GUIDED ANALYSIS WORKSHEET

Case Study: The Almond Valley

Step 1: Understanding the Context

1.1 The Territory

Geographical location	Val Riduna, a small valley in the hilly area of Friuli, northeastern Italy, between the first slopes of the Julian Pre-Alps. It includes three municipalities: Riduna, San Floriano, and Castelnovo. Total area around 45 km².
Population and demographic trend	About 3,200 residents across the three municipalities. Declining and ageing population: young people leave for cities (Trieste, Udine, Padua). Modest recent influx of neo-rural residents and agritourism entrepreneurs (e.g. Giulia Tomasi).
Main economic activities	Small-scale agriculture (almonds, wine, honey), food-and-wine tourism, cycling tourism, and the annual Almond Blossom Festival. Two small processing workshops for almond products. Fragile economic balance, with agriculture often managed by elderly owners.
Central identity element	The almond tree and the Almond Blossom Festival. The "Mandorla di Riduna" is a Slow Food Presidium product. The almond blossom (February-March) is the valley's symbolic and economic core, entirely dependent on bee pollination.

1.2 The Problem

What is the immediate problem?	Massive bee mortality in Val Riduna, causing pollination failure of almond orchards and collapse of the local almond economy.
What quantitative data do we have?	Silvano Mosetti's hive losses: 40% (winter 2019), 55% (2020), ~70% (2021). He went from 180 hives to about 50. Three other part-time beekeepers report similar losses. 2024 almond harvest was 70% below average. Marco Visintin lost €180,000 in one year. The Region reports 30% average bee colony loss in Friuli Venezia Giulia.
What causes are suggested?	Multiple and contested: (1) Neonicotinoid pesticides from neighbouring vineyards (Silvano's view); (2) Varroa destructor mite, exacerbated by mild winters due to climate change (ERSA technicians); (3) Combination of pesticides, monoculture, and the industrial agricultural model (Teresa Paulin). Lab results are inconclusive: pesticide traces present but below lethal thresholds.
What consequences have already appeared?	Failed 2024 almond blossom and harvest (70% below average). Two processing workshops may close. Five jobs at risk. The Almond Blossom Festival's future is threatened. The Slow Food Presidium certification could be lost. Marco Visintin faces

	potential bankruptcy. Broader ecological damage to the valley's biodiversity.

Step 2: Mapping the Actors

Actor	Position	Material interests	Values / principles
Marco Visintin (52, Consortium president)	Strongly in favour of AgriDrone. The most vocal supporter of technological intervention.	Manages 8 hectares of almonds (largest in valley). Lost €180,000 in one year. Has 5 employees. His economic survival depends on finding a solution quickly.	Pragmatism, economic survival, modernisation. Values productive efficiency and sees technology as progress. Willing to accept imperfect solutions to avoid economic collapse.
Silvano Mosetti (67, beekeeper)	Furious opposition. Sees the proposal as an insult to his profession, his family legacy, and to nature.	50 years of beekeeping, family tradition spanning three generations. Down to ~50 hives from 180. His livelihood and identity are at stake.	Tradition, respect for nature, intergenerational knowledge. Sees bees as irreplaceable living beings, not a "function." Fears technological dependence on a private corporation.
Teresa Paulin (45, biologist)	Against AgriDrone. Proposes an alternative ecological plan addressing root causes.	Works for a regional environmental association. Brings scientific credibility and institutional connections (University of Udine, ISPRA).	Systemic thinking, environmental justice. Views the crisis as political, not technical. Believes in addressing causes (pesticides, monoculture) rather than symptoms. Values community autonomy over corporate dependence.
Father Luigi (71, parish priest)	Against drones. Frames the issue in theological/moral terms.	No direct material interest, but strong social influence over the elderly population. 40 years of pastoral authority in San Floriano.	Religious stewardship of creation. Sees replacing bees with machines as "pride" and a sin against divine order. Represents a moral-conservative worldview rooted in the sacredness of natural processes.
Elena Nordio (38, AgriDrone CEO)	Proposes the drone pollination experiment. Later offers a compromise (half the orchards, voluntary).	Born in Riduna but built career in Zurich. AgriDrone needs an open-air pilot site for credibility. Investors include a fund linked to Syngenta. Faces competitive pressure (Emilia-Romagna is an alternative site).	Technological innovation, entrepreneurial ambition. Genuinely believes in her product, but also serves investor and corporate interests. Frames the proposal as win-win but operates under market logic.
Marta Cecconi (48, Mayor)	Undecided. Must mediate and ultimately propose a decision to the council.	Elected on a "sustainable revival" platform. Political survival depends on not alienating either faction. Feels personal responsibility for the valley's future.	Democratic participation, community cohesion, sustainability. Torn between urgency (Marco) and caution (Silvano/Teresa).

			Embodies the dilemma of the case itself.
The young people	Divided. Flash mob with slogans from both sides.	Most study/live elsewhere. Want a future in the valley but on different terms. Chiara (Silvano's granddaughter) wants innovation without ecological destruction. Matteo (Marco's son) works in the family business and faces immediate economic pressure.	Chiara: environmental science, future-oriented thinking, critique of "museum-valleys." Matteo: economic realism, pragmatism, frustration with what he sees as privileged idealism. They mirror the adult debate but add generational urgency.

2.1 The Invisible Actors

Who has no voice in the debate but is involved?

Who?	Why? How?
The bees themselves	The most directly affected actors, yet entirely voiceless. They are discussed as a "resource," a "function," or a symbol—but never as agents with their own existence. Their decline is the trigger for the entire case, yet solutions are framed around human needs (economic survival, tourism, identity), not around bee welfare per se.
Vineyard owners on the plain	Repeatedly identified as a probable cause of bee decline through pesticide use, yet completely absent from the debate. They are not invited to the public meeting, not asked to change practices, and not required to contribute to solutions. This absence reveals a power asymmetry: those who cause the problem are not held accountable.
Future generations	Decisions made now will shape the valley for decades. If drones replace bees permanently, reversibility is lost. If nothing is done, the economic base collapses. The young people partially represent this perspective, but the unborn have no voice at all.
AgriDrone investors / Syngenta	Present through their capital but invisible in the public debate. The Syngenta connection reveals a structural contradiction: the agrochemical industry that contributes to bee decline profits from the technological "solution." Their interests shape the proposal but are never directly represented.
Seasonal workers and precarious employees	The five workers in Marco's workshop, and others in tourism/agriculture, face the most immediate material consequences. They are mentioned only in passing and have no voice in the debate, despite being the most economically vulnerable.
Wild pollinators and broader biodiversity	The debate focuses on honeybees and almonds, but wild pollinators, other insects, birds, and the wider ecosystem are affected. Teresa's plan is the only proposal that partially addresses this broader ecological dimension.

Step 3: Analysing the Options

Option A: Accept the AgriDrone Proposal

Expected benefits	Risks and costs
Immediate pollination for the 2025 almond blossom. Preservation of the harvest, the Festival, and the Slow Food Presidium. No direct financial cost to the community (€50,000 offered to the Consortium). Access to cutting-edge technology and international visibility. Time gained to develop longer-term solutions.	Technological dependency on a private company backed by agrochemical interests (Syngenta). Moral hazard: reduced incentive to address root causes (pesticides, monoculture). Loss of the "natural" character of the product—risk to Slow Food Presidium certification. Pollination limited to almonds only; wild flora and broader biodiversity ignored. Potential normalisation: temporary solution becomes permanent. Community division deepens.
Who benefits?	**Who pays the costs?**
Almond producers (especially Marco Visintin). AgriDrone/Elena Nordio (pilot site data and credibility). Syngenta-linked investors. Tourism operators (Festival saved in the short term). Processing workshop employees (jobs preserved).	Beekeepers (profession rendered irrelevant; traditional knowledge devalued). The bees (no action taken to save them). Future generations (inheriting a technology-dependent system). The community's collective identity and autonomy. Wild pollinators and the broader ecosystem.

Option B: Teresa's Ecological Plan

Expected benefits	Risks and costs
Addresses root causes of bee decline (pesticides, habitat loss). Restores biodiversity broadly, not just almond pollination. Builds community autonomy and resilience. Backed by scientific institutions (University of Udine, ISPRA). Compatible with Slow Food values and organic certification. Creates ecological corridors benefiting the entire ecosystem.	Results are not guaranteed and will take 3-5 years minimum. Costs €800,000 over 5 years; only half covered by EU funds. The valley may lose 2-3 almond harvests in the interim. Marco and other producers may go bankrupt before results materialise. The Festival could collapse in the meantime. Requires voluntary cooperation from vineyard owners on the plain (who are not part of the community). Politically difficult: asks people to accept short-term sacrifice for uncertain long-term gain.
Who benefits?	**Who pays the costs?**
Beekeepers (profession and knowledge valued).	Almond producers (immediate economic losses).

The ecosystem and biodiversity. Future generations. The community's collective identity. Small-scale agriculture model. Wild pollinators.	Processing workshop employees (job risk during transition). Tourism operators (Festival at risk for several years). Municipalities (must co-finance with limited budgets). The Consortium (financial contribution required).

Option C: Do Nothing / Wait

Possible benefits	Risks and costs
Avoids an immediate divisive decision. Allows more time for research and data collection. Bees might partially recover on their own (though unlikely given trends). Maintains community cohesion in the short term. Preserves the option to decide later with better information.	Almost certainly leads to economic collapse: another failed harvest, Marco's bankruptcy, workshop closures, Festival cancellation. AgriDrone moves to Emilia-Romagna—the offer is lost permanently. Bee decline continues unaddressed. Young people leave definitively. Demographic decline accelerates. The "decision" becomes irreversible through inaction. The mayor loses political credibility.

Option D: A Compromise / Alternative

Formulate an alternative or compromise
A possible Option D would combine elements of Options A and B in a structured, conditional framework: 1. Accept Elena's last-minute compromise: drone experimentation on HALF the orchards (voluntary participation only), for ONE season (2025), with strict conditions. 2. Conditions on AgriDrone: full data transparency, independent scientific monitoring (University of Udine), community veto on renewal, and no exclusivity clause. Require disclosure of all investor interests. 3. Simultaneously launch Teresa's ecological plan: use the €50,000 from AgriDrone plus municipal funds as seed money to begin ecological corridor construction, pollinator habitat restoration, and the voluntary pesticide ban. 4. Create a Community Monitoring Committee including representatives of all stakeholders (producers, beekeepers, biologist, young people, Pro Loco), to evaluate results after one year and decide on continuation. 5. Lobby the Region for stricter enforcement of pesticide regulations on the plain and for full funding of the ecological plan.

This compromise buys time economically while beginning systemic change. Its weakness is that it may satisfy nobody fully, it legitimises the drone technology, and it requires extraordinary institutional coordination. It also does not resolve the fundamental tension between technological solutionism and ecological restoration—it merely defers it.

5.2 The Mayor's Dilemma

The dilemma is:
Marta must choose between saving the valley's economy now (accepting a solution that may undermine its ecological and cultural foundations in the long term) and protecting the valley's ecological and cultural integrity (pursuing a plan that may come too late to prevent economic collapse). There is no option that avoids losses: every choice involves sacrificing something valuable.

On one hand:	**On the other hand:**
Immediate action (drones) saves livelihoods, jobs, and the Festival. People are suffering now—Marco, his employees, tourism operators. A mayor has a democratic responsibility to the present community. Waiting for a "pure" solution while people go bankrupt is a luxury of those who do not face the consequences. Moreover, technology is not inherently bad; it can be a bridge while longer-term solutions develop.	Accepting the drones means accepting the logic that created the problem: the same industrial-technological system that killed the bees now offers to replace them. It means ceding community autonomy to a private company with corporate interests. It means telling Silvano and the beekeepers that their knowledge, their way of life, and their relationship with the living world are obsolete. It risks normalising technological substitution of natural processes and permanently reducing incentives to address root causes. It means choosing short-term economic survival over long-term ecological and cultural integrity.