Outbreak Scenario (wk 4 module)

NEW ZEALAND
FOREIGN AFFAIRS & TRADE

Welcome to week 4

"In previous weeks, you have been sampling for confirmation of suspected infectious diseases, applied biosecurity measures to prevent onwards spread of infection and last week, you conducted the epidemiological investigation to get a better understanding of the impact and the risk factors for disease."

Communication on local response and preventive measures

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Expected outcome

- [ ] To strengthen the communication skills of district animal health staffs to enhance effective control measures during the outbreak.

- [ ] To strengthen the role of district animal health staffs in providing initial response to animal disease outbreak.

- [ ] To utilize the outbreak investigation information to improve future prevention measures.

Outline for this week

Communication skill

- Different communication strategies regarding local response and preventive measures at the time of a disease outbreak.

- Engaging community to enhance the implementation of effective control measures and adopt preventive measures for susceptible livestock not (yet) affected by the disease outbreak.
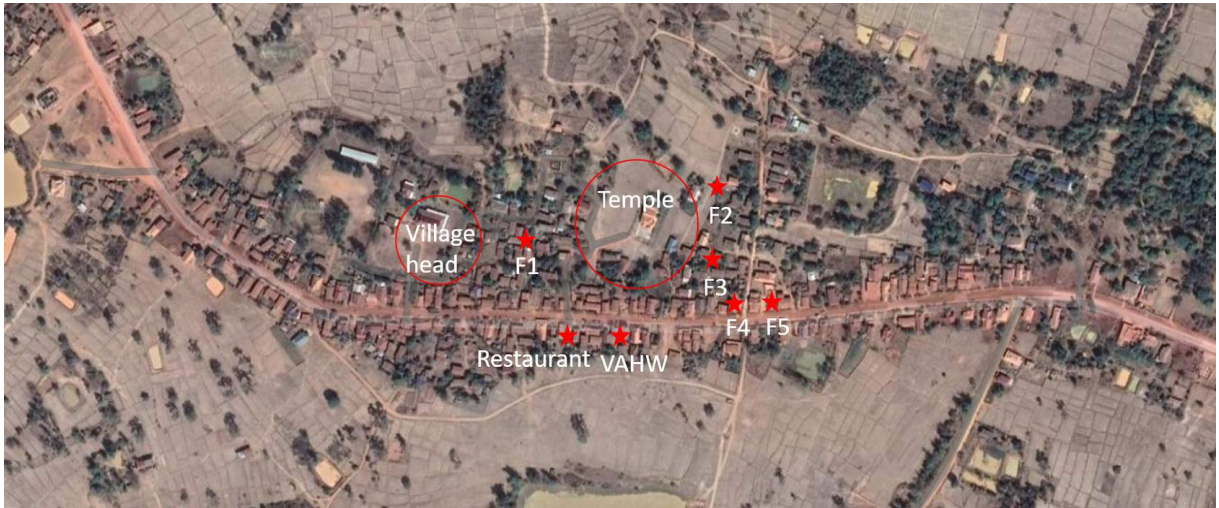
Initial response to animal disease outbreak

Apply and direct appropriate control measures in relation to the stage of the outbreak;.
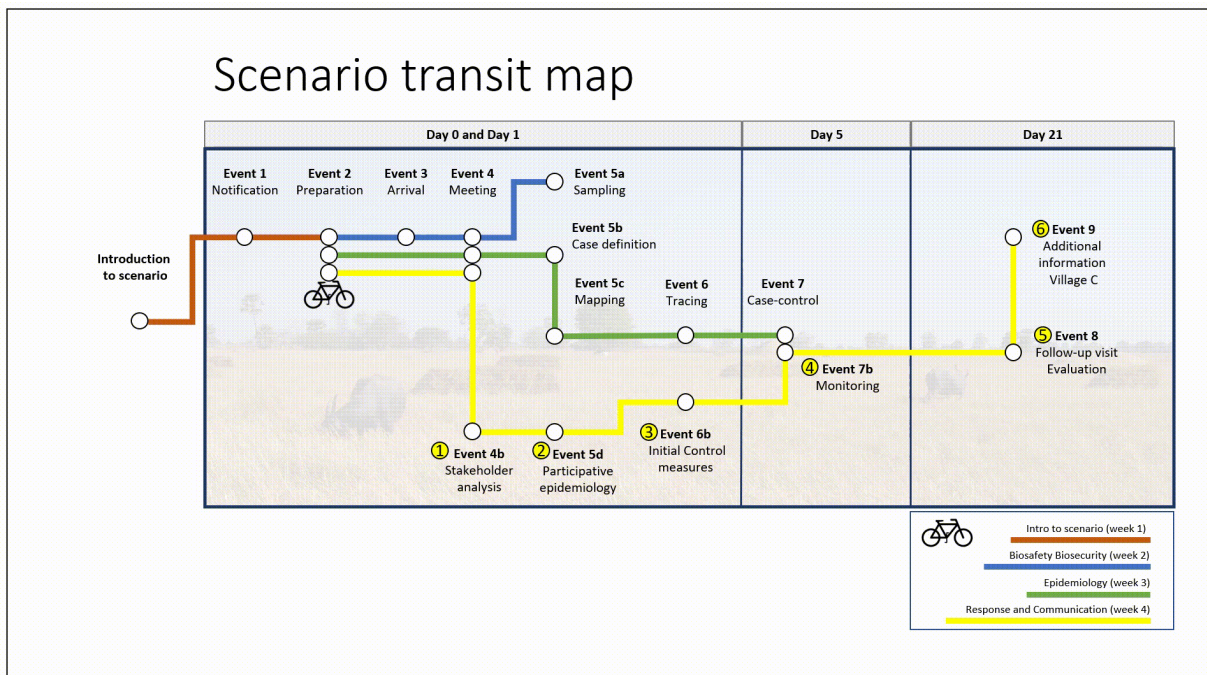
Utilize the investigation information to improve prevention measures —

- Determine gaps of the disease control and prevention system

- Communicate with local stakeholder to prevent future outbreaks

CONTINUE

Event 4b: Stakeholder engagement analysis

Scenario transit map

> **Just to catch up with our scenario transit map, You are on the <u>Yellow week 4 line with 6 associated tasks</u>.**
>
> **Imagine yourself back at Event 4 of Day 1 (5th December 2021) when you have a first village meeting.**

"Communication is crucial to the success of outbreak investigation and response management

To engage and communicate effectively to the community and stakeholder with those involved in the village events, we should learn to use the following techniques as complementary

1. **Stakeholder Engagement Analysis**

2. **Participatory Epidemiology**

3. **Communication Management Plan**

At this first stage, we will introduce you to the Stakeholder engagement analysis.

Click ▶ to play the video"

Stakeholder engagement analysis

CONTINUE

 "Let's complete the first lesson on the Stakeholder engagement analysis.

Click **here** to enter the lesson"

CONTINUE

Quiz

Which of the followings in considered as a stakeholder in our Event 4 (meeting the Village A representative)?

○ Animal owner

○ Trader

○ Village headman

○ All are stakeholders

SUBMIT

What are the two major elements in stakeholder analysis?

○ Power and money

○ Interest and power

○   Interest and money

○   Power and rank

SUBMIT

CONTINUE

Task 1: Instructions

Task 1: PLEASE COMPLETE THE TABLE. Look at the scenario transit map again, you can see that there are many events where we have to communicate with people.

Please list all stakeholders regarding our scenario. Please put all stakeholders identified (mainly are different 4 groups) and analyze their roles, priority to communicate (regarding the stakeholder map) and how to communicate with them.

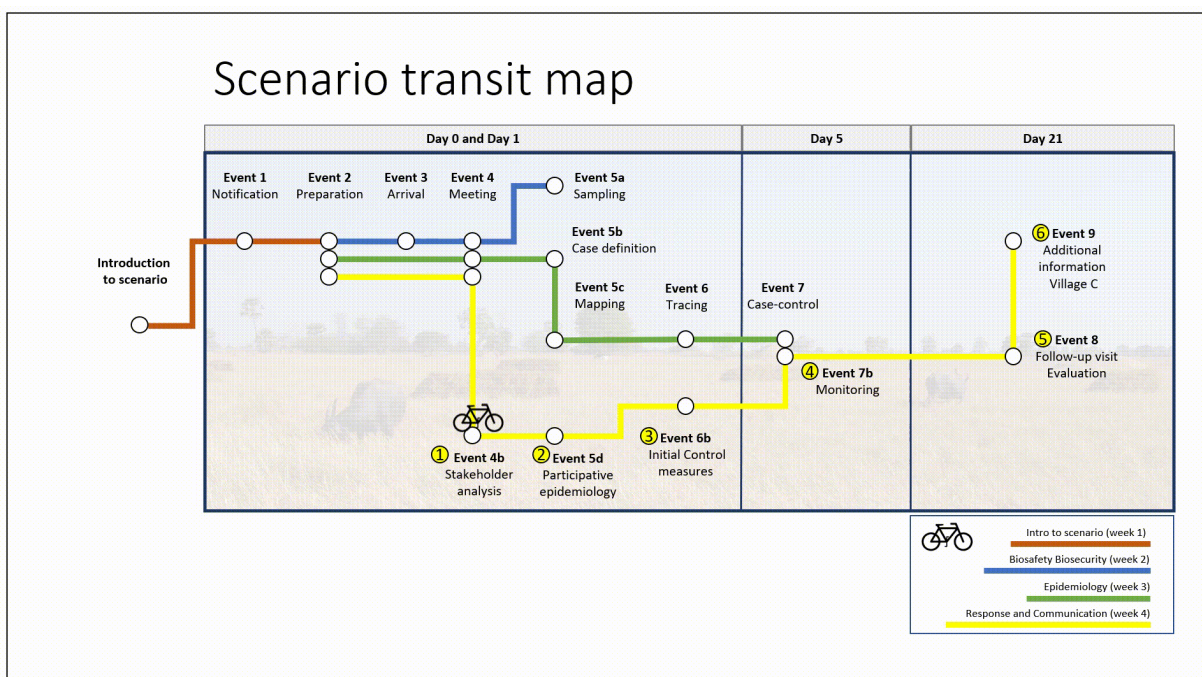See the table on the right as an example. you can download the template here.

Once complete, post on the forum here.

Stakeholder group	Roles that may help or undermine local FMD control measures	Priority to communicate*	How to communicate

Example of stakeholder analysis table

CONTINUE

Event 5d: Participatory epidemiology

Scenario transit map

"**Participatory epidemiology (PE) is the systematic use of participatory methods to gather relevant information for describing the disease outbreak. It was developed based on the principles and methods of Participatory Rural Appraisal (PRA). Basically, we are working with communities to study specific disease problems and identify best-bet solutions.**

We can make use of various PE techniques to assist us in the outbreak investigation and response management"

CONTINUE

"**Let's complete lesson on Participatory Epidemiology.**

Click here to enter the lesson."

ⓘ Optional reading: Page 29-36 of the **OIE SEACFMD field outbreak investigation manual**

CONTINUE

Quiz

To investigate "History of livestock diseases", which PE method should be selected?

○ Informal interview

○ Time line

○ Seasonal calendar

○ All of the above

SUBMIT

What should be more important when interviewing farmers or stakeholders at event 5?

○ Biosecurity

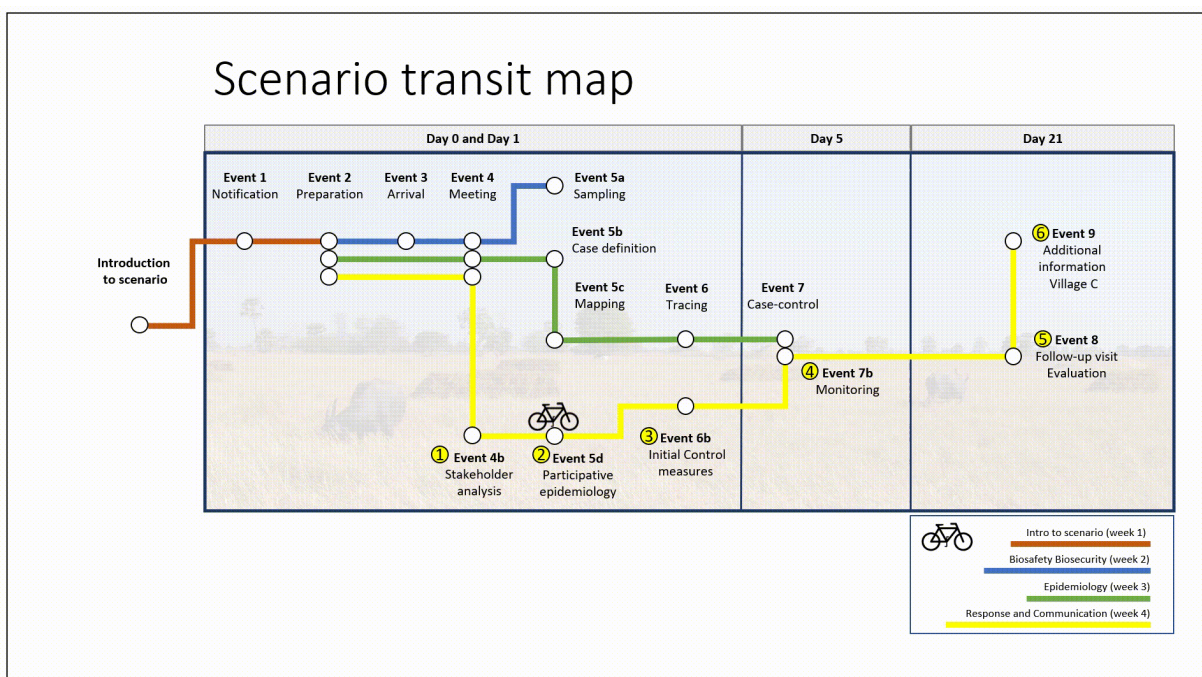○ PE concept such as the relationship and trust between interviewer and local people

SUBMIT

"**Task 2:** Create your idea how to apply PE to communicate with your stakeholders in the event 5d.

1. **What PE method(s) you prefer and why?**

2. **Who should be in that meeting?**

Post your answer on the forum here."

CONTINUE

Event 6b: Initial control measures

"You now know more about addressing the relevant stakeholders and participatory epidemiology techniques.

Next, we will discuss what to communicate, or how to respond to an outbreak even when confirmation is not yet available"

"Imagine, you are now in the role of the district vet who is in charge. You sampled for confirmation, used biosecurity practices and investigated the outbreak. However, the villagers do expect more from you.

So, even if the suspected outbreak is not yet confirmed, you have to come up with measures to mitigate the risk that more new cases will affect livestock and as a consequence the livelihoods!"

Disease control measures are theoretically classified into 3 groups:

1   Limit source of pathogen (e.g. isolation and quarantine of sick animal, animal treatment, slaughter/disposal of sick animal and infective premises).

2   Interrupt transmission (e.g. disinfection, bio-safety and security measures, movement restrictions within and between epi-units).

3   Modify host response (e.g. immunization for infections for which a vaccine is available).

Answer the question

Of each of the following control measures you suggest at the first day of your outbreak investigation, match it with one (or more) of the following objectives:

Drag the box and drop it to a suitable answer.

Modify host response

Vaccinate the non-affected animals (households). This will take some time

Interrupt transmission

Do not allow trade of animals

from this village to other villages or market

Limit Source of virus

Tell farmers of affected herds to isolate the animals showing symptoms;

supportive treatment while waiting for laboratory confirmation,

applying bio-safety during animal treatment activities

veterinary drug can be used under appropriate supervision

"**Task 3:** **Can you think of additional control measures? If yes, to which objective do these relate?**

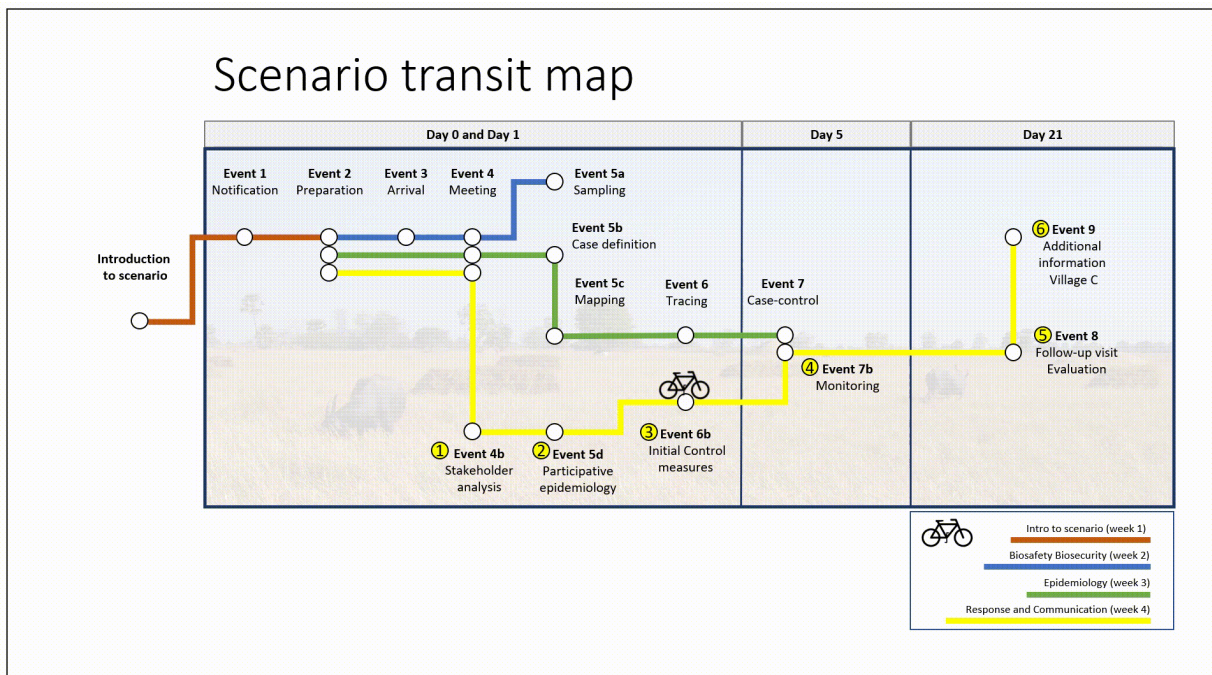**Post your answer to the forum. Click <u>here</u>.**"

CONTINUE

Why is informing the community about the disease important?

☐ Informing livestock owners, service providers and others dealing with livestock about the nature of the infection, its transmission routes and its risk factors (raising awareness) is a tactic that can support each of the objectives above.

☐ When the livestock community has a better understanding about the disease, its risks of transmission and the impact it may have on health and production, it is more likely they will comply with the control measures you order/impose.

☐ However, ALWAYS monitor and evaluate the proposed control measures. There is no guarantee that your control measures will immediately stop the outbreak. We will discuss this in more detail, later this week.
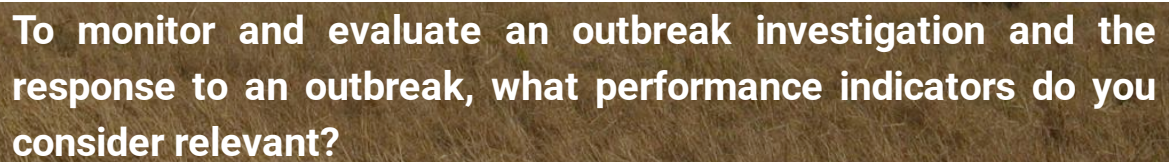
CONTINUE

Event 7b: Monitoring

Scenario transit map

> " Imagine that you are back to village A on the second time on Day 5 (9th December 2021) to conduct a case-control study.
>
> At this stage, you have an opportunity to monitor for your initial control measures.

To monitor and evaluate an outbreak investigation and the response to an outbreak, what performance indicators do you consider relevant?

CONTINUE

Of the following options, which information can monitor the effectiveness of the control measures imposed?

Click ↺ to flip the card.

a) Number of new households with suspect cases of FMD

Correct

b) Sales of antibiotics at local pharmacies

Incorrect

c) Age of oldest lesion in cases of a newly reported household at time of investigation the outbreak

Correct

d) Number of days between start of control measures and last household reporting clinical case(s)

Correct

e) Presence (or absence) of new outbreaks in other epi-unit that can be related to original outbreak

Correct

g) Number of Facebook posts from this village on animal disease cases

Incorrect

Monitoring the effectiveness of control measures imposed requires to follow-up the situation in the epi-unit regularly.

☐ It is recommended to visit epi-unit every 2 weeks up until no new households with cases are reported.

☐ In between visits, it is recommended to contact the local VAHW regularly to get an update on the situation.

☐ It is not necessary to apply all possible performance indicators to monitor outbreak investigation performance.

☐ Two or three of these indicators are sufficient as a means to understand if outbreak investigation and control of an outbreak are improving over time.

"**Options b (Sales of antibiotics at local pharmacies) and g (Number of Facebook posts from this village on animal disease cases) may be used as part of syndrome surveillance to early detect new outbreaks in neighbouring villages.**

For option b, it will require contacting the local pharmacy in neighbouring villages to keep records of sales of antibiotics (and other veterinary drugs)

For option g, it will require sophisticated software to collect and analyse this data

An easier way may be to simply contact local CAHWs to ask them about suspect cases and/or number of visits to see sick livestock with symptoms of salivation, lameness, mastitis, drooling."

CONTINUE

In the next 10 days you are busy to contact your superiors to send vaccines. Which of the following approaches is your preferred option to remain well informed about the progress of the outbreak?

○ I ask the VAHW to provide me a report of new cases after one week

○ I give a telephone call to the VAHW every other day

○ I ask the village head for a written report in one week's time

○ I will call the owner of the restaurant in a few days' time and ask him about further rumours of cases

SUBMIT

> "So far, we discussed a number of ways to monitor the outbreak investigation and the response to the outbreak. These were focused on clinical cases or households with new cases.
>
> Alternatively, an NSP-Ab sero-survey may be used in an outbreak area."

In your view what is/are the objective(s) for **an NSP-Ab sero-survey** ?

○ A NSP-Ab sero-survey can demonstrate the different serotypes of circulating FMD virus in the outbreak area

○ the NSP-Ab sero-survey is helpful to understand if animal were well protected after emergency vaccination.
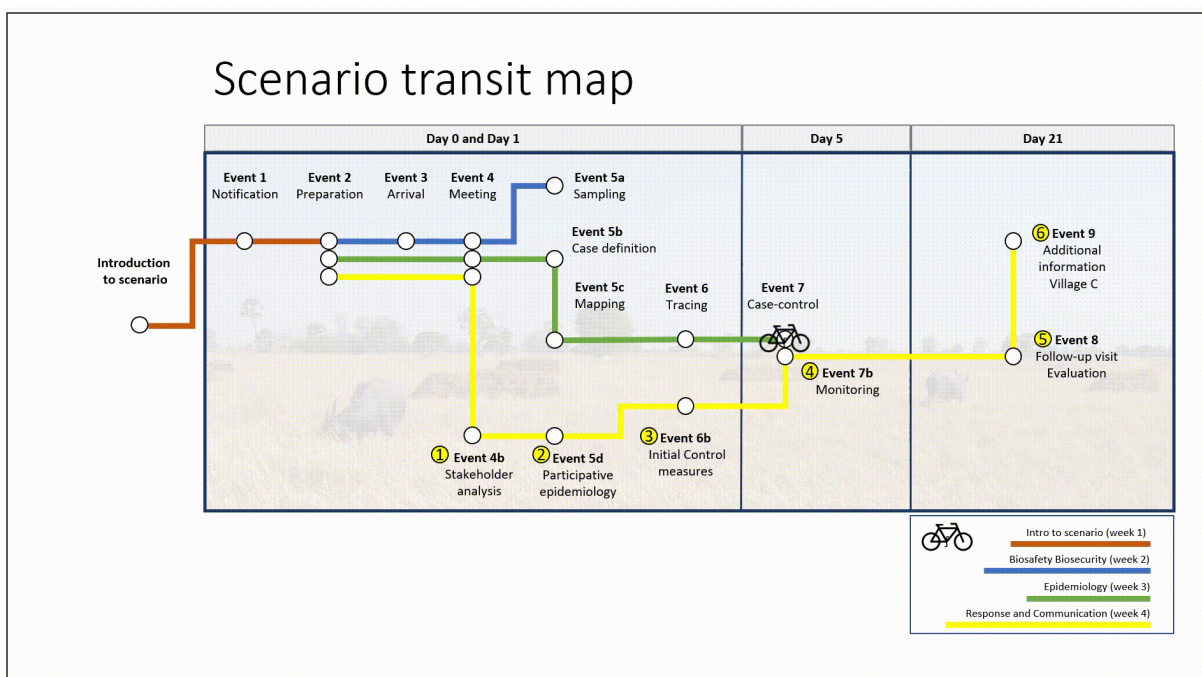
○ A NSP-Ab sero-survey can determine the proportion of animals infected with FMD virus but not showing clinical signs of FMD.

SUBMIT

CONTINUE

Event 8: Follow-up investigation

Scenario transit map

> We are now on Day 21 (25th December 2021) of the investigation.
>
> FMD serotype O has been confirmed by the national laboratory.
>
> The supply of vaccines has taken some time. You had these delivered to the village and the VAHW has applied these in
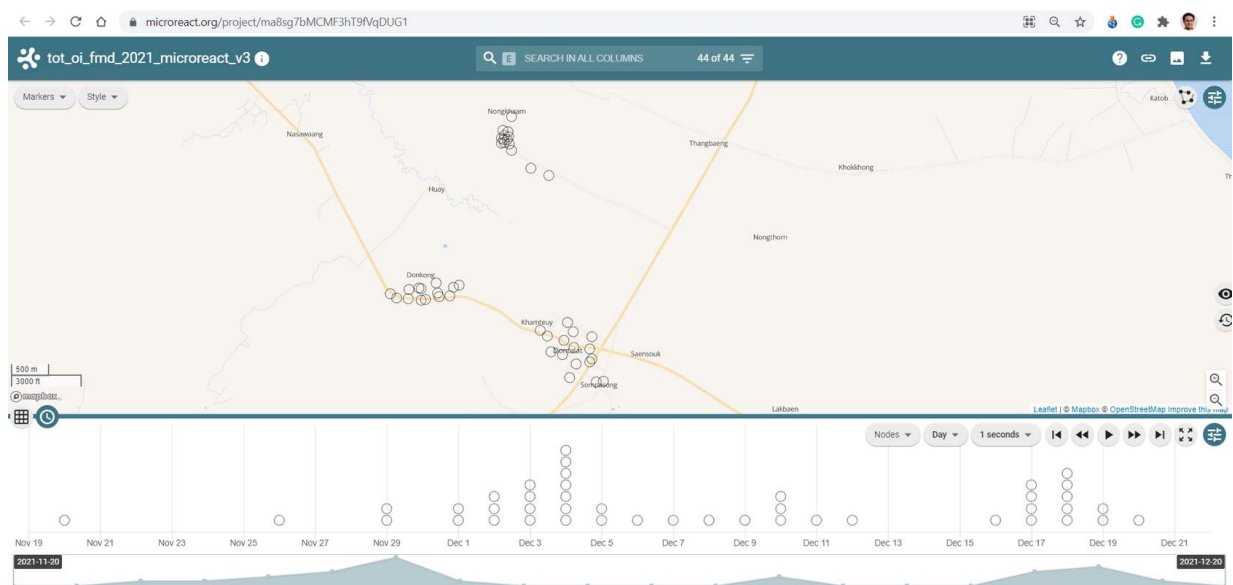
livestock of village A

Through your contacts with the local VAHW, you were informed of new suspect cases.

CONTINUE

The VAHW is able to provide you the coordinates of new suspect cases with date of onset.

So with your knowledge from week 3 module, you have used the Microreact tool to describe the spatio-temporal pattern. Download the dataset here.

Click **here** to go to the Microreact site and observe the event from starting of the outbreak until today.

What do you conclude from these cases? (tick all that apply)

☐ No additional cases in village B.

☐ A few more cases in Village A. The control measures imposed were not complied with.

☐ A huge new outbreak in another village C. This is not related to the outbreak in Village A as they started to occur long enough after the last cases in Village A.

☐ Additional suspect cases in another village C. it seems quite likely that these are related with the outbreak in Village A through case 27.

SUBMIT

Village A summary

"From the data, you can observe that cases in Village A:

- occurred shortly after establishing control measures on Day 1.

- At the time of your first visit, it seems plausible that these cases were in their incubation period.

- Overall, you may conclude that the control measures were well applied in the village A.
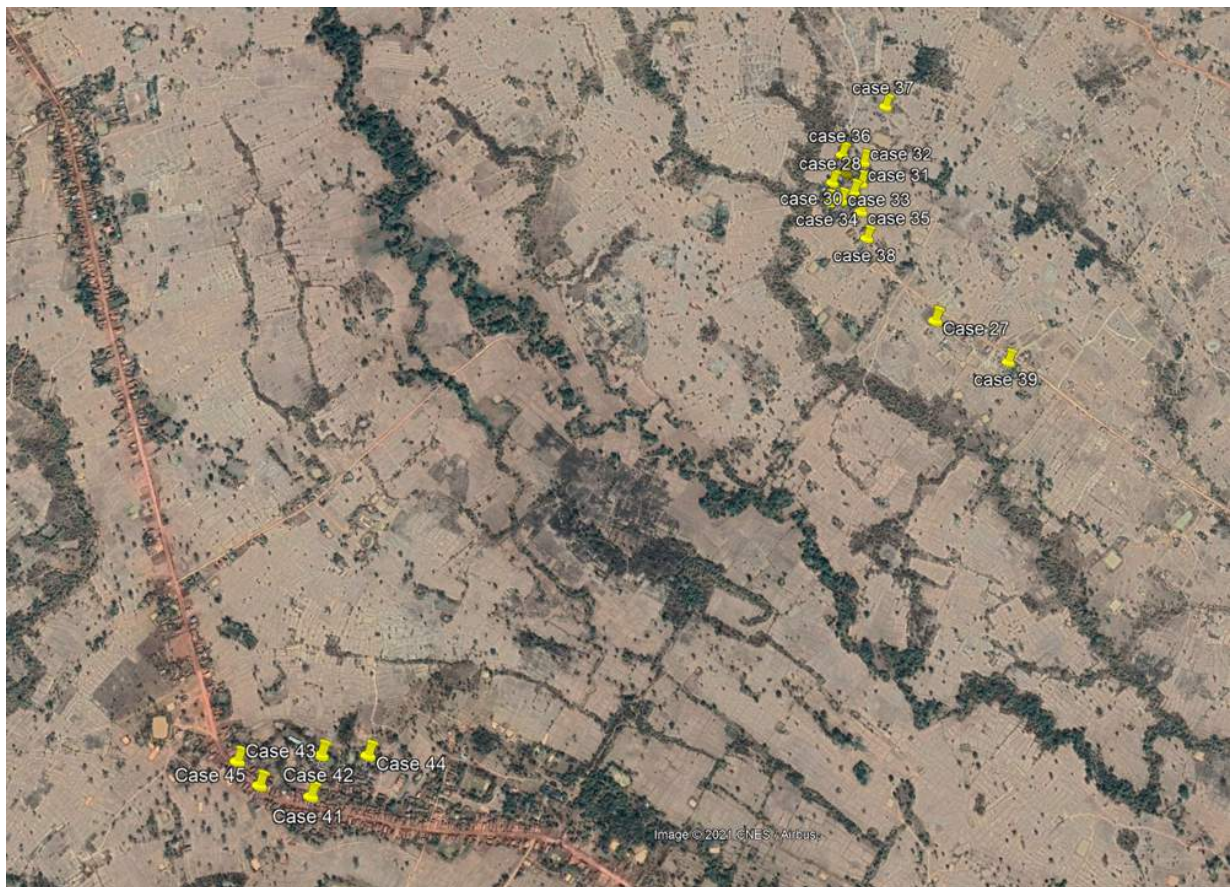
CONTINUE

Village C summary

"From the data, you can observe that cases in Village C:

- New cases most likely initiated by case 27, an outbreak on 9th December 2021 in a farm in between Village A and C.

- This indicates that there was a breach in control measures to stop onwards spread. Apparently,

infected livestock or livestock products or contaminated people or tools transmitted the infection from Village A to Village C via case 27.

CONTINUE

Control measures for Village C

According to the data (download here, if you haven't),

- **You can see that the outbreak is still ongoing with clinical cases observed on 18, 19 and 20 December 2021.**

- **Now let us use the results of the outbreak investigation in Village A & B and see if the results of the case-control study (Module 3) can help us to better control the outbreak in village C**

What were the two statistically significant risk-factors from the

case-control study in village A & B? Tick all that apply.

(Hint: check module 3 forum for Task 4. Click here)

☐ People (family members, schoolchildren) travelling between villages

☐ Service providers (CAHWs, traders, Inseminators) working in different villages

☐ Sale or introduction of livestock into the village e 3

☐ Livestock co-grazing and/or drinking from mutual sources

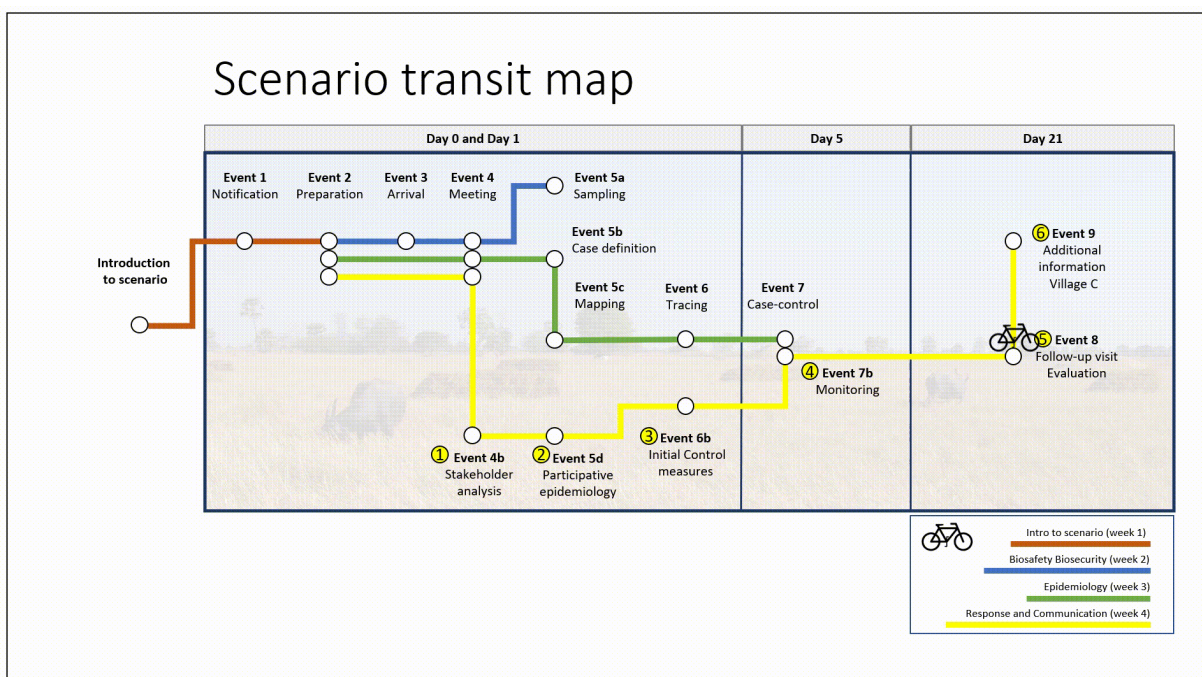☐ People not allowing their livestock being vaccinated against any disease

SUBMIT

CONTINUE

"**Task 5:** **Based on all the current information you have,**

1. **what will you do to implement control measures in Village C?**

2. **Anything similar or different to initial control measure implemented in Village A?**

Post your answer on the forum. Click <u>here</u>."

CONTINUE

Event 9: Additional information

Scenario transit map

Additional information on cases in Village C

"Some sick cattle were sold to trader living near Village C on the day that you were in the village first day (D1)

This trader is also working as a VAHW in Village C. He sometimes consults with the VAHW in Village A.

Particular clinical findings in Village C is that on pig farms the clinical signs of dead pigs were sudden death, skin haemorrhage and diarrhoea."

CONTINUE

Given the symptoms described (sudden death, skin haemorrhage and diarrhoea), what differential diagnosis do you have in mind?

☐ FMD

☐ Classical Swine Fever

☐ African Swine Fever

☐ PRRS

☐ Erysipelas

SUBMIT

CONTINUE

"**In this event 9, you may think about how would you continue to communicate with different stakeholders in order to control FMD outbreak (and probable ASF) and keep the situation under the control measures possible through cooperation.**"

Task 6: Instructions

CONTINUE

Task 6: PLEASE COMPLETE THE TABLE.

See table on the right as an example. you can download the template here.

Once complete, post on the forum here.

Methods of engagement	Objective of engagement	Frequency	Audience (stakeholder group)	Person in charge	Expected outcome
Face-to-face meeting	1.Introduction of FMD outbreak event in the village 2.Strengthen the case-finding	1 time	All cattle owners	Veterinary Officers	1.All cattle owners know the outbreak situation 2. More cases were detected and reported
Telephone call	…	…	Cattle owners who could not attend the face-to-face meeting	…	…
Presentation	…	…	…	…	…
Social media	…	…	…	…	…
…	…	…	…	…	…

ⓘ **See the references about African swine fever disease (ASF)**

OIE Technical disease card for ASF

FAO Animal Production and Health Manual, African Swine Fever: detection and diagnosis

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CONTINUE

Summary

☐ Information from the outbreak investigation needs to be utilized to identify appropriate response in relation to the stage of disease outbreak.

☐ Identification of key stakeholders and engaging them with appropriate communication strategies can enhance the outbreak investigation and the implementation of disease control measures.

☐ Participatory epidemiology is a useful tool to gather disease outbreak information from the community and identify suitable disease control measures.

☐ Good and effective communication skill is required for outbreak investigation and responses.

References

1. OIE SEACFMD field outbreak investigation manual

2. OIE Technical disease card for ASF

3. FAO Animal Production and Health Manual, African Swine Fever: detection and diagnosis

Congratulations - end of week 4 scenario reached