



Audencia

# L&T REX #29 CERBAZINE – Crisis simulation game

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# Initial CERBAZINE crisis simulation game

*Main insights of the case (for information – available at the CCMP centre)*

# Initial purpose – build a collective charter « quality and commitment for biodiversity »

## 4 companies in the Coal Region *Former mining region*



Aqua'CoalReg



BabyNutri'CoalReg

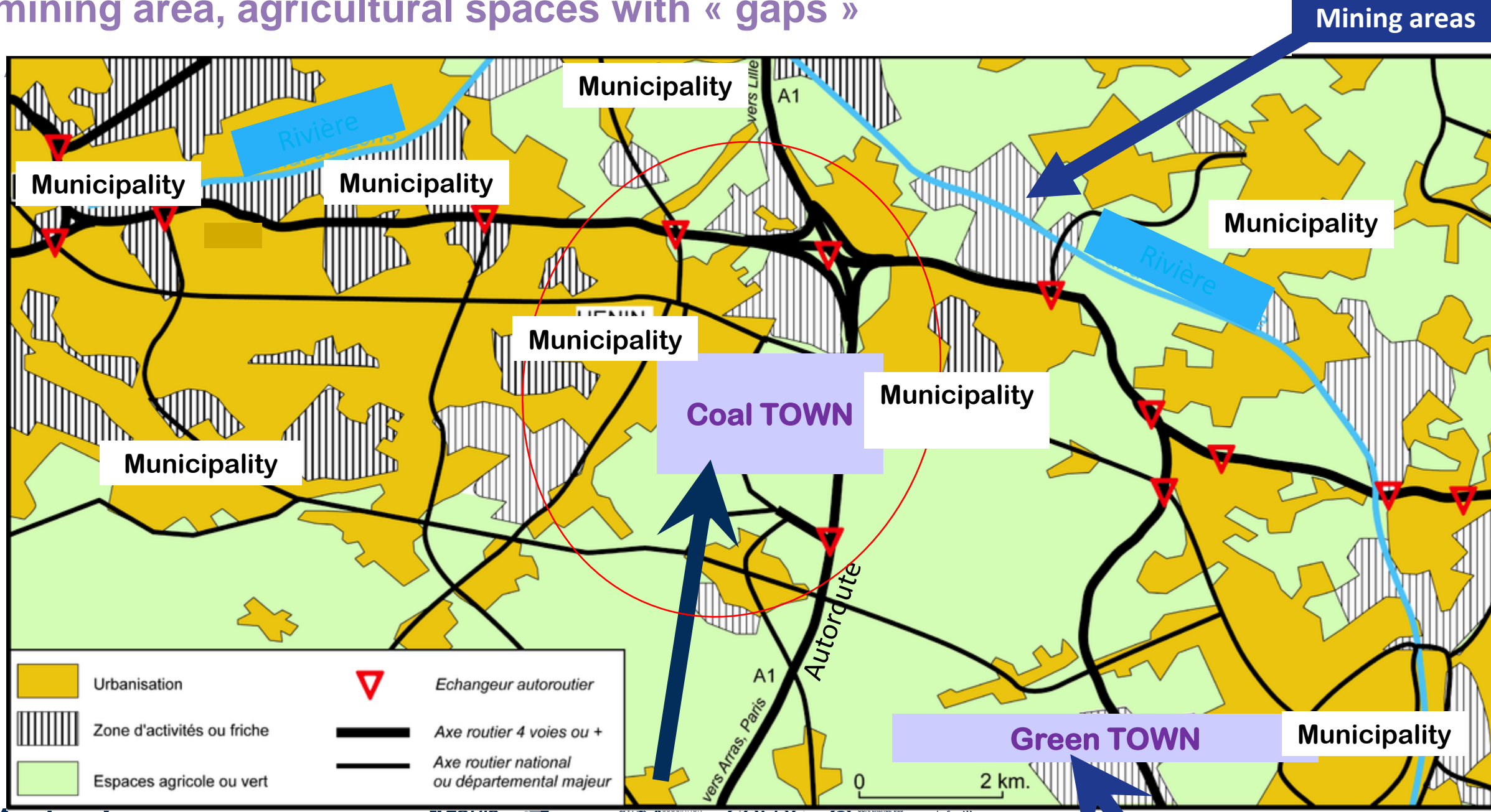


Cereal'CoalReg



Vegetabl'CoalReg

# A mining area, agricultural spaces with « gaps »



Mining areas

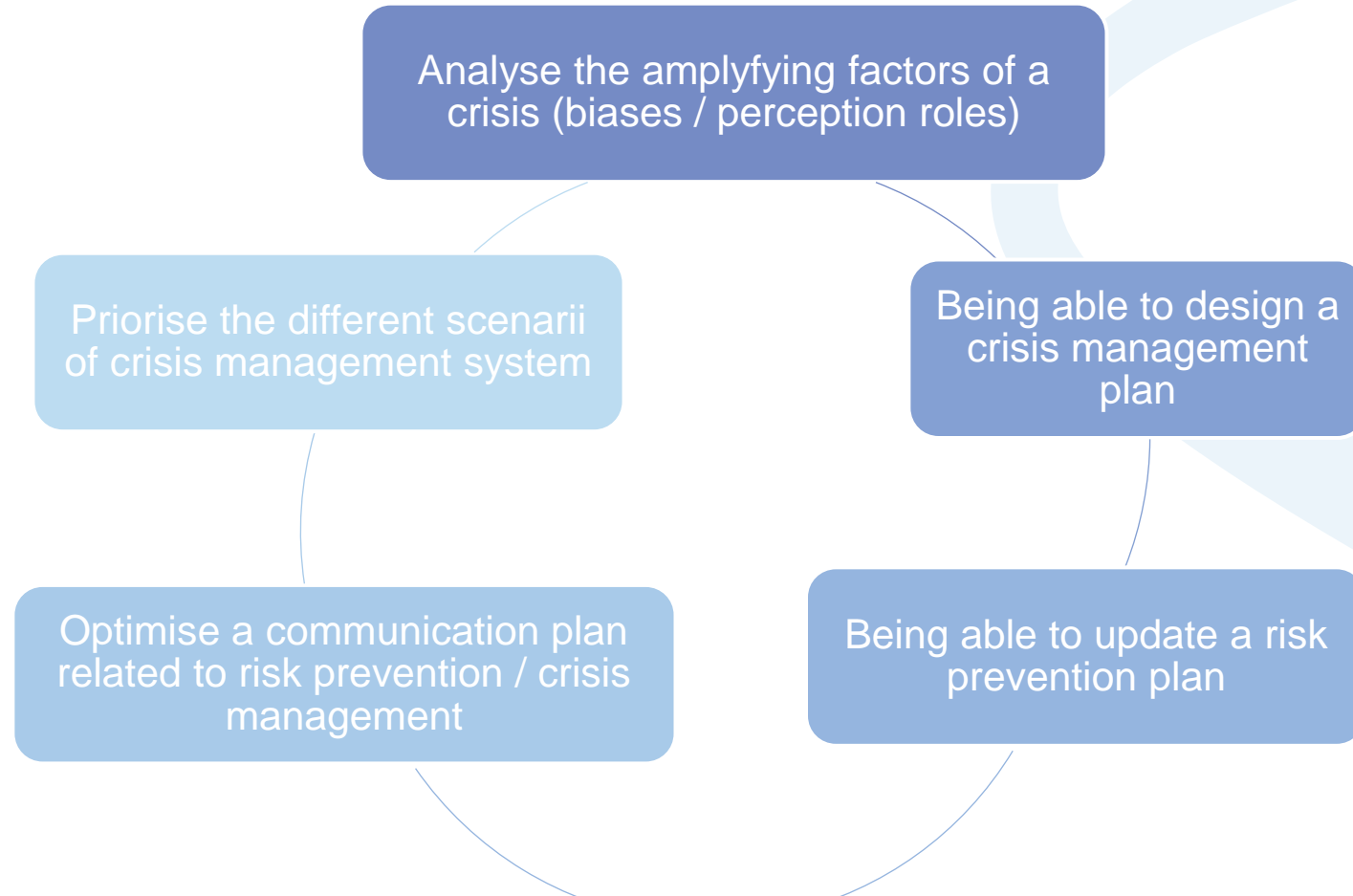
Headquarters + Main production sites of the 4 companies

Secondary production sites

# How a crisis starts and spreads out



# Pedagogical objectives – Version 1.0 : Being an actor in a crisis management



# Pedagogical main characteristics



Acting as professionals  
Crisis unit teams  
Making decisions under pressure  
External / internal communication



Round table or television news  
session facilitated by a fake  
journalist  
(TV studio - Mediacampus)



Softskills self evaluation

# Autoevaluation grid – Filled and analysed by each student

## GRILLE D'AUTOEVALUATION INDIVIDUELLE

Notes de 1 à 4 : 1 Pas du tout d'accord ; 4 Tout à fait d'accord

En lien avec le Learning Goal 2 et Learning Objective 5

		1	2	3	4
<b>Action, décision</b>	<i>J'ai contribué à prioriser les décisions relatives au plan de gestion de crise</i>				
	<i>J'ai alerté le groupe sur les signaux faibles de la crise</i>				
	<i>J'ai contribué à des supports de communication pertinents</i>				
	<i>J'ai anticipé les difficultés de la gestion de crise</i>				
	<i>L'incertitude m'a gêné(e) dans la prise de décision</i>				
	<i>J'ai contribué à la prise de risques dans la décision</i>				

		1	2	3	4
<b>Analyse de situations complexes</b>	<i>J'ai pu m'approprier facilement la complexité de la crise</i>				
	<i>J'ai su mobiliser des connaissances de différentes disciplines</i>				
	<i>J'ai contribué à identifier toutes les dimensions du plan de gestion de crise</i>				
	<i>J'ai eu une vision globale des risques et des enjeux de la crise</i>				
	<i>J'ai fait preuve de créativité pour représenter la complexité de la crise (exemple : carte systémique)</i>				

## Learning Goals et Learning Objectives complémentaires

		1	2	3	4
<b>RSE</b>	<i>J'ai cerné les intérêts des différentes parties prenantes</i>				
	<i>J'ai agi avec éthique dans la gestion de la crise</i>				
	<i>J'ai veillé au respect des réglementations</i>				
	<i>J'ai communiqué avec transparence auprès des diverses parties prenantes</i>				
	<i>J'ai pris conscience des enjeux liés à une pollution rémanente externe</i>				

		1	2	3	4
<b>Coopération</b>	<i>J'ai partagé l'information avec le groupe</i>				
	<i>J'ai imposé un certain leadership</i>				
	<i>J'ai veillé au maintien d'un leadership distribué/partagé</i>				
	<i>J'ai respecté le périmètre de mon rôle / celui des autres</i>				
	<i>J'ai été amené(e) à sortir du rôle qui m'était attribué</i>				
	<i>J'ai été force de proposition dans les prises de décision concertées</i>				
	<i>J'ai accordé facilement ma confiance au groupe</i>				
	<i>J'ai eu confiance en moi dans mes propositions</i>				
<i>J'ai fait preuve d'assertivité</i>					



# From a crisis simulation game... to commitment to reduce impact on biodiversity

*Second version of the Cerbazine case : linking different disciplinary fields*

# Corporate biodiversity footprint

- **CBF is measuring company impact on biodiversity**
- **Iceberg data Lab**
- **Products and services which are generated : raw materials tons (milk, cereals, aluminium, zinc, coal) => environmental impact (air pollution, water pollution, global warming (MSA.km2))**
- **Information provided : CBF of the different projects / different alternatives**

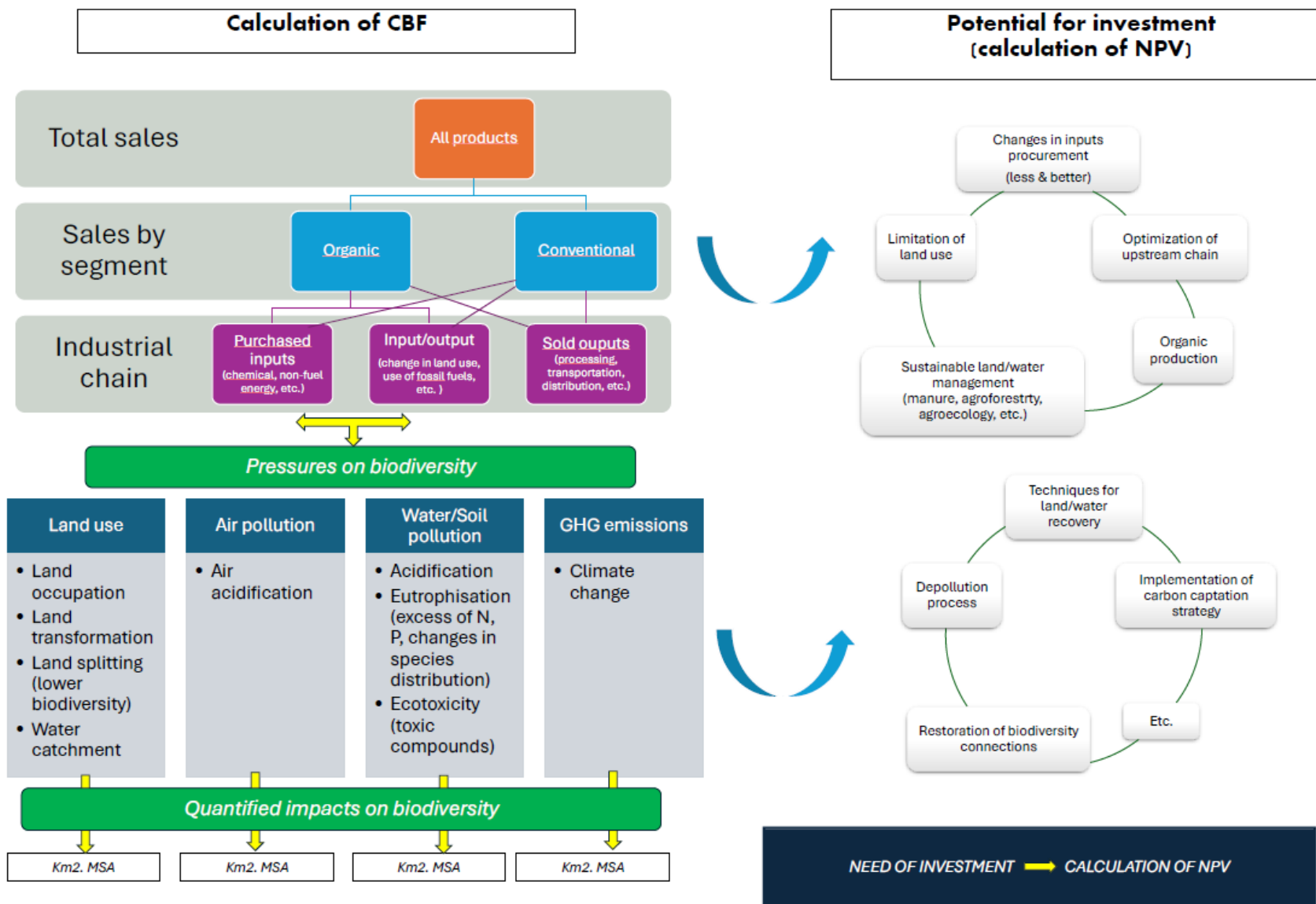
# NPV

$$NPV = - \textit{Investissement} + \frac{\sum_{t=1}^{t=20} \textit{Future Profits}}{(1+r)^t}$$

**CBF**



# Link between CBF and NPV



# Feedback on the interdisciplinary approach

- **Most students recognized CBF as a powerful sustainable tool, connected to a real world**
  - *Increased awareness of local systems interconnectedness / company impact on biodiversity*
  - *Increased awareness of how to leverage this tool compared to investments*
  - *A possibility to concretely handle an overall feeling of guiltiness regarding the destruction of nature*
  - *Most students made the choice to give space to nature*
- **Frustration of short term decisions led by the crisis event agenda – tension between long term vision**

# Appendice

*2024 – case revisited by linking different disciplinary fields*

# Students verbatims

“After experiencing the crisis and incorporating the CBF indicator, it became clear that this tool significantly shaped both our immediate crisis response and long-term strategic planning, including our financial decision-making. Notably, our company held the lowest CBF in the crisis simulation, and maintaining this advantage was crucial for both our sustainability credentials and our financial viability.”

“The fact that we had the lowest CBF among competitors gave us a significant reputational edge, which we leveraged to regain consumer trust and manage stakeholder relationships. This environmental standing also provided a legal advantage, allowing us to demonstrate our commitment to sustainability in the eyes of regulators and financial stakeholders. Every decision—from securing alternative, eco-friendly water sources to mitigate the contaminant's financial impact—was made with the dual goal of addressing the crisis and preserving our low biodiversity footprint.”

“In the immediate term, the indicator prompted us to review our production methods, particularly at the CoalTown site. We became aware of the direct impact of our farming practices on biodiversity, which led us to envisage rapid changes. For example, we began to think about increasing production of organic chicory at the GreenTown site, which has a much lower environmental impact, while meeting growing consumer demand for more sustainable products.”

# Students verbatims

“We used the CBF as a metric to guide capital allocation, ensuring that our investments prioritized environmentally sustainable initiatives. For instance, as the CFO, I was directly involved in managing the financial strategy to recover from the crisis while ensuring that biodiversity remained at the core of our business model. The decision to invest in expanding organic trout production was made with the CBF in mind. Since this production method had a lower biodiversity impact, it aligned with both our sustainability goals and our financial objectives of reducing risk exposure and enhancing long-term profitability. By investing in sustainable growth areas, we were able to balance short-term financial recovery with long-term resilience, using the CBF to justify and direct these financial decisions.”

“The introduction of the CBF indicator has shown me how crucial it is to integrate sustainability into our day-to-day actions. I also need to better understand environmental reporting tools to ensure that our decisions are aligned with expectations in terms of social and environmental responsibility.”

“The CBF indicator provided understanding our company’s impact on biodiversity, guiding immediate actions that would not only solve the crisis but also align with sustainability goals. Even though the direct contribution of our trout farming to biodiversity loss was limited, we recognized the interconnectedness of local ecosystems. Therefore, quick steps to secure safe water and prevent further environmental damage were crucial. The CBF highlighted the need for a collective approach to environmental sustainability. Given that other companies in the area had higher CBF scores, the allocation of costs for making infrastructure more eco-friendly should be weighted according to the relative impact of each company on biodiversity. “



# Students verbatims

“The limited cash reserves of €200K in Year 0 had to be allocated carefully to address urgent needs, such as mitigating water pollution’s impact on trout production, while considering long-term investments in eco-friendly infrastructure. The challenge was not only to ensure financial stability but also to support sustainable development, factoring in the Corporate Biodiversity Footprint (CBF) to allocate resources responsibly. The experience underscored the importance of risk assessment, as calculating Net Present Value (NPV) for potential investments under uncertain conditions required careful analysis.”

“Thus, all our efforts were focused on short-term solutions to manage the pesticide crisis. In hindsight, the optimal response would have been to involve CBF experts who could remind us of our long-term sustainability goals and help us integrate the CBF strategy into our crisis management. Unfortunately, the CBF was not part of our crisis considerations, which severely impacted us when we later faced the investors. “

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# Students verbatims

*“The introduction of the CBF indicator has shown me how crucial it is to integrate sustainability into our day-to-day actions. I also need to better understand environmental reporting tools to ensure that our decisions are aligned with expectations in terms of social and environmental responsibility.”*

“In the short term, the CBF indicator pushed us to make faster decisions about moving to more sustainable practices. The crisis showed us that we were on the right track to move our production to Green Town but also that we need to do more if we want to avoid future issues. Long-term, this has really reinforced the idea that we need to keep focusing on reducing our environmental impact. It’s not just about avoiding crises, but also about staying ahead by being eco-friendlier in everything we do”

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# Students verbatims

“Looking toward the future, our long-term vision to transform the company into a 100% organic firm was also strongly influenced by the guilt and accountability we felt due to the CBF indicator. It served as a reminder of our environmental shortcomings, pushing us to aim for a greener future. When it came time to present to shareholders, this same sense of guilt and powerlessness weighed heavily on our decision to commit to largescale investments for the company’s green transformation. We realized that, beyond just fixing the immediate issues, we had to invest in long-term sustainability to redeem our brand’s image and ensure its future.”

“Looking further into the future, the CBF indicator has also shaped the company’s strategic outlook by driving a more proactive approach toward biodiversity preservation. The company’s future planning began to emphasize:  
=> Sustainability-driven innovation: The CBF has encouraged long-term investments in new, sustainable technologies that not only reduce energy consumption but also minimize biodiversity loss. For example, continued research into pesticide alternatives and eco-friendly farming methods became a focus  
=> Reputation and market positioning: The CBF has influenced the company's branding strategy, pushing it to promote its organic and eco-friendly products as part of its public identity. “