

## S1 Questionnaire

**Title: A Participatory Approach in Assessing the Knowledge, Attitude and Practices (KAP) of Stakeholders and Livestock Owners about Ticks and Tick-Borne Diseases from Sindh, Pakistan**

### Section 1.1: Sociodemographic information of Participant's

1.1.1	Name:	
1.1.2	Age (Years):	
1.1.3	Gender:	1 <input type="checkbox"/> Male 2 <input type="checkbox"/> Female
1.1.4	Level of education:	1 <input type="checkbox"/> No school attended 2 <input type="checkbox"/> Received non-formal education 3 <input type="checkbox"/> Completed Primary school education 4 <input type="checkbox"/> High level school 5 <input type="checkbox"/> Secondary level 6 <input type="checkbox"/> Graduation
1.1.5	Profession or status	1. <input type="checkbox"/> Community member 2. <input type="checkbox"/> Veterinarian 3. <input type="checkbox"/> Livestock owner

## Section 1.2: Animal husbandry and Managerial strategy

1.2.2	Animal feeding practice at your livestock farm?	1 <input type="checkbox"/> Stall feeding 2 <input type="checkbox"/> All-time free grazing 3 <input type="checkbox"/> Mixture of all the above
1.2.2	Animal catchment area?	1 <input type="checkbox"/> Forested 2 <input type="checkbox"/> Urban 3 <input type="checkbox"/> Rural 4 <input type="checkbox"/> Semi-Urban

## Section 2.1: Awareness and knowledge of TTBDs in livestock

2.1.1	Have you ever encountered a tick?	1 <input type="checkbox"/> No 2 <input type="checkbox"/> Yes
2.1.2	If you have encountered a tick, where do you typically find them?	1 <input type="checkbox"/> Forest 2 <input type="checkbox"/> Animals body 3 <input type="checkbox"/> Pasture land 4 <input type="checkbox"/> Agriculture land 5 <input type="checkbox"/> All of the above
2.1.3	In which areas do you believe ticks are mostly found?	1 <input type="checkbox"/> Warm places 2 <input type="checkbox"/> Cold places 3 <input type="checkbox"/> Both the places
2.1.4	During which season ticks are mostly found on livestock?	1 <input type="checkbox"/> Winter 2 <input type="checkbox"/> Summer 3 <input type="checkbox"/> Throughout the year

2.1.5	From where do you believe animals acquire ticks?	1 <input type="checkbox"/> Grazing land 2 <input type="checkbox"/> Bedding materials 3 <input type="checkbox"/> Forest 4 <input type="checkbox"/> Agriculture land 5 <input type="checkbox"/> No idea
2.1.6	Which types of livestock breeds do you think are most susceptible to tick infestation?	1 <input type="checkbox"/> Indigenous breeds 2 <input type="checkbox"/> Non- Native breeds 3 <input type="checkbox"/> No idea
2.1.7	In your opinion which animal breed mostly affected with TTBDs?	1 <input type="checkbox"/> Females 2 <input type="checkbox"/> Old animals 3 <input type="checkbox"/> Young animals 4 <input type="checkbox"/> Adults
2.1.8	Most commonly tick infestation site on animal body is?	1 <input type="checkbox"/> Neck region 2 <input type="checkbox"/> Chest and axillae 3 <input type="checkbox"/> Groin and udder 4 <input type="checkbox"/> Head region 6 <input type="checkbox"/> Dewlap 7 <input type="checkbox"/> Anus and perianal region 8 <input type="checkbox"/> Others (belly and limbs)
2.1.9	Tick infestation remains always unless it removed?	1 <input type="checkbox"/> No 2 <input type="checkbox"/> Yes 3 <input type="checkbox"/> Don't know

2.1.12	What are the most devastating effects of ticks on health and production of an animal? You can choose more options .	1 <input type="checkbox"/> Bloodsucking 2 <input type="checkbox"/> Bite wound 3 <input type="checkbox"/> Anorexia 4 <input type="checkbox"/> Loss of weight 5 <input type="checkbox"/> Babesiosis 6 <input type="checkbox"/> Anaplasmosis 7 <input type="checkbox"/> Theileriosis 8 <input type="checkbox"/> Fever 9 <input type="checkbox"/> Red or brown color urine 10 <input type="checkbox"/> Hide damage 11 <input type="checkbox"/> Loss of production 12 <input type="checkbox"/> Don't know
2.1.13	Animals can get diseases from ticks?	1 <input type="checkbox"/> No 2 <input type="checkbox"/> Yes 3 <input type="checkbox"/> Don't know
2.1.14	Do you know about any tick-borne disease of animals?	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No

## Section 2.2: Human being and ticks (A zoonotic perspective)

2.2.1	Did you experience tick bite ever?	1 <input type="checkbox"/> No 2 <input type="checkbox"/> Yes
2.2.2	Which symptoms do you think any person can feel after tick bite? <i>If you think choose more than one option.</i>	1 <input type="checkbox"/> Fever and headache 2 <input type="checkbox"/> Irritation with pain 3 <input type="checkbox"/> Swelling around the bite and rash 4 <input type="checkbox"/> No symptoms
2.2.3	In your opinion ticks can transmit disease in human beings?	1 <input type="checkbox"/> No 2 <input type="checkbox"/> Yes 3 <input type="checkbox"/> Don't know

## Section 3: Respondents attitudes towards tick control

Attitude Questions on Likert scale	1	2	3	4	5
3.1 Tick infestations in animals can be reduced by using synthetic acaricides appropriately.	Agree	Strongly agree	Disagree	Strongly disagree	No opinion
3.2 The risk of tick infestation can be avoided by keeping the animals in the shed at all times.	Agree	Strongly agree	Disagree	Strongly disagree	No opinion
3.3 Adopting excellent farm practices (e.g., regular floor washing, regular animal checks, avoiding the use of bedding materials, etc.) helps lower the danger of tick infestation.	Agree	Strongly agree	Disagree	Strongly disagree	No opinion

#### Section 4: Practices of respondents in livestock farms

4.1	What is the primary reason for raising animal in your household)?	1 <input type="checkbox"/> Breeding purpose 2 <input type="checkbox"/> Sale of animal products 3 <input type="checkbox"/> Sale of animals to get income 4 <input type="checkbox"/> Family consumption of products 5 <input type="checkbox"/> As a source of manure 6 <input type="checkbox"/> Breeding purpose
4.2	Animal shed type?	1 <input type="checkbox"/> Open tethering 2 <input type="checkbox"/> CGI Sheet and wooden floors. 3 <input type="checkbox"/> Traditional Shed 4 <input type="checkbox"/> CGI Sheet and concrete floors.

4.3	Frequency of washing of your concrete livestock farm?	1 <input type="checkbox"/> Monthly 2 <input type="checkbox"/> Daily 3 <input type="checkbox"/> Weekly 4 <input type="checkbox"/> Fortnightly 5 <input type="checkbox"/> Not once
4.4	In your shed do you use bedding material?	1 <input type="checkbox"/> No 2 <input type="checkbox"/> Yes
4.5	If you use bedding material which type you use?	1 <input type="checkbox"/> Paddy straw 2 <input type="checkbox"/> Maize stover 3 <input type="checkbox"/> Litter leaves 4 <input type="checkbox"/> Bracken fern
4.6	In which season do you use bedding material?	1 <input type="checkbox"/> Winter 2 <input type="checkbox"/> Summer 3 <input type="checkbox"/> Throughout the year
4.7	In your opinion which diseases are mostly prevalent in livestock? <i>Select 3 of the problems</i>	1 <input type="checkbox"/> Endo parasitism 2 <input type="checkbox"/> Milk fever 3 <input type="checkbox"/> Mastitis 4 <input type="checkbox"/> Foot and mouth disease 5 <input type="checkbox"/> Plant poisoning 6 <input type="checkbox"/> Bacterial diseases 7 <input type="checkbox"/> Tick infestation
4.8	Why you visit to veterinary centers and for what purpose you visit to centers?	1 <input type="checkbox"/> Livestock products input 2 <input type="checkbox"/> Medication for sick animal 3 <input type="checkbox"/> Deworming agents 4 <input type="checkbox"/> Reciving of acaricides 5 <input type="checkbox"/> Better farming practice advices.
4.9	In case of tick infestation on your farm how you get rid on this problem? <i>Respondents can have more than one answer.</i>	1 <input type="checkbox"/> Acaricidal usage 2 <input type="checkbox"/> Monitor animal and restrict them to outside grazing 3 <input type="checkbox"/> Rotational grazing 4 <input type="checkbox"/> Use homemade remedies 5 <input type="checkbox"/> Manually remove the ticks.

4.10	In what frequency do you use acaricides?	1 <input type="checkbox"/> Every week 2 <input type="checkbox"/> After 15 days 3 <input type="checkbox"/> In a month 4 <input type="checkbox"/> Some times
4.11	What is the effective method for acaricidal use?	1 <input type="checkbox"/> Spraying with hands 2 <input type="checkbox"/> Dressing with hands 3 <input type="checkbox"/> Pour on 4 <input type="checkbox"/> Mixture of all mentioned practices
4.12	After acaricidal treatment how long does it takes for ticks to fall off?	1 <input type="checkbox"/> Within a few hours 2 <input type="checkbox"/> Within a day 3 <input type="checkbox"/> Within a few days 4 <input type="checkbox"/> Within a week.
4.13	When ticks fall from animal body after administering acaricides or manually removing or brushing the infested animals. What do you do with ticks?	1 <input type="checkbox"/> Let it stay on the ground 2 <input type="checkbox"/> Collect and throw it in the field 3 <input type="checkbox"/> Collect and burn 4 <input type="checkbox"/> Leave them in running water
4.14	When you visit the forest do you check your body after come back?	1 <input type="checkbox"/> Always 2 <input type="checkbox"/> Sometimes 3 <input type="checkbox"/> Never
4.15	After handling tick infested animals do you check your body?	1 <input type="checkbox"/> Never 2 <input type="checkbox"/> Always 3 <input type="checkbox"/> Sometimes
4.16	In case of un-availability of acaricides, which method do you used for tick control?	1 <input type="checkbox"/> Brush the animal 2 <input type="checkbox"/> Manually remove 3 <input type="checkbox"/> With help of kerosene and petroleum products 4 <input type="checkbox"/> Apply <i>Zanthoxylum</i> mixture solution 5 <input type="checkbox"/> With solution of salt 6 <input type="checkbox"/> Do nothing

4.17	Where else do you think acaricides can be utilized besides treating tick infestations?	1	<input type="checkbox"/>	To get rid on mites, lice and bugs etc
		2	<input type="checkbox"/>	As pesticides on vegetable fields
		3	<input type="checkbox"/>	No idea