

# Sub-Regional workshop on AMR in Aquaculture/Atelier Sous-Regional sur la RAM en Aquaculture



## Use of flowcharts and scenario trees in risk assessment

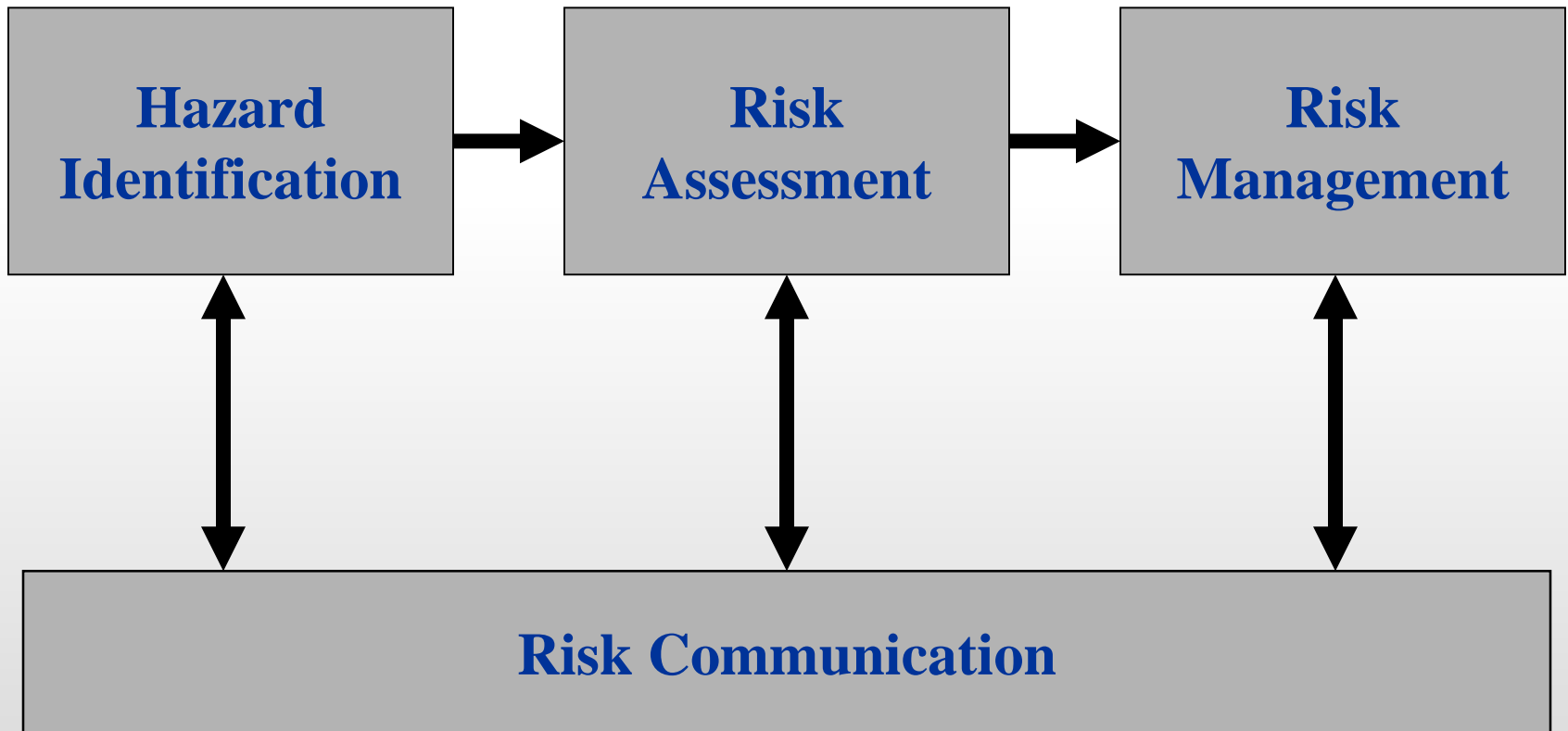
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# Agenda

- Introduction
- Flowcharts
- Scenarios trees
- Examples
- Conclusion

# Introduction

# OIE Risk Analysis Framework





# Flowchart



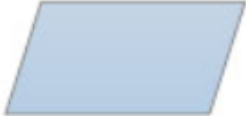


A visual representation of a sequence of steps and decisions needed to perform a process/production.

# Flowchart

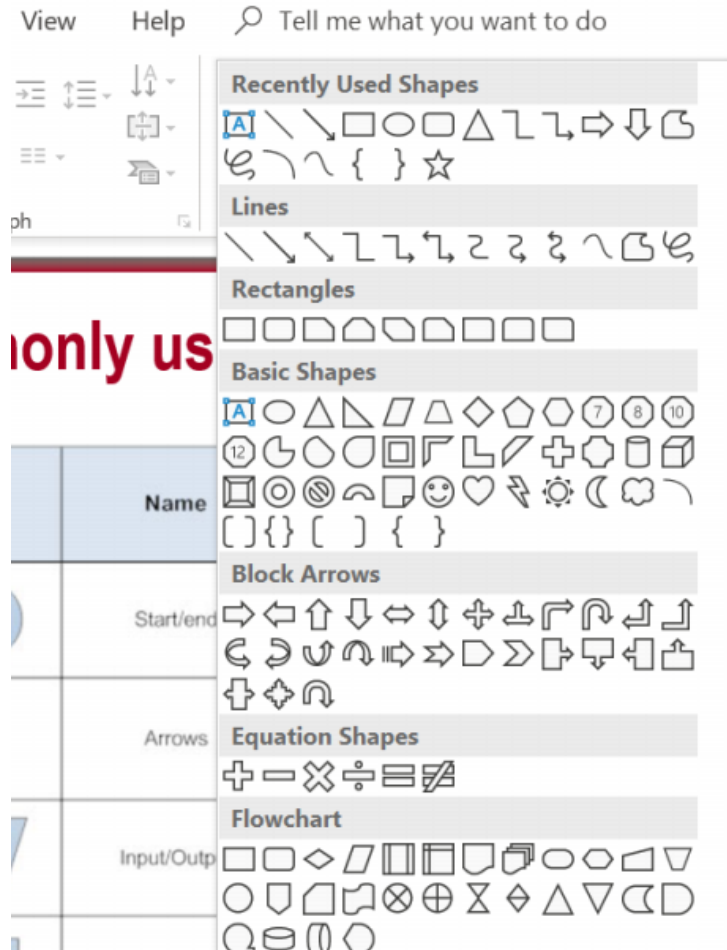


- powerful business tool.
- Can visualize steps in a process/production very effectively and efficiently.
- An effective tool to break down a complex production
- A tool to identify potential hazards as the process/production moves from one phase to the next.

# Commonly used symbols

Symbol	Name	Function
	Start/end	An oval represents a start or end point
	Arrows	A line is a connector that shows relationships between the representative shapes
	Input/Output	A parallelogram represents input or output
	Process	A rectangle represents a process
	Decision	A diamond indicates a decision

# Power Point



only us



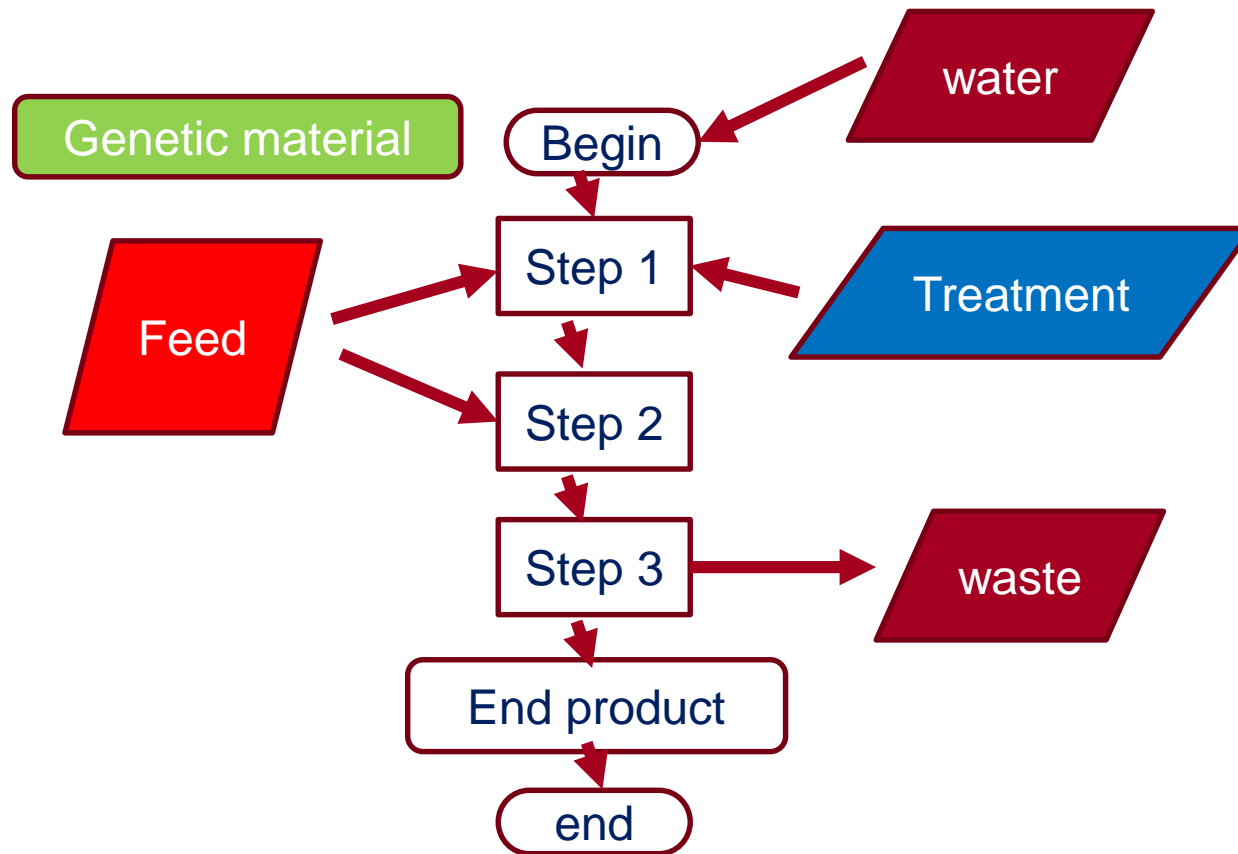
# Constructing a process Flow diagram

- **Identify all steps** in the production
- Identify **all activities** at each step
  - Spawning, Feeding, Handling, Sorting, Growing, Treating, Transporting, Slaughtering etc.
- Identify **inputs and outputs** in each step,
  - Water, Feed, Medicines, sludge, waste etc.
- Identify flow of **personnel**



**Draw a flow chart**

# A basic flowchart



# On site confirmation

- Confirm flow diagram and **farm layout** through an on-site inspection
- Walk through the farm and observe **all production stages** and **staff movements**
- Remember to observe/note **all inputs/outputs**
- Review the process at various times throughout the hours of operation
- Team work

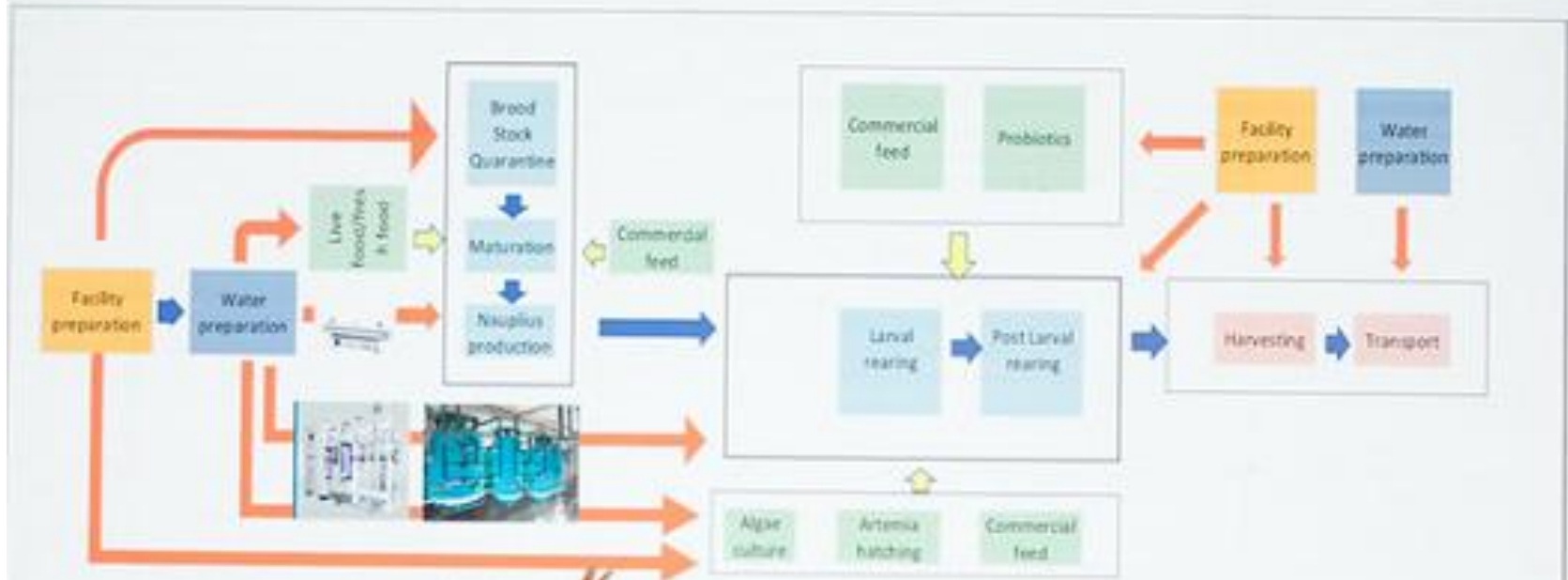
# Walk the line



# Farm outlay

- Show **production flow**
- include the flow of all **inputs/outputs** at every step
- **employee traffic** patterns; washrooms and lunchrooms including location of hand-washing facilities and footpaths (if applicable)

# Schematic diagram of systematic shrimp hatchery operation



# Scenario trees

- Prior to embarking on the risk assessment itself, it can be helpful to draw a **scenario tree for each hazard** under consideration to facilitate **identification** of the various **biological (risk) pathways** leading to:
  - the commodity harboring the hazard (if talking products)
  - susceptible animals and/or humans being exposed

# Scenario trees

- A graphical depiction of biological pathways by which a hazard might be introduced into an environment/production.
- It provides a useful conceptual framework.
- A scenario tree assists in conveying the range and types of pathways considered in a simple, transparent and meaningful fashion.



# Scenario trees

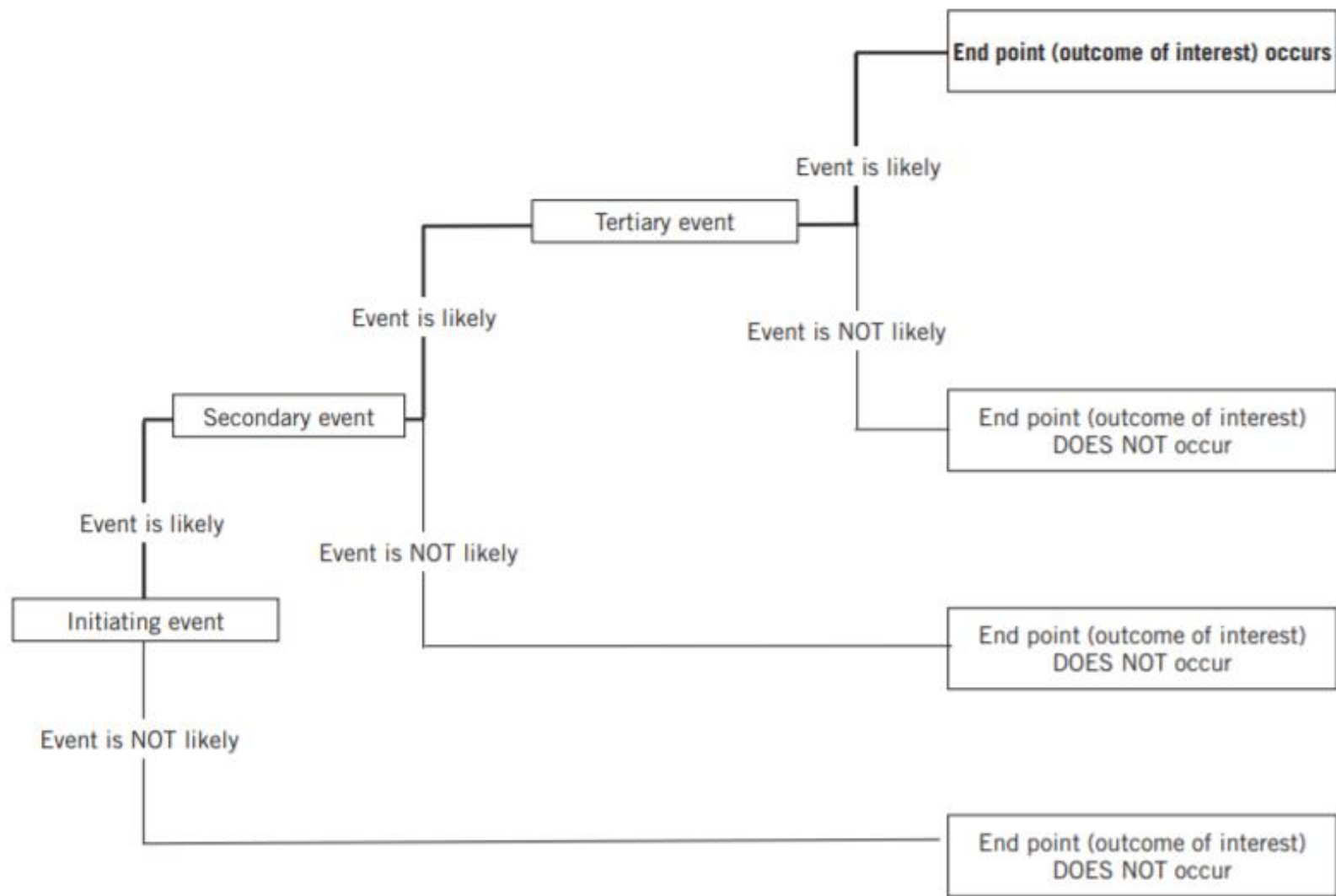
- Provide a useful visual representation to:
  - identify biological pathways
  - identify information requirements
  - ensure a logical chain of events in space and time
  - assist with communicating the risk analysis
  - clarify ideas and understanding of the problem

# Scenario trees

- assist with identifying sanitary measures and risk management in general
- assist with determining the likelihood of occurrence and subsequent consequences
- provide a framework for the later development of a quantitative model, should this be required.

# Scenario trees

- A scenario tree starts with an initial event, for example feeding.
- It then outlines the various biological pathways leading to:
  - Hazard introduced to the production system (entry assessment)
  - Susceptible animals/environment being exposed to the Hazard (Exposure assessment)



**Figure 6** Generalised framework for a scenario tree where probabilities are examined

# Chapter 5

For thought

# Statements

- **Multi-sectoral collaboration** is
  - essential when assessing risk
  - essential in controlling and managing health risks in aquatic environment
- AMR in aquaculture needs a **One Health** approach just as much as the terrestrial side.

# Thank you for your attention



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