I. Questions and check list to assess hygienic handling practices at slaughterhouses

A. Basic information
   1. Date __________
   2. Code __________

B. Sociodemographic characteristics of the respondents
   1. Sex: Male [ ] Female[ ]
   2. Age: __________
   3. Level of Education: Illiterate [ ] Informal Education [ ] Primary Education [ ] Secondary Education [ ]
      Other (Specify) ________________
   4. Duration of working at the slaughter houses (in years)? __________
   5. Duty at the slaughter houses? Veterinarian/meat inspector [ ] Stunning [ ] De-hiding [ ]
      Other (specify) __________

C. Hygienic handling practices at slaughterhouses
   C-1. Check list for observations
   1. Stunning before slaughter: Yes[ ] No [ ]
   2. Stunning method: ________________
   3. Waiting time to start dehiding after stunning and bleeding: ________________
   4. Method of carcass dressing: Vertical (hanging) Horizontal (on floor): ________________
   5. Presence of sink for washing hands in the slaughterhouse: Yes [ ] No [ ]
   6. Carcass washing after evisceration: Yes [ ] No [ ]
   7. Use of the following protective materials while working in the slaughterhouse:

<table>
<thead>
<tr>
<th>Protective materials</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Apron</td>
<td></td>
</tr>
<tr>
<td>white coat</td>
<td></td>
</tr>
<tr>
<td>Head cover</td>
<td></td>
</tr>
<tr>
<td>Gloves</td>
<td></td>
</tr>
<tr>
<td>Boots</td>
<td></td>
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</tbody>
</table>
C-2. Questions for face to face interviews

1. Do you wash your hands frequently during slaughter operation: Yes [ ] No [ ]
2. Do you wash your hands with soap: Yes [ ] No [ ]
3. Do you use the same knife for dehiding and evisceration: Yes [ ] No [ ]
4. Do you wash your hands in between activities: Yes [ ] No [ ]
5. Do you sink the knife in hot water after each activity: Yes [ ] No [ ]
6. What do you think is the possible sources for carcass contamination: [ ] Feces during evisceration [ ] hides during dehiding [ ] handlers hand [ ] knife [ ] floor [ ] hanging hook [ ] Others(specify)___________
7. What is the source of water used in the slaughterhouse: City/Municipal tap water [ ] borehole [ ] collected rain water [ ] River [ ] others (specify) ________________
8. Have you ever received any training on hygienic handling of meat: Yes [ ] No [ ]
9. Have you gone for medical checkups to work at the slaughterhouse: Yes [ ] No [ ]
10. If yes, how frequent you go for medical checkup: every three months [ ] every six months [ ] once per year [ ]
11. Do you think improvements are needed to avoid contamination of carcass at the slaughterhouse: Yes [ ] No [ ]
12. If yes, what kind of improvement: __________________________
II. Questions for face to face interview and check list for direct observation to assess hygienic handling practices at beef retailshops

A. Basic information
   1. Date________________
   2. Code________________

B. Sociodemographic of characteristics
   1. Sex: Male [ ] Female[ ]
   2. Age____________
   3. Level of Education: Illiterate [ ] Informal Education [ ] Primary Education [ ] Secondary Education [ ]
      Other (specify)____________
   4. Duration of working at meat retail outlet (in years)? _____________
   5. Religion____________
   6. Ethnicity__________________

C. Hygienic handling practices at slaughterhouses
   C-1. Check list for observations
      1. Presence of any cover on meat display case: Yes [ ] No [ ]
      2. Retail shop floor is made of : Concrete [ ] Tile [ ] Wood earthen material [ ] others(specify)______
      3. Wall and ceiling are clean or free of dust: Yes [ ] No [ ]
      4. Wall painted with white color: Yes [ ] No [ ]
      5. Ventilation status of display case and butchery: Good [ ] Fair [ ] Poor [ ]
         Good-ventilation allows air flow into the butchery but sieves off dust and other particles [ ]
         Fair-ventilation allows air flow but do not sieve dust or other particles or allows very little air flow [ ]
         Poor-ventilation does not allow air flow at all [ ]
      6. Presence and use of bulbs at the display case: Yes [ ] No [ ]
      7. Meat cooling facility (refrigerator) at the display cabinet: Yes [ ] No [ ]
      8. Presence of sink for washing hands at beef sale point: Yes [ ] No [ ]
      9. Type/kind of cutting board used: Wood [ ] plastic [ ] Metal [ ] concrete [ ] Marble [ ]
     10. Presence of hot water baths for dipping knives: Yes [ ] No [ ]
     11. Material used to pack or wrap meat for sale: Newspaper[ ] Plastic [ ] Used paper[ ]
     12. Use the following protective materials while selling or handling meat:
<table>
<thead>
<tr>
<th>Protective materials</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apron/white coat</td>
<td></td>
</tr>
<tr>
<td>Head cover</td>
<td></td>
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<tr>
<td>Gloves</td>
<td></td>
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</tbody>
</table>

C-2. Questions for face to face interviews

1. What is the means of transporting meat from slaughterhouse to the retail shop: Open vehicle [ ] Closed vehicle [ ] Animal transport (Cart horse) [ ]

2. How frequent do you use washed the protective coat (white coat and apron): Once per day in the evening [ ] Twice per day, morning and evening [ ] Once after every two days [ ] Once per week [ ] others [ ]

3. Do you have a refrigerator for storage of the meat that remains from daily sale: Yes [ ] No [ ]

4. Do you wash your hands before touching meat: Yes [ ] No [ ]

5. Do you wash your hands with soap: Yes [ ] No [ ]

6. What is the source of water for use in the butchery: City/Municipal tap water [ ] borehole [ ] rain collected water [ ] river [ ] others (specify) [ ]

7. How often do you wash the following butchery surfaces and equipment:

<table>
<thead>
<tr>
<th>Frequency of washing</th>
<th>Equipment/surfaces</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Knife</td>
</tr>
<tr>
<td>Once per day in the morning</td>
<td></td>
</tr>
<tr>
<td>Once per day in the evening</td>
<td></td>
</tr>
<tr>
<td>Twice per day</td>
<td></td>
</tr>
<tr>
<td>More than twice</td>
<td></td>
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<tr>
<td>Once in every two days</td>
<td></td>
</tr>
<tr>
<td>Others (specify)</td>
<td></td>
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</tbody>
</table>
8. Do you use detergent/disinfectant for cleaning the butchery utensils: Yes [ ] No [ ]
9. If “Yes” what types of detergent/disinfectant:________________________
10. What is the way of cleaning butchery equipment: Using cold water only [ ], cold water with soap [ ] hot water only [ ] hot water with soap [ ] wiping with pieces of fabrics [ ] others (specify)_________
11. Is there routine control of flies at the retail shop: Yes [ ] No [ ]
12. If “Yes”, what is the method used to control flies: ________________
13. How long does the meat stay in your butchery before it is sold? Less than 12 hours [ ] One day [ ] Two days [ ]
14. Do you collect money while handling or selling meat: Yes [ ] No [ ]
15. Have you ever received any training on hygienic handling of meat: Yes [ ] No [ ]
16. Do you ever receive complaints from the consumers on the quality of the meat you sell: Yes [ ] No [ ]
17. If yes, what kind of complaint: Abdominal upsets [ ] Tough meat [ ] Dirty meat [ ] others [ ]_________
18. Have you gone for medical checkups in the last 6 months: Yes [ ] No [ ]
19. How frequent you go for medical checkup: Every three months [ ] very six months [ ] Once per year [ ]
20. Do you have different storage and display cabinets for offal’s and meat: Yes [ ] No [ ]
21. Do you use the same equipment’s such as knife while handling meat and the offals: Yes [ ] No [ ]
22. Do you believe that the butchery where are you working requires some improvement for better handling of meat: Yes [ ] No [ ]
23. If yes, what kind of improvement:_____________