## **Annexes**

**Table 8**: Respondent’s background data based on sample size ( n=80).

|  |  |  |  |
| --- | --- | --- | --- |
| n | Gender | Age | Educational Level |
| 1 | Female | ≤15 | illiterate |
| 2 | Female | ≤15 | illiterate |
| 3 | Female | ≤15 | illiterate |
| 4 | Female | ≤15 | illiterate |
| 5 | Female | ≤15 | illiterate |
| 6 | Female | ≤15 | illiterate |
| 7 | Female | ≤15 | illiterate |
| 8 | Female | 16-40 | illiterate |
| 9 | Female | 16-40 | illiterate |
| 10 | Female | 16-40 | illiterate |
| 11 | Female | 16-40 | illiterate |
| 12 | Male | 16-40 | illiterate |
| 13 | Male | 16-40 | illiterate |
| 14 | Male | 16-40 | illiterate |
| 15 | Male | 16-40 | illiterate |
| 16 | Male | 16-40 | illiterate |
| 17 | Male | 16-40 | illiterate |
| 18 | Male | 16-40 | illiterate |
| 19 | Male | 16-40 | illiterate |
| 20 | Male | 16-40 | illiterate |
| 21 | Male | 16-40 | illiterate |
| 22 | Male | 16-40 | illiterate |
| 23 | Male | 16-40 | illiterate |
| 24 | Male | 16-40 | illiterate |
| 25 | Male | 16-40 | illiterate |
| 26 | Male | 16-40 | illiterate |
| 27 | Male | 16-40 | illiterate |
| 28 | Male | 16-40 | illiterate |
| 29 | Male | 16-40 | illiterate |
| 30 | Male | 16-40 | illiterate |
| 31 | Male | 16-40 | illiterate |
| 32 | Male | 16-40 | illiterate |
| 33 | Male | 41-64 | illiterate |
| 34 | Male | 41-64 | illiterate |
| 35 | Male | 41-64 | illiterate |
| 36 | Male | 41-64 | illiterate |
| 37 | Male | 41-64 | illiterate |
| 38 | Male | 41-64 | illiterate |
| 39 | Male | 41-64 | illiterate |
| 40 | Male | 41-64 | illiterate |
| 41 | Male | 41-64 | illiterate |
| 42 | Male | 41-64 | illiterate |
| 43 | Male | 41-64 | illiterate |
| 44 | Male | 41-64 | illiterate |
| 45 | Male | ≥65 | illiterate |
| 46 | Male | ≥65 | illiterate |
| 47 | Male | ≥65 | illiterate |
| 48 | Male | ≥65 | illiterate |
| 49 | Male | ≤15 | literate(1-4) |
| 50 | Male | ≤15 | literate(1-4) |
| 51 | Male | ≤15 | literate(1-4) |
| 52 | Male | ≤15 | literate(1-4) |
| 53 | Male | 16-40 | literate(1-4) |
| 54 | Male | 16-40 | literate(1-4) |
| 55 | Male | 16-40 | literate(1-4) |
| 56 | Male | 16-40 | literate(1-4) |
| 57 | Male | 16-40 | literate(1-4) |
| 58 | Male | 16-40 | literate(1-4) |
| 59 | Male | 16-40 | literate(1-4) |
| 60 | Male | 16-40 | literate(1-4) |
| 61 | Male | 41-64 | literate(1-4) |
| 62 | Male | 41-64 | literate(1-4) |
| 63 | Male | 41-64 | literate(1-4) |
| 64 | Male | ≥65 | literate(1-4) |
| 65 | Male | ≥65 | literate(1-4) |
| 66 | Male | 16-40 | literate(5-8) |
| 67 | Male | 16-40 | literate(5-8) |
| 68 | Male | 16-40 | literate(5-8) |
| 69 | Male | 16-40 | literate(5-8) |
| 70 | Male | 16-40 | literate(5-8) |
| 71 | Male | 41-64 | literate(5-8) |
| 72 | Male | 41-64 | literate(5-8) |
| 73 | Male | 41-64 | literate(5-8) |
| 74 | Male | ≥65 | literate(5-8) |
| 75 | Male | 16-40 | literate(9-10) |
| 76 | Male | 16-40 | literate(9-10) |
| 77 | Male | 16-40 | literate(9-10) |
| 78 | Male | 41-64 | literate(9-10) |
| 79 | Male | ≥65 | literate(9-10) |
| 80 | Male | ≥65 | literate(9-10) |

**Table 9**: Research questions depending on respondents answer ( n=80).Hence, data for monthly income from sale of gum-resin only 21.25% of respondents/ households (HHs) i.e., n=17 out of 80 HHs.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Livelihood options | Gum-resin monthly income (Bena-Tsemay) | Gum-resin monthly income (Hamer) | Existence of gum-resin producing tree/shrubs | Harvest gum-resin for use | harvest for sale | Business cooperatives associations | Member for gum resin collection | Collection gum resin is the simplest and fastest means to incur income | Income from gum-resin products used as safety-net | Presence of scientific tapping techniques |
| Sale of live animals | Gum Arabic(240 ETB) | Gum Arabic(196 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Gum Arabic(240 ETB) | Gum Arabic(196 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Gum Arabic(240 ETB) | Gum Arabic(196 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Gum Arabic(240 ETB) | Gum Arabic(196 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Gum Arabic(240 ETB) | Gum Arabic(196 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Gum Arabic(240 ETB) | Gum Arabic(196 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Gum Arabic(240 ETB) | Gum Arabic(196 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Gum Arabic(240 ETB) | Gum Arabic(196 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Frankincense(165 ETB) | Frankincense(135 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Frankincense(165 ETB) | Frankincense(135 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Frankincense(165 ETB) | Frankincense(135 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Frankincense(165 ETB) | Frankincense(135 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Frankincense(165 ETB) | Frankincense(135 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Frankincense(165 ETB) | Frankincense(135 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Myrrh(105 ETB) | Myrrh(49 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Myrrh(105 ETB) | Myrrh(49 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals | Myrrh(105 ETB) | Myrrh(49 ETB) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals |  |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals |  |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals |  |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals |  |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals |  |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals |  |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals |  |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals |  |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sale of live animals |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| Sale of crop and honey |  |  | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | No |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | No |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | No |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | No |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | No |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | No |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | Yes | Yes | No |
| Sale of gum-resin |  |  | Yes | No | Yes | No | Yes | No | No | No |
| Sale of edible fruits |  |  | Yes | No | Yes | No | Yes | No | No | No |
| Sale of edible fruits |  |  | Yes | No | Yes | No | Yes | No | No | No |
| Sale of edible fruits |  |  | Yes | No | Yes | No | Yes | No | No | No |
| Sale of edible fruits |  |  | Yes | No | Yes | No | Yes | No | No | No |
| Sale of edible fruits |  |  | Yes | No | Yes | No | Yes | No | No | No |
| Sale of edible fruits |  |  | Yes | No | No | No | Yes | No | No | No |
| Sale of edible fruits |  |  | Yes | No | No | No | No | No | No | No |
| Sale of edible fruits |  |  | Yes | No | No | No | No | No | No | No |
| Sale of edible fruits |  |  | Yes | No | No | No | No | No | No | No |
| Sale of edible fruits |  |  | No | No | No | No | No | No | No | No |
| Sale of edible fruits |  |  | No | No | No | No | No | No | No | No |
| Sale of edible fruits |  |  | No | No | No | No | No | No | No | No |

Source: Field survey (2018/19).

**Table 10**: Summary of data on gum-resin bearing tree species and their local use according to the respondent’s answer.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Local use of bearing Species for cash income | Local use of bearing Species for sanitation | Local use of bearing Species for fumigation | Local use of bearing Species for dum chewing | Local use of bearing Species for food |
| *Acacia senegal* | *Acacia senegal* | *Boswellia neglecta* | *Boswellia neglecta* | *Acacia senegal* |
| *Acacia seyal* | *Acacia tortilis* | *Commiphora africana* | *Commiphora boranensis* |  |
| *Acacia tortilis* | *Boswellia neglecta* | *Commiphora boranensis* | *Commiphora bruceae* |  |
| *Boswellia neglecta* | *Commiphora africana* | *Commiphora bruceae* |  |  |
| *Commiphora africana* | *Commiphora boranensis* | *Commiphora myrrh* |  |  |
| *Commiphora boranensis* | *Commiphora bruceae* |  |  |  |
| *Commiphora bruceae* | *Commiphora myrrh* |  |  |  |
| *Commiphora myrrh* | *Commiphora schimperi* |  |  |  |
| *Commiphora schimperi* | *Acacia nubica* |  |  |  |
| *Acacia nubica* |  |  |  |  |