

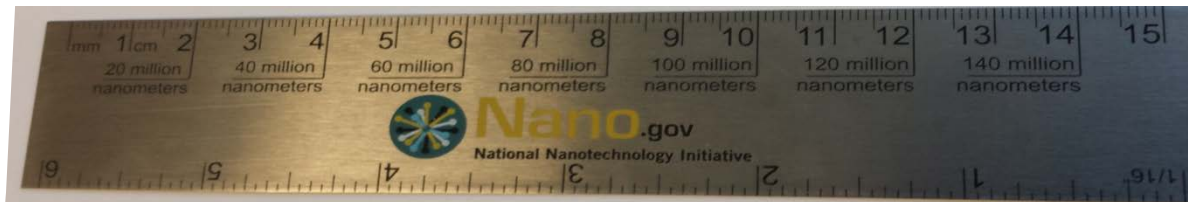


NanoEHS Scrimmage

EU-U.S.: Bridging NanoEHS Research
Efforts Joint Workshop
Thursday, March 12, 2015

What Are We Doing?

- Workshop participants will be divided into 10 teams to respond to a hypothetical nanoEHS scenario.
- The winning teams will receive a prize.



NanoEHS Scrimmage Scenario

- We are all citizens of Country X, each assuming the role, expertise, and sector affiliations we currently hold in real life. Elections are coming up shortly, and due to a strong public demand for action, immediate regulatory decisions are being required by Country X leadership to impose strict limits on occupational, consumer, and environmental exposures to two specific ENMs: **nano-TiO₂** and **CdSe-sensitized nano-TiO₂**
- The CORs represent the teams charged with developing the required recommendations, which will depend on academic, industrial, and regulatory information.
- Through this activity, all members of the U.S.-EU CORs will work together to meet a unified government goal.

A Note on Recommended Limits

- While you have been instructed to formulate defensible limits from the standpoint of protecting health and the environment, the economic consequences of implementation of these regulations is also a consideration that *prevents regulated limits from being set to zero* unless you are able to document extremely severe the consequences of a non-zero limit that outweigh important economic hardships that would accompany efforts to achieve a regulated level of zero.

Disclaimer

The recommended regulatory limits to be developed as part of this exercise **are not intended to serve as actual policy recommendations**; rather, the activity is intended to generate recommendations pertaining to the process of arriving at a collective answer in response to the simulated challenge.

The Basics

- **Teams:**
 - 10 preassigned teams
 - 5 teams focus on nano-TiO₂
 - 5 teams focus on CdSe-sensitized nano-TiO₂
- **To Play:** Collect points by answering questions
- **To Win:** Collect the most points. There will be two winning teams, one for each material.

Teams

Check your badge. Teams are preassigned.

Nano-TiO ₂		CdSe-Sensitized Nano-TiO ₂	
Exposure A	Rick Canady	Exposure B	Martie van Tongeren
Human Health A	Robert Rallo	Human Health B	Yoram Cohen
Ecotoxicity A	Elijah Petersen	Ecotoxicity B	Henriette Selck
Risk Assessment A	Derk Brouwer	Risk Assessment B	Mark Wiesner
Risk Management A	Larry Gibbs	Risk Management B	Tom van Teunenbroek



The leader for each group will keep the official team scorecard.

Teams

Check your badge. Teams are preassigned.

Nano-TiO ₂		CdSe-Sensitized Nano-TiO ₂	
Exposure A	Rick Canady	Exposure B	Martie van Tongeren
Human Health A	Robert Rallo	Human Health B	Yoram Cohen
Ecotoxicity A	Elijah Petersen	Ecotoxicity B	Henriette Selck
Risk Assessment A	Derk Brouwer	Risk Assessment B	Mark Wiesner
Risk Management A	Larry Gibbs	Risk Management B	Tom van Teunenbroek

These teams will compete against each other

These teams will compete against each other

To Play

- Collect as many points as possible by answering questions on the scorecard.
- 1 question = 1 point
- All teams will have the same set of questions in four categories:
 - Occupational workplace limit
 - Consumer product concentration limit
 - Environmental exposure limit for freshwater
 - Ambient air quality exposure limit
- **Prioritizing questions is a must!**

Speed Consulting

- Other CORs will be consulted in a round-robin discussion with 10 minutes per rotation
 - 5 minutes on nano-TiO₂
 - 5 minutes on CdSe-sensitized nano-TiO₂
- B teams will stay at the same table throughout the activity
- A teams will rotate every 10 minutes

Scorecard

Team: Exposure A Material: TiO₂

Round	Cluster	Partner Team
1	1	SELF
2	1	Human Health B
3	2	Ecotoxicity B
4	3	Risk Assessment B
5	4	Risk Management B
6	5	SELF

Rotation Schedule
(more on this soon)



List primary team that you worked with to come up with answer in resource column. This could be “self” if no other team was consulted, or it could be the name of the other team consulted, e.g., “Ecotoxicity B.”

NanoEHS Scrimmage Scorecard

Team: Exposure A

Material:

TiO₂

	Question	Answer	Resource
1	What should be the occupational workplace limit?		
2	What are the recommended numerical bounds?		
3	In what matrix/form is the ENM expected to be encountered during the fabrication process?		
4	What detection methods may be used to detect the presence of these materials in the workplace and/or the environment?		
5	What is the expected release rate of the ENMs from the product matrix?		
6	Who will be impacted by exposure to the selected nanomaterials (human populations)?		
7	What ecosystems will be impacted by exposure to the selected nanomaterials?		
8	What environmental processes/ ecosystem services may be impacted by exposure to the selected nanomaterials?		
9	What are the likely exposure vectors to the workplace environment?		
10	What environmental compartments are likely to be the release points and the accumulation points for these materials?		
11	What should be the regulatory mechanism to address these exposure limits?		
12	How will we identify the presence of these materials?		
13	What are the impacts to industry from the upcoming regulations?		
14	What are the impacts to the markets of these materials due to these regulations?		
15	Will the upcoming regulations impact any international trade agreements or national regulations on these materials?		
16	What types of cost benefit analyses of the proposed regulatory mechanisms should be carried out?		
17	What data should be required from manufacturers or others to demonstrate compliance with the proposed regulations?		



Answer column
is self-explanatory



Evolving Priorities

Priorities after Round 1

Topic	Relative Ranking (1-4)
Occupational	
Consumer Product	
Freshwater	
Ambient Air	

Priorities after Round 6

Topic	Relative Ranking (1-4)
Occupational	
Consumer Product	
Freshwater	
Ambient Air	

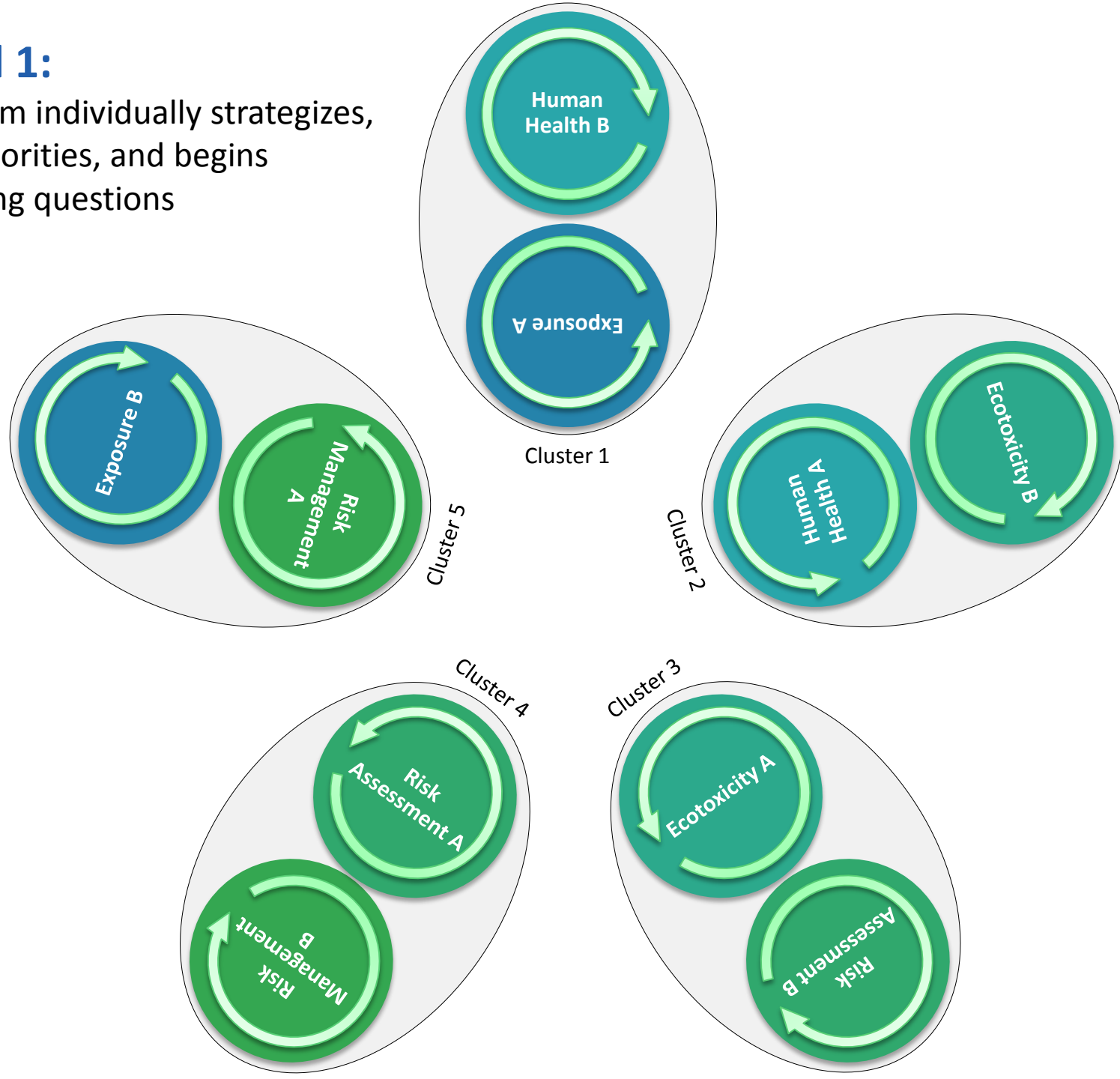
- Use Page 5 of the scorecard to list your priorities areas after the first and last rounds.
- We will use this information to measure the impact of interacting with the other groups.

A Note on Questions

- **Please try to constrain your answers to the questions listed on the scorecard.**
- However, if you think that a particularly relevant question was not included, you can add that question and answer it.

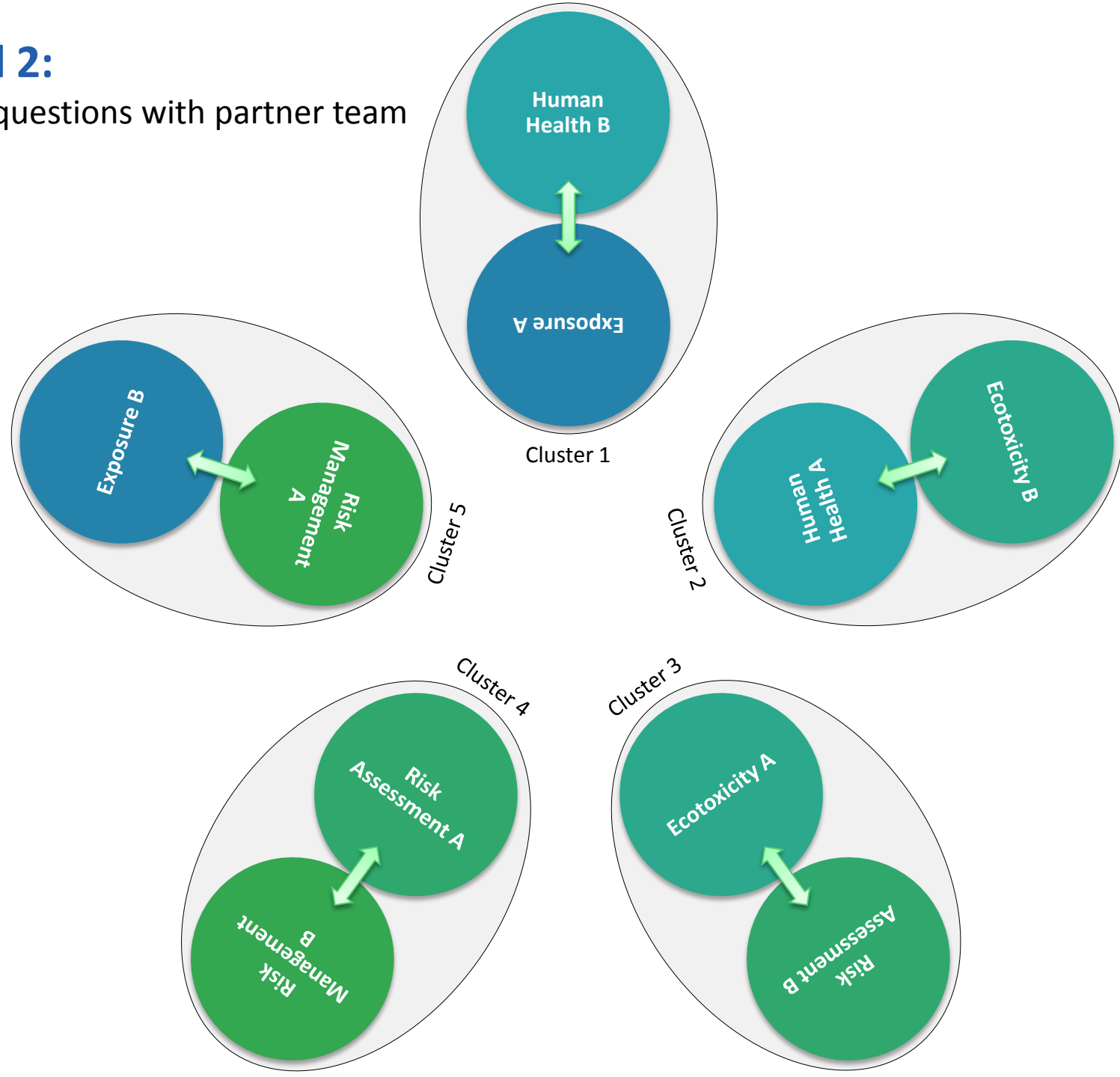
Round 1:

Each team individually strategizes, ranks priorities, and begins answering questions



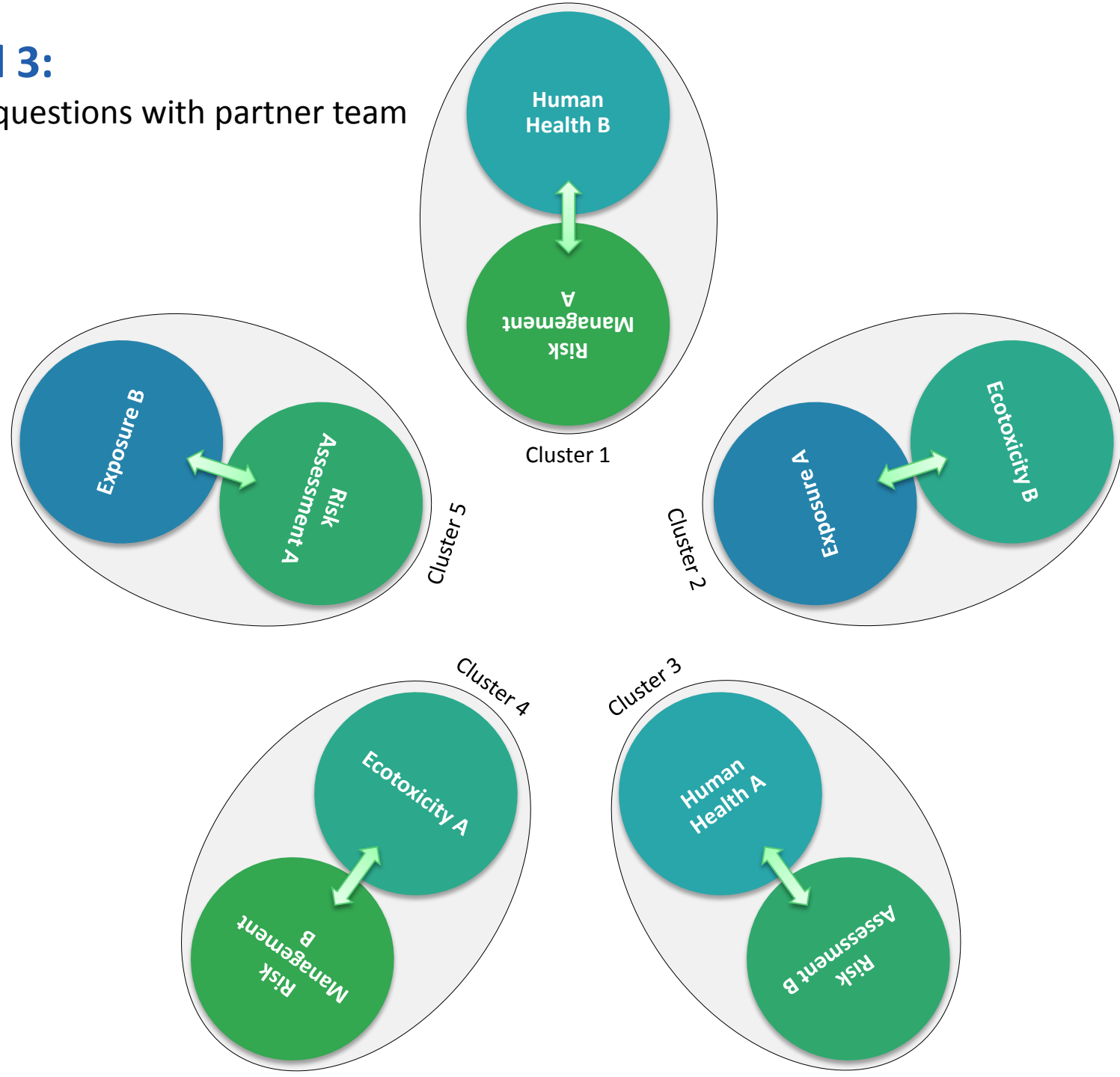
Round 2:

Discuss questions with partner team



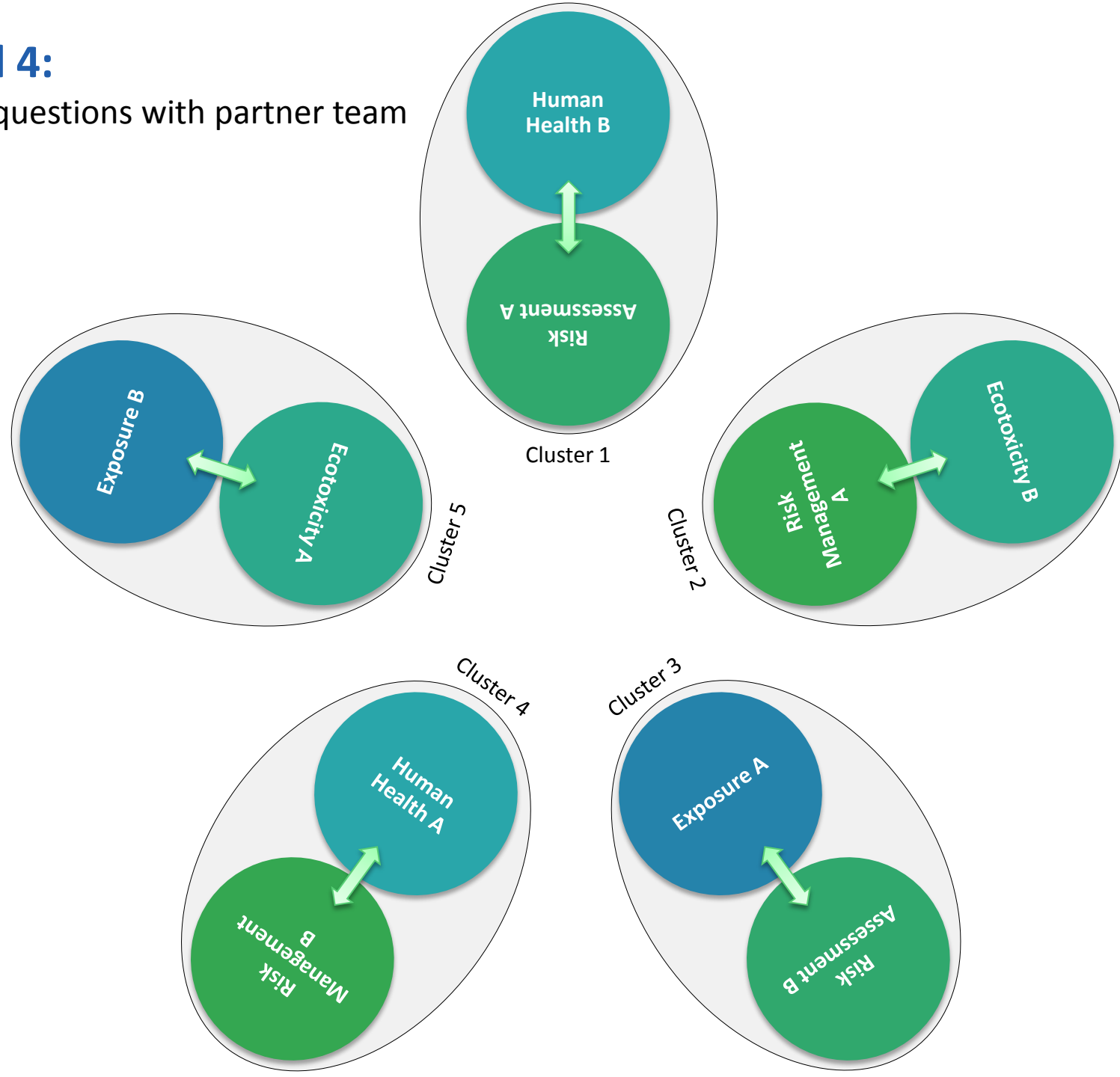
Round 3:

Discuss questions with partner team



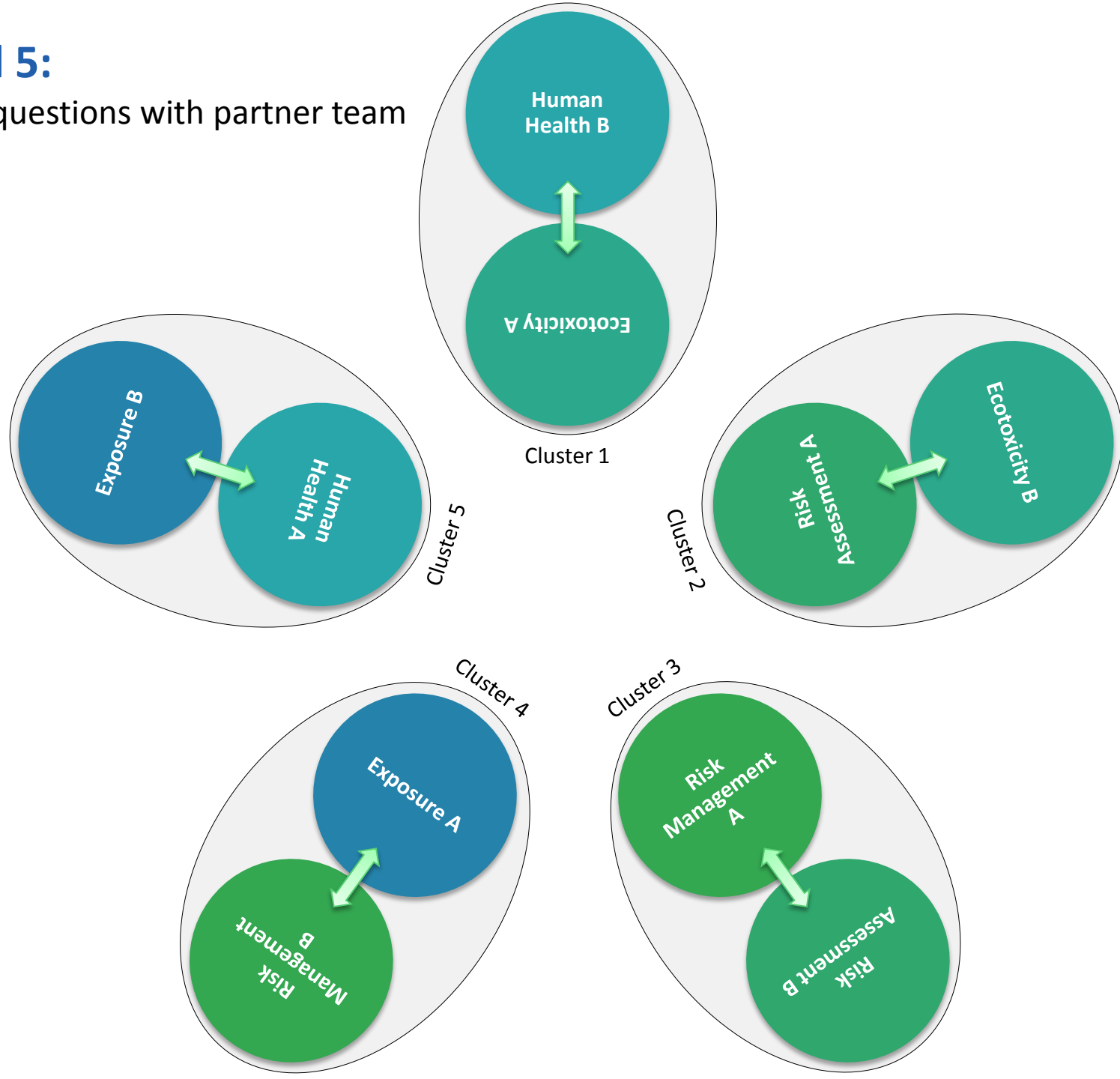
Round 4:

Discuss questions with partner team



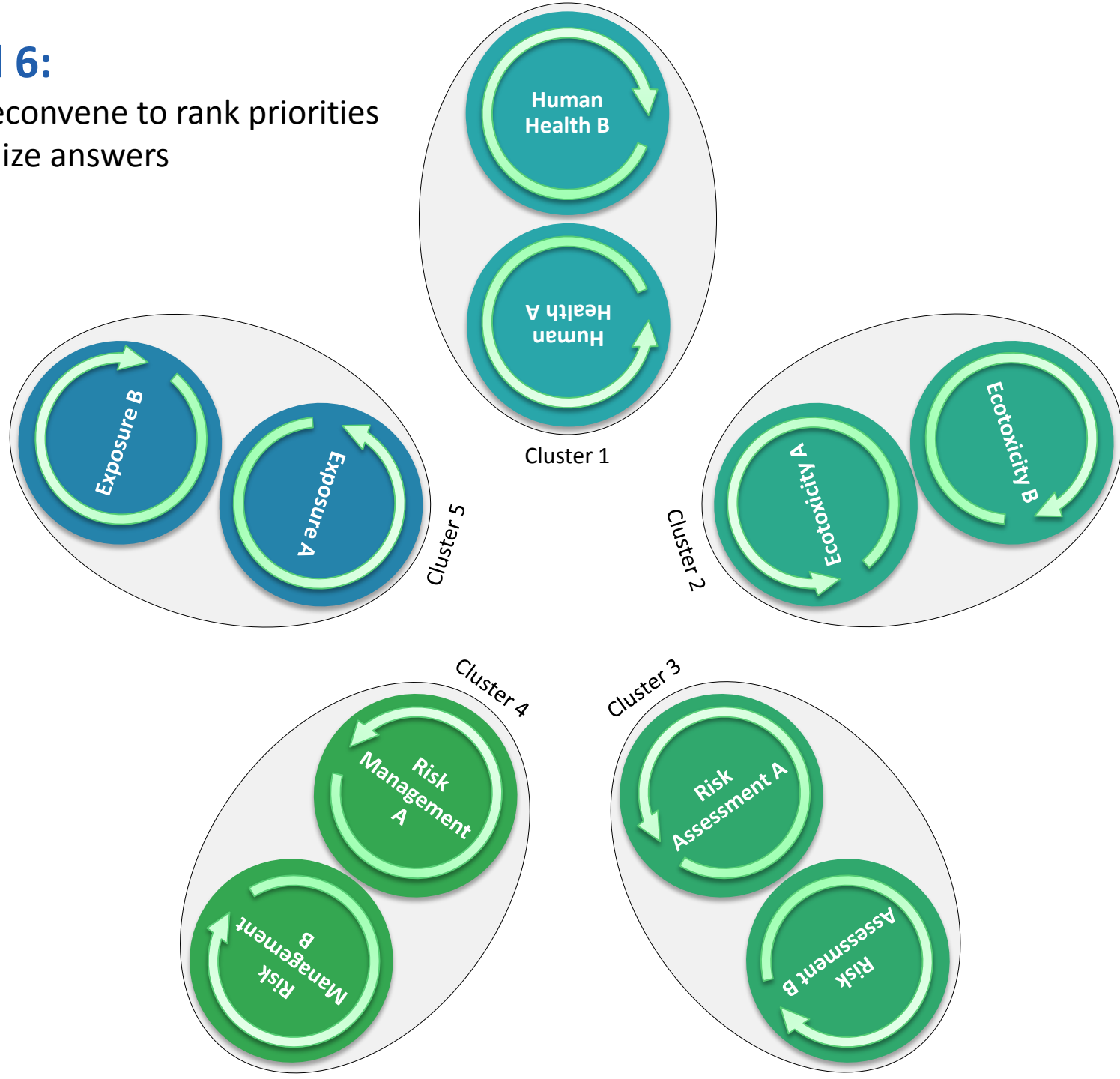
Round 5:

Discuss questions with partner team



Round 6:

Teams reconvene to rank priorities and finalize answers



Why Are We Doing It?

- To carry out a **simulated decision process** that explores how **communication processes between CORs function**, and may sometimes fail, to address the information and actions needed to support responsible development of nanotechnology
- To **incorporate input from multiple communities** of expertise across the nanoEHS field.
- To **provide insight into how the U.S.-EU CORs should advance and set goals** by shedding light on several questions:
 - What are some critical disconnects between communities or information deficits that might be addressed within the CORs?
 - Are the CORs properly aligned for successful information-sharing in support of risk-based decisions on nanomaterials?
 - What major differences are revealed through this specific case regarding informational needs and communication processes 1) for the different selected nanomaterials and 2) in the U.S. and the EU?
- **Avoid this being another academic exercise** – avoid the automatic response of “we can’t give you a number yet” that would result in a general discussion of data gaps.

What Do We Hope to Achieve?

- **A peer-reviewed manuscript** summarizing the event, its results, lessons learned, and implications for coordinated nanoEHS research.
- **Scorecards will provide raw data** (i.e., questions answered, questions skipped, which groups answered which questions, etc.)
- Subsequent **plenary sessions** provide opportunities to **discuss findings and outcomes**

Schedule

10:30 – 10:50

Coffee Break

Move to NanoEHS Scrimmage room

10:50 – 12:00:

NanoEHS Scrimmage Activity

12:00 – 13:00:

Plenary #1

Discuss what worked, what didn't, surprising results, etc. in a facilitated conversation

Provide context for the scorecards

13:00 – 14:00:

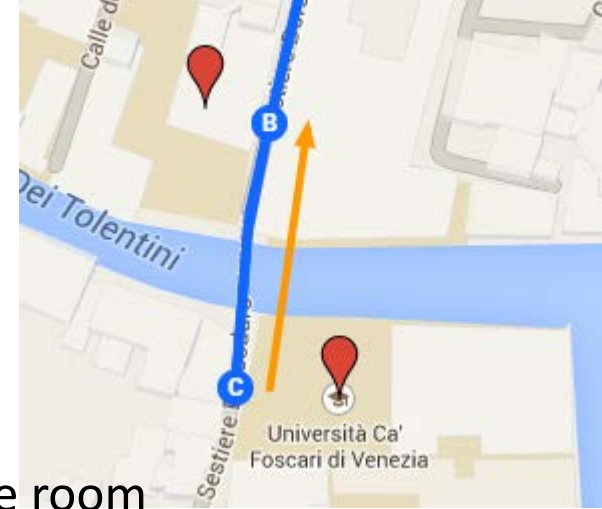
Lunch (scorecards will be tabulated)

14:00 – 14:20:

Plenary #2 (back in original room)

Present/discuss initial analysis of scorecards

Announce winning teams



Questions?