Methodology to use for Value Chain Analysis field project

OIE Socioeconomic Study:

Transborder Animal Value Chain Analysis

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Dr Sarah Homan

Dr Malcolm Anderson

+61 417 830243

andovet1@bigpond.com

sarahfehoman@gmail.com

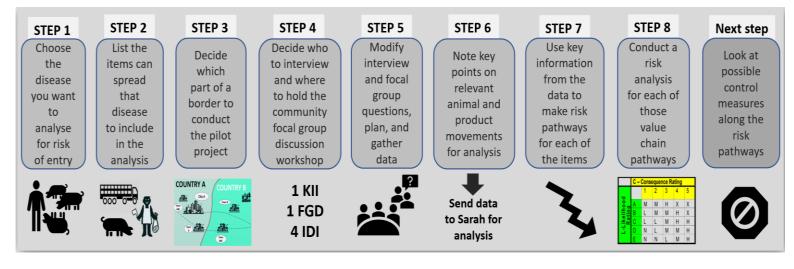# Transborder animal disease value chain 2021 field project methodology

Following is the tool to use for the field work component of the OIE transborder animal disease value chain analysis project. This project uses a sociological approach to gather data on the movement of animals, products or other items that could result in the transborder spread of animal diseases. This involves interviewing significant people and conducting community group discussions along the value chains to collect good data on these movements. The information gathered can be used to construct, analyse and manage risk pathways for the spread of diseases.

Note that for this project the scope is being purposely limited to prevent it being too large or complex so that main principles can be applied and learnt. *(This tool is just an example of what can be used and that there are many variations that could be applied to fit national organisational requirements. It can be expanded to cover entire borders. The tool can also be modified to conduct value chain analyses across internal borders or disease control classified area boundaries.)*

The Steps in the process will be to:
1. Decide on what value chain that we want to analyse (eg which disease or species we wish to look at).
2. Based on this, list the items that could spread disease (such as animals or products) for which we need to construct movement pathways.
3. Decide on which part of the border we will conduct the analysis of animal or product movements.
4. Decide who to include in interviews and focal groups, then plan and conduct them. Use 'snowball technique' to identify further people with useful knowledge to interview along the value chain.
5. Modify and use the questions to gather the information needed on animal and product movements.
6. Note the key points on animal and product movements from all the interviews and focal group discussion.
7. Analyse and validate the information gathered to construct the key risk pathways.
8. List/ draw the risk pathways for disease spread across the border. Conduct a risk analysis process on those risk pathways identified.

Diag. 1 Steps in the field work for the project

1. VALUE CHAIN TO ANALYSE

The first step is to decide the specific disease, animal species or livestock industry that we want to construct a value chain and identify risk pathways for. For this pilot project we are going to choose a single disease for analysis.

While it is possible to construct a value chain across a specific border for:

- All different animal and animal product movements,
- A specific industry (e.g. the chicken/ beef cattle/ pig/ goat/ dairy cattle/ etc. industry), or
- A specific disease : the animals and animal products that could introduce it (e.g. Foot and mouth disease/ bovine brucellosis/ rabies/ etc.),

for this project, a **single disease, animal species or industry will be chosen** to apply the methodology.

Question 1:

What specific disease are we interested in constructing a value chain for across a border?

Notes:

2. WHAT ANIMALS AND PRODUCT MOVEMENTS DO WE NEED TO INCLUDE IN THE ANALYSIS?

To construct the value chain, based on the answer from Question 1, we then need to define which animal species, animal products and other items we will be including in the movement analysis for the potential spread of the relevant disease.

As we are constructing a value chain for a specific disease we need to consider all the ways that the disease could plausibly be spread. If we were looking at a species or an industry then we would need to consider the multiple ways in general that it would be possible for diseases to be spread.

Examples of potential movements of importance:
What animal species?
What animal products?
What other ways can a disease be spread?

Individually circle, the key items, or add any extra items relevant to the spread of the disease being analysed in the blank cells, to include in the movement analysis.

Question 2:

What specific animal species, animal products or other factors do we need to include in this transborder movement analysis for this disease?

Domestic species	Wild animals	Animal Products	Other means of transfer
Cattle	Wild birds	Carcasses	Contaminated/ dirty trucks
Buffalo	Wild deer	Meat	Clothing/boots
Goats	Wild pigs	Milk	Transportation equipment such as cages
Sheep		Skin/hides	
Pigs		Feathers	.
Chickens		Semen	
Ducks		Embryos	
Dogs			

Notes:

3. TRANSBORDER AREA TO INCLUDE IN THE ANALYSIS OF MOVEMENTS

The next step is to define which transborder areas we want to construct a value chain and identify risk pathways for.

While the analysis of animals and animal product movements could be conducted for:

- All entries of those specified animals and products into the country from other countries (land, sea, air), or
- All entries across an entire land border into the country from another country, or
- Entries in from another country across a specific section of a land border,

for this project **choose a limited border region**. Ideally this will be a border area where the specified animal and product movements are suspected or known to be moving. It should have a small to medium sized town that would be suitable for a community focus group discussion workshop. Most importantly it should be a safe site for staff to conduct the data collection activities.

Transborder value chain analysis can be carried out by one country on a border or by both countries on either side of that border. Where two countries are considering a common transborder area if there is mutual agreement for cooperation, they can work together to combine data on the value chains. If this is done, information should be gathered by both countries on movements in and movements out. This will build a more complete picture of the value chains in both directions.

Question 3a:

Which border, or section of a border, do we want to include in this transborder movement analysis?

Question 3b:

Is this analysis on animal and animal product for cross border movements:

1. **Only inward into the participating country from another country, OR**
2. **In both directions between two participating countries?**

Notes:

4. FIELD WORK SOCIOLOGICAL METHODOLOGY.

The sociological approach involves conducting interviews and workshops with people along the animal and product value chains to gather as much information from the field of what is actually happening with movements that could spread diseases, as well as extra information as to why. It is a useful approach as animal disease spread is often related to human behaviour and this is what sociology investigates.

For the field component of this pilot project, we will be using the following process to construct the value chain *(noting that more Key Informant Interviews, more In Depth Interviews and more focal group discussion workshops may be necessary in larger transborder studies):*

a. Conducting one Key Informant Interview,
b. Organising and conducting a community Focus Group Discussion workshop, and
c. Conducting a series of four In Depth Interviews.

a. **The first part will be to identify and interview one Key Informant.**
    A single Key Informant will be selected by the project team for their expertise and role in the value-chain. This expert would be someone with a broad overview of the regional animal industries; such as central or regional Veterinary Service animal health or industry staff, veterinarians, community leaders, regulatory officers, wildlife experts or industry leaders. A Key Informant Interview will be conducted for one hour or less, will be audio-recorded with informant consent and detailed notes will be translated and transcribed into English for analysis.

b. **The second part will be to identify a suitable town or community for a Focus Group Discussion workshop.**
    The location of a suitable community to choose for a Focus Group Discussion workshop will be based on the part of the border that is being included in the analysis. Ideally the members of the discussion group will be based near the border where the animal and product movements relevant to the project are suspected, or known to be, moving. A combination of animal owners and those involved in local production chain would be ideal. The group to include in the workshop will depend on the animal species or industry being evaluated.
    This method will be conducted by two facilitators (one primary facilitator, one note taker who can swap roles) with local farmer/ community groups not only to explore themes at the starting point for animal and product movements in the value chain, but also around incoming animal and products. Groups should be no larger than eight people. Refreshments should be provided partly as incentives and because Focus Group Discussions are a considerable time commitment for participants.
    This project will include only one workshop at a key site, however more sites could be included for extra Focus Group Discussion workshops in other value chain analyses to cover a bigger section of the border or an entire border.
    Activities are a good way to facilitate discussion and are excellent for 'breaking the ice' between participants and facilitators and then understanding particular problems or movements of animals/products etc.

    Two focus group activities:
        Community mapping – whereby participants map the trajectory of animals/goods, identify the drivers for movement and linkage points, problematise issues along the way and include some context of volumes and seasonal (or other) variations. The group participates in physically drawing a separate map/chain for all relevant animal types on butcher's paper (or similar) and discussions are facilitated throughout the activity to understand people's perspectives.

        Free-listing – Guided by a key question, participants are asked to (freely) list certain topics and components of the processes and rank them in order of perceived priority/importance. Useful in understanding stakeholders' perspectives on importance of issues. In this instance, it would be used

to quantify which types of animals and products are heading across the international border, which are coming in from across the border and what linkage points exist to drive those movements (such as livestock raising areas, abattoirs, breeding centres, live markets, fattening areas, etc). It may potentially also include to gauge perceptions on disease problems related to transborder movement.

c. **Select people identified through the other processes for In Depth Interviews**
Information gathered from the Key Informant Interview, the community Focus Group Discussion workshop and from the early In Depth Interviews will identify people likely to be useful to provide further information on the value chains. This is known as 'snowballing' technique where candidates for further interviews are revealed through the process. It is likely that those identified may follow a progression along the value chain and the movement of animals or products.

For this limited pilot project four people will be chosen for the interviews, which can be conducted concurrently to the Focus Group Discussion workshop (i.e. in the same week of fieldwork) so that points raised in either method, can be raised and discussed (verified) in the other.

Each of these interviews will be conducted for one hour or less, audio-recorded with informant's permission and comprehensive notes translated and transcribed into English for analysis

Where two countries are working together to construct value chains each side of a common border, this process would be replicated on each side of each border.

Planning process
Planning for the field work, including the logistics of organising and coordinating the interviews and regional workshops, is a time consuming and complex process. Time and resources will need to be allocated for this.

Data collection teams
The teams will be determined by the project organisers in the participating countries but should be at least two individuals. Members of the team should be familiar with basic concepts of animal industry and animal diseases with at least one person who speaks the local language. Where appropriate the inclusion of a male and a female should be considered. To be determined by the participating organisation, this may assist such as with facilitation of discussions with stakeholders of either gender. It is ideal if the interviewers are not compliance officers with regulatory obligations in the livestock field, otherwise they could be compromised with information received. Their presence may also prevent the sharing of information from stakeholders. Where two countries are working together a team will be assembled on each side and conduct the field work on just their side of the border. Data will be provided by both to Dr Homan and Dr Anderson for analysis.

Each team will need a period preparing for conducting the activities, the one-hour Key informant interview (likely at a central location) and a four- to five-day (depending on locations chosen) regional site visit to conduct the Focus-Group Discussion and the subsequent In Depth interviews.

Activities
While study activities will be audio-recorded to ensure nothing is missed, investigation teams will be trained in comprehensive notetaking in order to take down the key elements of each KII, IDI and FGD. Specific data management templates will be used for recording answers to the three secondary guiding study questions. Teams will not be required to undertake a full transcription process to record information. They will be requested to record audio of the interviews for the purposes of back up only and used to fill in any missed detail in the interview notes by the investigators at the time of interview or soon after. The interview notes will need to be collected in, or translated to, English. Then they can be scanned or photographed and sent to Dr Homan for analysis. Dr Homan may have semi-regular phone calls with the study teams to get a sense of the content of each study activity, should further

explanation of the activities be needed. This will also serve to deepen the capacity of the investigators, as Dr Homan will be able to use these opportunities to co-analyse the material.

Ethical Considerations

The project will adhere to the basic ethical principles of research involving human subjects aligned with the [International Ethical Guidelines for Epidemiological Studies](). This is an important component of a sociological study.

Voluntary participation: All participation in this study is a voluntary act. Participants will receive no inducements to participate in this study. Respondents will also be informed that refusal to participate – at any point – will not have any negative consequences.

Individual, informed consent: All participants will be informed of the purpose and nature of this study at the beginning of each session through an information and consent form in their relevant language. The facilitator will review these forms with the participants, prior to beginning the session, these forms will remain with the facilitator. All participants will be given adequate time to discuss the nature of the study and will be invited to ask any questions. All participants will be asked then to provide verbal consent. All participants will provide verbal consent to participate in the study because of potential low levels of literacy. Verbal consent of all participants will be tracked in a monitoring sheet that only the investigators will have access to. All facilitators will consent to this work as part of their involvement in the project. Further, participants will be encouraged to contact the principal investigator at any time to discuss any concerns they might have – they will have a small card with contact details left with participants.

Confidentiality: While the nature of the study is not considered 'high-risk', informants may wish to share sensitive information without concern for repercussion and so it is vital that informants feel assured their participation and contributions will be kept confidential for the integrity of the study. Field workers and the investigating team will take every precaution necessary to ensure all data is kept confidential. Measures will be taken to minimize the likelihood of breaches of confidentiality. Fieldworkers will not keep any records of names or other personally identifiable information

- ☐ Under no circumstances will copies of the interview tools be shared with individuals outside of the investigating team and coordinating organization.
- ☐ All sessions will be conducted in private and quiet locations.
- ☐ During Focus Group Discussion sessions, facilitators and note-takers will have to pay attention to maintaining confidentiality.
- ☐ All interviews will be conducted in private rooms, or a quiet and private space outside, to ensure that the discussion remains confidential between the respondent and the facilitator/note-taker.
- ☐ All notes, consent forms and other investigation materials will be securely stored in locked storage spaces until they can be typed/scanned and saved on a password-protected computer.
- ☐ Any photographs will be taken after completion of the Focus Group Discussion session whilst no participants are present. Consent to have photographs taken of their work will be included in the consent process.
- ☐ Under no circumstances will personally identifiable information be used in study documentation, analysis procedures or study reports and dissemination documents
- ☐ All records will be carefully managed to prevent breaches in confidentiality of participants.

Support and training

Both Dr Homan and Dr Anderson will be available to ensure that all participants are sufficiently prepared and confident to conduct the field work. They can be contacted at any time for assistance and advice. There will be regular progress review meetings.

5. KEY QUESTIONS FOR THE FIELD WORK TO ANSWER

The key questions to be answered through the interviews and the group discussions will depend on the disease chosen for the value chain analysis. *(Or the animal species or industry if selected in other studies.)*

Following is an initial **draft of questions for this project**, with a template for recording answers, through conducting the Key Informant Interviews, Focus Group Discussions and In Depth Interviews.

The questions will be finalised in consultation with country participants. These are designed to inform the project Key and Secondary guiding study questions (as below).

The information collection templates for participants to use as checklists and for recording notes. These will be tailored and grouped to make them appropriate for each of the activities (i.e. KIIs, FDGs and IDIs).

Key study question for the value chain analysis:

What are the main human-assisted movements of significant quantities of the specified animals and their products across the national borders, either in one direction or in both directions, and the related linkage points?

Secondary guiding study questions:

1. What (legal and illegal) significant movements of the listed animals and products occur between the designated sites on either side of those borders?
2. How frequently are those movements occurring and what main variables (such as seasonal variation) drive them?
3. Taking into account know methods of disease transmission for specific diseases, what risk of disease spread do each of these movements pose and what measures can be implemented to prevent or minimise the effect of those animal diseases?

Draft of questions to gather information

* Remember to use the interview techniques supplied by Dr Homan including the preliminary introductory questions.

A. **INCOMING ANIMALS & PRODUCTS**

1. Describe the local animal systems in the region. What types of commercial animal production occur (animals are farmed) in this region?

	Yes or No	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

2. Are any of the types of animals or their products moved into this local region in significant quantities?

	Yes or No	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products A.		
Other		

3. What are the main reasons that those animals or their products move into this area?

	Main reason for movement in	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

4. Are there specific times that these animals or products move?

	Yes or No	Season, event or driver for movement in
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

5. Are there local livestock linkage points/ infrastructures such as live animal markets, fattening sites, major meat wet markets or abattoirs that attract commercial or significant levels of livestock into this area? (Can include multiple.)

	Linkage points	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

6. Which, if any, animals or animal products do you know that come into this region across the border from [name of neighbouring country]?

	Yes or No	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

7. What amounts of the animals or animal products get sent across the border to [name of neighbouring country]?

	Approximate numbers or amount per month	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		

Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

8. Are there specific times that these come in across the border from [name of neighbouring country]?

	Yes or No	Season, event or driver for movement in
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

9. How do these animals or products mostly get brought in across the border from [name of neighbouring country]? (Can include more than one method.)

	Methods of movement	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

10. Are there regulations about bringing in animals or their products across the border to this region from [name of neighbouring country]? In summary, what are these rules?

	Yes or No	Brief summary of rules
Cattle for beef		
Dairy cattle		

Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

11. Are there any problems caused by the movement of these animals or their products across the border into this area from [name of neighbouring country]? In summary, what are these problems?

	Yes or No	Brief summary of problems
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

12. Are there any solutions to those problems that you would like to see implemented?

	Yes or No	Brief summary of solutions to problems
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

13. Are there reasons why some people do not follow the regulations for movement across the border from [name of neighbouring country] to this region?

	Yes or No	Brief summary of reasons
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

B. **OUTGOING ANIMALS AND PRODUCTS**

14. Are any of the types of animals farmed here or their products moved from this local region in significant quantities?

	Yes or No	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

15. What are the main reasons that animals farmed here (such as trade, local consumption, breeding etc) and the main reasons their products move out of the area?

	Reason	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		

Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

16. Are there specific times that these animals or products move?

	Yes or No	Season, event or driver for movement
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

17. Are there local livestock linkage points/ infrastructures such as live animal markets, fattening sites, major meat wet markets or abattoirs? (Can include multiple.)

	Linkage points	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

Following questions to be included only if this project is being conducted together with the neighbouring country to construct joint value chains.

18. Which, if any, of the animals farmed here or their products do you know that are sent across the border to [name of neighbouring country]?

	Yes or No	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

19. Approximately, what amounts of the animals farmed here or their products get sent across the border to [name of neighbouring country]?

	Approximate numbers or amount per month	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

20. Are there specific times that these get sent across the border to [name of neighbouring country]?

	Yes or No	Season, event or driver for movement
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		

Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

21. How are these animals or products mostly sent across the border to [name of neighbouring country]? (Can include more than one method.)

	Method of movement	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

22. Are these steps (linkage points) along the way for animals or products going across the border to [name of neighbouring country] such as live markets, fattening sites or abattoirs? (Can include more than one step.)

	Steps or linkage points	Comment
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

23. Are there regulations about sending animals or their products across the border to [name of neighbouring country]? In summary, what are these rules?

	Yes or No	Brief summary of rules
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

24. Are there any problems caused by the movement of these animals or their products across the border to [name of neighbouring country]? In summary, what are these problems?

	Yes or No	Brief summary of problems
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		
Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

Follow up questions on specific problems will be formulated with participating country representatives.

25. Are there reasons some people do not follow the border regulations?

	Yes or No	Brief summary of reasons
Cattle for beef		
Dairy cattle		
Goats		
Buffalo		
Sheep		
Pigs		

Chickens – meat		
Chickens - eggs		
Ducks		
Wildlife meat or products		
Other		

6. KEY POINTS FROM THE FIELD WORK

This can be completed before or after analysis of the raw data by Dr Homan.

List any key animal, animal product or relevant item movement information identified through 'Key Informant Interviews'

List any key animal, animal product or relevant item movement information identified through 'Focus Group Discussions'

List any key animal, animal product or relevant item movement information identified through 'In Depth Interviews'.

7. ANALYSIS OF THE DATA FOLLOWING THE FIELD WORK

The completed data management templates used for recording answers, the interview notes collected by the investigators at the time of interview and any key points on movements as above will be scanned or photographed and sent to Dr Homan for analysis. These will all need to be collected in, or translated into, English. Dr Homan will provide support and scheduled meetings with the study teams. Dr Homan will be able to use these opportunities to co-analyse the material.

Once participants' notes and data from the field work have been analysed Dr Anderson and Dr Homan will complete a validation workshop with the study teams and key stakeholders (for example key veterinary services project contact, key personnel or key informants) as per the workplan for the purposes of validating the data. This meeting with experts/people involved in the study would be to make sure the results make sense or to sort out any issues with the results.

Diagramatic value chains will then be constructed using the data.

8. RISK PATHWAYS & RISK ANALYSIS

Once the value chains are constructed the next stage of the project will be for Dr Anderson and Dr Homan to work with country participants to construct risk pathways for transborder disease introduction, followed by risk analysis of these pathways.

Risk pathways

Key risk pathways can be constructed for diseases in general (for a species or an industry) or for specific diseases. Each separate risk will be that "a species-specific or a specific disease is introduced through one of the value chain pathways".

What key risk pathways have been identified that could spread disease?

List the Risk Pathways identified:

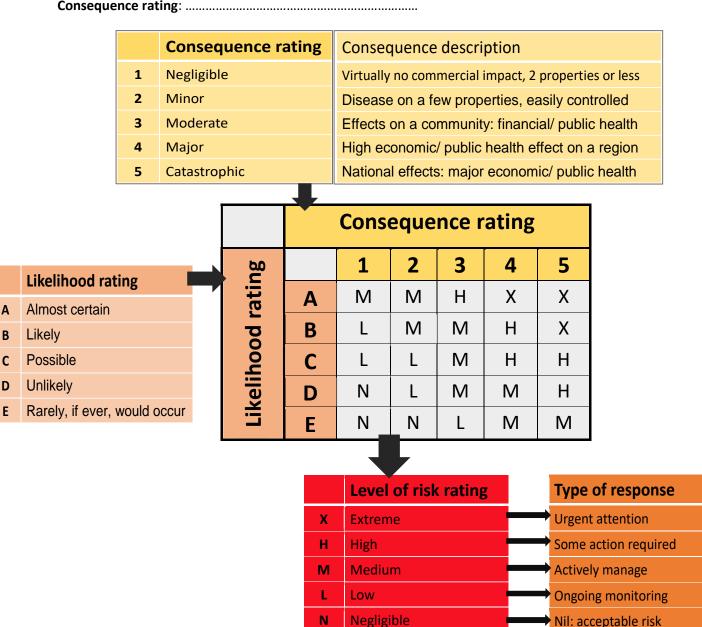|	
Pathway 1	
Pathway 2	
Pathway 3	
Pathway 4	
Pathway 5	
Pathway 6	
Pathway 7	
Pathway 8	
Pathway 9	
Pathway 10	
Pathway 11	
Pathway 12	
Pathway 13	
Pathway 14	
e t c	

Risk analysis

A qualitative risk analysis will be conducted for each of the individual risks described (based on each of the risk pathways determined) using the process outlined below. Once completed the risks will be rated and appropriate risk mitigation steps discussed.

For each of the risk pathways:
1. Assess the **consequence** if the disease was introduced.
2. Determine the **likelihood** of the disease being introduced.
3. Circle the consequence rating and the likelihood rating to calculate the risk rating.
4. Match the level of risk rating to determine and circle the type of response needed.

Pathway: **Likelihood rating**: …………………………………………………………………

   Consequence rating: …………………………………………………………………

	Consequence rating	Consequence description
1	Negligible	Virtually no commercial impact, 2 properties or less
2	Minor	Disease on a few properties, easily controlled
3	Moderate	Effects on a community: financial/ public health
4	Major	High economic/ public health effect on a region
5	Catastrophic	National effects: major economic/ public health

Likelihood rating	
A	Almost certain
B	Likely
C	Possible
D	Unlikely
E	Rarely, if ever, would occur

		Consequence rating				
		1	2	3	4	5
Likelihood rating	A	M	M	H	X	X
	B	L	M	M	H	X
	C	L	L	M	H	H
	D	N	L	M	M	H
	E	N	N	L	M	M

	Level of risk rating		Type of response
X	Extreme	→	Urgent attention
H	High	→	Some action required
M	Medium	→	Actively manage
L	Low	→	Ongoing monitoring
N	Negligible	→	Nil: acceptable risk

   OVERALL RISK RATING: ……………………………………………………………………

   TYPE OF RESPONSE NEEDED: …………………………………………………………….

For each risk pathway what actions can we take to reduce the likelihood (or impact) of disease introduction?

List the pathways by priority risk ratings (X-extreme to N-negligible). Describe possible risk treatment actions relating to the pathways.

	Risk rating (X to N)	Risk treatment actions
Pathway #		
Pathway #		
Pathway #		
Pathway #		
Pathway #		
Pathway #		
Pathway #		
Pathway #		
Pathway #		
Pathway #		