EVA Tool Practical DAY 3

**Case study description**

Classical swine fever is endemic in Vietnam with sporadic cases in Hung Yen Province.

CSF is one of the priority disease (with FMD and PRRS) for surveillance and control by the National veterinary services. The objective of CSF surveillance is to detect cases to control the disease. CSF vaccination in swine farms is compulsory.

Passive surveillance of CSF is the main surveillance component but it is believed that the number of outbreak detected is very low. Active surveillance of CSF virus is in place in swine farms but the performance of this surveillance is not known. The active protocol is sampling of 30 pigs in 100 farms randomly selected in the Province every 6 months (recommendations from the National Surveillance and Control plan).

When a positive case is confirmed by laboratory analysis, all the pigs in infected farms are culled and vaccination is enhanced in the surrounding area.

The veterinary services would like to know the performance of its surveillance activities in order to improve the control of the disease and trying to limit the cost of the active surveillance. The veterinary services would like to compare the performances and costs of the current surveillance (passive and active) with a new design of active surveillance based on risk (age of the pigs in the herd). The new design is to sample young pigs (between 1-3 months) only in 100 randomly selected farms.

You have been appointed by the veterinary services to evaluate the performance of the current system components and new design and to provide recommendations on the interest and added value of changing the active surveillance design.

1. ***Exercise part 1 / framing the evaluation plan***

Please address the following tasks using the EVA tool:

* 1. **Describe this surveillance system and the components to be included in the evaluation**
  2. **Define the evaluation question to address the needs of the veterinary services; please justify your choice**

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* 1. **Identify the relevant attributes to measure to address the evaluation question (complete Table 1).** Please justify your choice**.**
  2. **Identify the assessment method and economic analysis technique required to measure the evaluation attributes selected in task 2 (Complete Table 1).** Please justify your choice. (Note : Data from the active and passive surveillance are available. Data from the new design are not available and should be simulated).

Table 1. List of attributes and assessment methods

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| **Attribute** | **Assessment method** | **Justification** |
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1. ***Exercise Part 2/ Address the evaluation question***

You have assessed the different evaluation attributes, results are presented in Table 2.

Table 2. Results of the evaluation attribute assessment

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| --- | --- | --- | --- | --- |
| **Surveillance component** | **Sensitivity (%)** | **Timeliness**  **(days)** | **Acceptability** | **Cost of surveillance (USD/animal)** |
| **Passive** | 30% | >15 days | Medium | 5 |
| **Active** | 80% | 3 days | Medium | 15 |
| **Active Risk-based** | 85% | 3 days | Low | 20 |

Please answer the following questions:

* 1. **Which surveillance component is the most effective? (Explain your answer)**

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* 1. **Which surveillance component is the most cost-effective? (Explain your answer)**

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* 1. **Why is the cost of the new risk-based design higher than the current active design? Why is the new risk based design acceptability lower than the current active design? How could it this be improved?**

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* 1. **Which recommendations will you provide to veterinary services using this results? Are those results sufficient to address the needs of the veterinary services? Which data is missing to help the veterinary services in their choice of changing or not the active component design?**

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1. ***Exercise Part 3/ Address the evaluation question and make recommendations***

You have now completed the assessment and economic analysis; the results are presented in Tables 4 and 5.

Table 4. Cost and benefits of CSF surveillance components, results of the simulation modeling

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| **Items** | **Surveillance components** | | |
| **Passive** | **Active** | **Active Risk-based** |
| Number of infected households | 151 | 161 | 161 |
| Number of uninfected households | 10 | 0 | 0 |
| Number of reported households | 76 | 145 | 129 |
| Number of culled pigs | 5069 | 2912 | 2589 |
| No dead pigs in infected farms (not reported) | 1521 | 324 | 647 |
| No saved pigs | 4332 | 7685 | 7685 |
| **Total costs** | 408,589 | 238,762 | 155,959 |
| **Benefit of saved pigs** | 476,905 | 846,044 | 846,044 |
| **Benefit-cost (B/C) ratio** | **1.2** | **3.5** | **5.4** |

Table 5. Summary of the economic evaluation results

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| **Surveillance component** | **Sensitivity (%)** | **Timeliness**  **(days)** | **Acceptability** | **Cost of surveillance (USD/animal)** | **Efficiency (cost-effectiveness)** | **Benefit- cost ratio** |
| **Passive** | 30% | >15 days | Medium | 5 | Low | 1.2 |
| **Active** | 80% | 3 days | Medium | 15 | High | 3.5 |
| **Active Risk-based** | 85% | 3 days | Low | 20 | High-Medium | 5.4 |

Using results from tables 4 and 5 please provide the final recommendations to the veterinary services:

* 1. **Which recommendations will you provide to veterinary services using these results? Are those results sufficient to address the needs of the veterinary services?**

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