li  | tter                                    |   |               |   |       | Bs =            | Bare | soil      |           |   |
| Site description                              |   |   |               |   |       |                 |      |           |           |   |
| •••••   |   | • |               | • |       | • • • • • • • • |      | • • • • • |           | • |
|   |   |   |               | • |       | • • • • • • • • |      | • • • • • |           |   |
|   | • |   |               |   | ••••• |                 |      |           |           |   |
|   |   |   |               |   |       |                 |      |           |           |   |
| Appendix (6) range inventory form (loop form) |   |   |               |   |       |                 |      |           |           |   |
| Site .  | • • • • • • • • •                       |   | • • • • • • • | • • • • •                               |       |                 |      | Dat       | e         | • • • • •                               |
|   | lrate nun                               | nber .                                  | • • • • • • • | • • • • • • •                           |       |                 |      |           | oup       |   |
| Q.  | Cover %                                 | Spe                                     | cies four     | nd                                      | Q.    | Cover           | %    | Spec      | cies fou  | nd                                      |
| No  |   |   |               |   | No    |                 |      |           |           |   |

| 1           |   | 6        |      |
|-------------|---|----------|------|
| 2           |   | 7        |      |
| 3           |   | 8        |      |
| 4           |   | 9        |      |
| 5           |   | 10       |      |
| Site        | description                             | <u>I</u> |      |
| • • • • • • | • | <br>     | <br> |

| one description. |       |       |
|------------------|-------|-------|
| •••••            | ••••• | ••••• |
| •••••            | ••••• |       |

Appendix (7) range inventory form (Quadrate form)

| Site | Transect (no) | Sample (no) | Weight/g |
|------|---------------|-------------|----------|
|      |               |             |          |
|      |               |             |          |
|      |               |             |          |

| Total |  |  |
|-------|--|--|

Appendix (8) biomass production forms (weight/g)

## Appendix (9) Questionnaire

## 

| Others occup              | pation besides a       | ınimal birding                          | g: farmer              | traded                   | self worker              |
|---------------------------|------------------------|---|------------------------|--------------------------|--------------------------|
| other                     |                        | •••••                                   | •••••                  |                          |                          |
| System of life            | e: nomad               | semi- no                                | omad                   | stalled                  |                          |
| Type of anin              | nal that you bri       | <b>de</b> : Cattle                      | Ca                     | melShee                  | ep                       |
| Goats                     | others                 | • | ·····                  | ·····                    |                          |
| Is there spec             | ific system to u       | se rangeland:                           | yes                    | no                       |                          |
| The animal 1              | number in rain         | y season grazi                          | ng land compa          | red with the past        | time: are                |
| increased                 | re decrea              | sed                                     | no chan                | ge                       |                          |
| Is there map              | for grazing lar        | nds: yes                                | no                     |                          |                          |
| The period o              | f come to (rain        | y season grazi                          | ng area) Maha          | rife:                    |                          |
| When you go               | back to msaif          | e (dry season g                         | grazing area)          |                          |                          |
| Compared w                | ith the past tin       | ne is a period t                        | o sty on rainy         | season grazing la        | nd area are              |
| increased                 |                        | deceased                                |                        |                          |                          |
| Reason (why               | ·):                    |   |                        |                          |                          |
| 1                         |                        | •••••                                   |                        |                          |                          |
| 2                         |                        | •••••                                   |                        |                          |                          |
| 3                         |                        |   |                        |                          |                          |
| 4                         |                        |   | •••••                  |                          |                          |
| Is the rangel             | ands is decreas        | ed when comp                            | ared with past         | time: yes                | no                       |
|                           |                        |   |                        |                          |                          |
| If your answ              | er is yes, is the      | reason:                                 |                        |                          |                          |
| 1- Expar                  | nsion of agricult      | ure land                                |                        |                          |                          |
| 2- Increa                 | sing of populati       | on number in v                          | village                |                          |                          |
| 3- Increa                 | sing of animals        | number in rain                          | y grazing lands        |                          |                          |
| The reason                | of disappearing        | g on some rang                          | ge plants are:         |                          |                          |
| 1- Overg                  | grazing                |   |                        |                          |                          |
| 2- Decre                  | ased on rain am        | ount                                    |                        |                          |                          |
| 3- Seaso                  | nal fire               |   |                        |                          |                          |
| The plants th             | ıat disappeared        | l in rangeland                          | s are:                 |                          |                          |
| Blepharis<br>linariifolia | Demodium<br>dichotomum | Asteraceae<br>hyperhernia<br>ofrun      | Andropogon<br>gayanyus | Sorghum<br>purpureoserci | Dactylactinum aegyptioum |

|                               |                      |                             |    |                       | m |                     |        |
|-------------------------------|----------------------|-----------------------------|----|-----------------------|---|---------------------|--------|
| The plants th                 | nat appeared i       | n rangelands ar             | e: |                       |   |                     |        |
| Euphorbia<br>hirtal           | Cassia<br>tora       | Acanthospermu<br>m hespidum | I  | Xanthiun<br>brosilicu |   | Jasminum<br>nitidum | others |
| Sources of water:  1          |                      |                             |    |                       |   |                     |        |
| 1-Drinking w<br>2-Grazing lan | d<br>erders and farm |                             |    |                       |   |                     |        |