The Paradoxes of Climate-Smart Coffee: A Teaching Note on Governing Climate Resilience Across the Global Coffee Value Chain

Authors: Jespersen, Kristjan[1]; Nagar, Urvashi[2]; Grabs, Janina[2,6]; Gallemore, Caleb[3]; Berecha Yadessa, Gezahegn[4]; Castellón Durán, Marc[6]; Eneyew Bekele, Adugna[4]; Garedew Terefe, Weyessa[4]; Gure Lemessa, Shitaye[4]; Hailemariam Mamo, Marta[4]; Kasongi, Ng'winamila D.[5]; Mamuye Kebede, Melkamu[4]; Mathe, Annkathrin[1]; Mwalutolo, Daniel A.[5]; Niehues, Ina[1]; Noe, Christine[5]; Ponte, Stefano[1]; Regasa Megerssa, Guta[4]; Silvano, Pilly[5]; Terry, Suyana[1]; & Yamungu, Nestory[5].

[1] CBS Business School; [2] University of Basel; [3] Lafayette College; [4] Jimma University; [5] University of Dar es Salaam; [6] ESADE Business School

PACSMAC

This teaching note was prepared as part of the PACSMAC research project for educational purposes. Visit https://pacsmac.com/home/ for more information about the research project and its outputs.

Subject Area	Global Supply Chains, Climate Change Governance, Sustainable Development
Case Series	PACSMAC Cases 1, 2a, 2b, 3, 4a, 4b
Course Level	Graduate (MBA, MPP, MSc), Advanced Undergraduate
Suggested Timing	Single 90-minute session (condensed) or two 75-minute sessions (full)
Preparation Time	Students: 90 minutes reading. Instructor: 45 minutes preparation
Pedagogical Method	Case discussion, multi-stakeholder simulation, role-play negotiation

Overview

This teaching note accompanies the PACSMAC case series, which examines how different actors across the global coffee value chain navigate the paradoxes embedded in climate-smart agriculture. Each of the six case vignettes places a fictional but empirically grounded protagonist at a decision crossroads, drawing on field research conducted across Ethiopia and Tanzania involving 385 qualitative interviews with farmers, cooperatives, government officials, NGO practitioners, and private sector actors.

The cases are united by a shared analytical tension: the gap between what donors, corporations, and governments call 'climate-smart' and what farmers actually need to adapt and survive. Students are asked to reason across scales - from the smallholder to the multinational roaster - and across geographies, comparing Ethiopia's relatively more suitability-stable context with Tanzania's more urgent climate trajectory.

The case series culminates in a multi-stakeholder simulation exercise, the East African Coffee Climate Action Forum, in which student groups representing each actor negotiate a joint regional climate action plan and allocate a hypothetical fund of US$50 million.

Learning Objectives

Upon successful completion of this case series and simulation, students should be able to:

- Identify and critically assess the paradoxes embedded in climate-smart agriculture frameworks, particularly the tension between mitigation (measurable, marketable) and adaptation (farmer-centric, context-specific).
- Analyse how power asymmetries in global agricultural value chains shape whose definition of 'climate resilience' prevails and who bears the cost of climate action.

- Apply global value chain (GVC) theory to understand why national policies, international certification schemes, donor programmes, and cooperative strategies often work at cross-purposes.
- Evaluate trade-offs between short-term livelihood security and long-term climate risk management from the perspective of actors operating at different points in the value chain.
- Compare the Ethiopian and Tanzanian coffee sectors as contrasting cases of climate vulnerability, institutional capacity, and adaptation trajectory.
- Practise stakeholder negotiation and develop the ability to represent interests that may differ from their own values, building empathy for structural constraints facing different actors.

Deciding How to Teach the Cases

This case series works best when students have prior exposure to at least one of the following bodies of knowledge:

- Global value chain theory (Gereffi& Fernandez-Stark, 2016) - to understand buyer-drivenness and governance typologies
- Climate-smart agriculture debates - including critiques of the FAO CSA framework and the mitigation-adaptation trade-off
- Institutional theory and the organisational paradox - as theoretical lenses for interpreting actor behaviour
- Development and/or environmental economics - particularly payments for ecosystem services, smallholder market integration, and certification economics

The case series pairs well with the following teaching contexts:

- Week-long module on sustainable supply chains (cases 1-4 used across multiple sessions)
- Single intensive session using one or two vignettes and the simulation
- As a capstone exercise after covering climate governance, CSR, or development policy

Step 1: Determine Your Time Budget

Before selecting a format, confirm how many teaching sessions you have available for this material. The answer to this single question narrows the realistic options considerably.

Time Available	Recommended Format	Cases Used	Primary Learning Outcome
1 x 90-minute session	Format A: Single Case Focus	1 case + abbreviated simulation	Deep actor analysis and decision-making under constraint
2 x 75-minute sessions	Format B: Paired Comparison	2-3 cases + full simulation	Cross-actor comparison and power dynamics
3-4 x 75-minute sessions	Format C: Thematic Arc	4-5 cases + full simulation	Multi-level governance, value chain justice, policy coherence
5-6 x 75-minute sessions	Format D: Full Series	All 6 cases + full simulation + assessment	Full integration: theory, negotiation, written assessment

Step 2: Select a Format

Use the following decision tree to select your format. Work through each question in order and stop at the first path that fits your context.

QUESTION 1: Do you have more than one session to dedicate to this material? NO : Format A: Single Case Focus. Choose one case aligned to your course theme (see selector table below). YES : Continue to Question 2.
QUESTION 2: Is your primary learning goal comparative analysis (Ethiopia vs. Tanzania, or buyer vs. producer)? YES : Format B: Paired Comparison. Use Cases 2a+2b or 4a+4b as your anchor pair. NO : Continue to Question 3.
QUESTION 3: Is your primary goal multi-level governance and power across the value chain? YES : Format C: Thematic Arc. Build a value chain arc from Case 1 (roaster) through Cases 3 and 4a/4b (NGO and cooperatives). NO : Continue to Question 4.
QUESTION 4: Do you have 5 or more sessions and want to integrate graded assessment with the teaching arc? YES : Format D: Full Series. Run all six cases sequentially, culminating in the simulation and a graded assignment. NO : Return to Format C or Format B based on sessions available.

Format A: Single Case Focus (1 session, 75-90 minutes)

This format is appropriate when the case series is used as a single class illustration within a broader course, when time is constrained, or when the instructor wants to introduce one actor's perspective in depth before assigning further reading or a written assignment.

How to Select the Right Case for Format A

The case you select should be the one whose actor most closely maps to the central theme of your course at the point in the syllabus where this case is inserted. Use the following selector:

If your course is focused on…	Use this case
Corporate ESG and sustainable sourcing	Case 1: NordRoast AG - the buyer-driven logic and greenwashing risk are immediately accessible to business students
Agricultural policy and food systems governance	Case 2a or 2b: ECTA or TCB - the national authority cases raise canonical questions about policy lock-in and climate risk
International development and donor accountability	Case 3: GreenFutures International - the NGO case is the most normatively rich and works well in development-focused programmes
Cooperative economics and smallholder livelihoods	Case 4a or 4b: Goma or Mbinga Cooperative - ideal for courses on rural development, cooperative governance, or microeconomics of adaptation
Comparative political economy of climate change	Cases 2a + 2b as a pair - the Ethiopia/Tanzania contrast is the most analytically productive single comparison in the series

Format A Session Plan (90 minutes)

Time	Activity	Instructor Action
0-10 min	Scene setting	Brief the room on the PACSMAC project, the research base, and the fictional composite characters. Clarify that characters are empirically grounded but not real individuals.

10-25 min	Small group analysis	Groups of 3-4 students discuss which option the protagonist should choose and why. Each group must nominate a devil's advocate who argues against the majority view.
25-55 min	Full class discussion	Use the case-specific discussion prompts from this teaching note. Build toward the case's central tension rather than resolving it. Invite dissent; the goal is productive discomfort, not consensus.
55-80 min	Abbreviated simulation	Assign students one of the six actor roles and give them 5 minutes to formulate their position on the fund allocation question (US$50M). Run a 20-minute negotiation. This is a compressed simulation - it surfaces the essential tension without full role preparation.
80-90 min	Debrief and synthesis	Use 3-4 of the debrief questions from the Simulation Guide. Close with the theoretical framework most relevant to your course (paradox theory, GVC, Hirschman).

Instructor Note: If running Format A with only 75 minutes, compress the small group analysis to 10 minutes and drop the abbreviated simulation entirely. Use the saved time to extend the full class discussion. The discussion is the pedagogy - the simulation is a bonus in this format.

Format B: Paired Comparison (2 sessions, 75 minutes each)

Format B is the most analytically productive format for courses where comparative methodology is a core skill. By pairing two cases, students develop the capacity to hold two institutional logics in mind simultaneously and reason about structural differences rather than treating each actor in isolation.

Recommended Case Pairings

Pairing	Rationale and Best Fit

Cases 2a + 2b (ECTA + TCB): The Geographic Pair	The strongest analytical pairing in the series. Ethiopia and Tanzania represent genuinely different climate trajectories, institutional capacities, and policy constraints. Use this pairing for courses focused on comparative political economy, agricultural policy, or climate vulnerability.
Cases 4a + 4b (Goma + Mbinga): The Cooperative Pair	Best for courses on rural development, cooperative economics, or smallholder livelihoods. The contrast between a relatively optimistic Ethiopian suitability outlook and an urgent Tanzanian climate trajectory maps onto different strategic logics for cooperative governance.
Cases 1 + 3 (NordRoast + GreenFutures): The Intermediary Pair	Best for courses on CSR, development finance, or NGO accountability. These two cases share a structural position: both are external actors who claim to act on behalf of farmers but whose institutional incentives may diverge from farmer interests.
Cases 1 + 4a or 4b (Roaster + Cooperative): The Chain Pair	The most direct articulation of buyer-producer power asymmetry in the series. Use this pairing for global value chain courses where the goal is to make the cost-externalisation dynamic visceral.

Format B Session Plan

Session 1 (75 minutes): Teach each case in the pair sequentially. Spend approximately 30 minutes on each case using the discussion prompts in this note. Reserve 15 minutes at the end to draw out the first-order comparison: How do the two actors' mandates, constraints, and definitions of 'climate resilience' differ?

Session 2 (75 minutes): Open with a 10-minute briefing for an abbreviated simulation. Assign all six actor roles and run only Forum Agenda Items 1-2 (definition of climate resilience and fund allocation), reserving the full four-item Forum for a format with more preparation time. Follow the abbreviated simulation with a 15-minute in-class reflection: ask students to discuss how the two actors they studied interact with one another within the broader GVC. and how the structural position of each actor shapes and constrains their strategy. Students who studied the pair in depth will find their actor's interests become legible in a new way once they are in the room with all the others.

Instructor Note: In Format B, students may develop a strong identification with their paired case characters. This is pedagogically useful - it deepens their preparation for the simulation - but instructors should be prepared for students to enter the Forum exercise with fixed positions. Build in a 5-minute in-character preparation exercise at the start of Session 2 where each group writes down their 'red lines' before negotiation begins.

Format C: Thematic Arc (3-4 sessions, 75 minutes each)

Format C is appropriate for a dedicated module of 3-4 sessions within a larger course, or for a standalone short course on sustainable value chains or climate governance. It allows the instructor to build a narrative arc across multiple sessions, using each case to introduce a new analytical lens before the simulation brings all perspectives into contact.

Recommended Thematic Arc Sequences

Select one of the following three arc designs based on the core theoretical emphasis of your course:

Session	Arc 1: Value Chain Power	Arc 2: Governance Scales	Arc 3: Farmer Centricity (inverted sequence)
Session 1	Case 1 (NordRoast)	Cases 2a+2b (ECTA + TCB)	Cases 4a+4b (Goma + Mbinga Cooperatives) - start at ground level
Session 2	Cases 2a+2b (ECTA + TCB)	Case 3 (GreenFutures)	Case 3 (GreenFutures) - donor vs. farmer tension
Session 3	Case 3 + Cases 4a or 4b	Cases 4a+4b (Cooperatives)	Case 1 (NordRoast) - what does the chain look like from the bottom?

Instructor Note (Format C - Role Coverage): By Session 4, most actor roles will already have been studied across prior sessions. For any roles not yet covered in the arc, the instructor is recommended to take on those remaining roles during the Forum simulation. This ensures every student group negotiates as an actor they have researched in depth, maximising the quality of preparation and the pedagogical value of the simulation.

Instructor Note: In Arc 3 (Farmer Centricity), deliberately invert the conventional value chain teaching sequence by starting at the cooperative level (Cases 4a+4b) and working upward. This forces students to understand the structural position of cooperatives before they encounter the buyer-driven logic of NordRoast in Session 3, which makes the power asymmetry visceral rather than abstract.

Inter-Session Preparation for Format C

Format C works best when each session ends with a bridging question that prepares students for the next case. Suggested bridging questions:

After Session 1 (any arc): 'The actor you studied today has a preferred definition of climate resilience. Write down that definition in one sentence. In the next session, you will encounter an actor whose definition may be structurally incompatible with theirs. Why might that be?'

After Session 2: 'Identify one decision made by today's actor that directly constrains the options available to another actor in the chain. Be specific about the mechanism of constraint.'

After Session 3: 'You will enter the simulation next session. What is the one thing your actor cannot concede without betraying their mandate? Write it down and bring it to class.'

Format D: Full Series (5-6 sessions, 75 minutes each)

Format D is designed for a dedicated module or short course. It provides the richest learning experience and allows the instructor to integrate formal assessment with the teaching arc. All six cases are taught, the simulation runs at full scale, and students complete one of the assessment options described later in this teaching note.

Recommended Full-Series Session Sequence

Session	Content and Instructor Focus
Session 1: The Cooperative	Cases 4a + 4b - Goma and Mbinga. Begin at ground level with the actors closest to the land. Introduce Hirschman's Exit-Voice-Loyalty. End with the question: 'What would it take for farmers to choose voice over exit and who in the chain needs to change for that to be possible?' Issue the simulation position brief as the bridge to Session 5.

Session 2: The Buyer	Case 1 - NordRoast AG. Establish the buyer-driven logic of the chain. Introduces the concept of cost externalisation. Students now view this through the cooperative lens from Session1: ask ‘How does what you learned from Goma and Mbinga change how you read NordRoast’s strategy?´
Session 3: The State	Cases 2a + 2b - ECTA and TCB. Introduce the comparative framework. Use the Ethiopia/Tanzania contrast to establish that climate vulnerability is not uniform and that policy cannot be generic. Bridge to cooperatives with the question: 'What do the national strategies assume about farmer behaviour?'
Session 4: The Intermediary	Case 3 - GreenFutures International. The NGO case sits at the intersection of the global (donor mandates) and the local (farmer needs). Introduce epistemic injustice as a framework. Bridge to cooperatives: 'If you were a cooperative leader, what would you want GreenFutures to do differently?'
Session 5: The Forum	Full simulation - East African Coffee Climate Action Forum. Assign roles one week in advance. Run the full Forum using the four-agenda sequence in the Simulation Guide. Reserve 25 minutes for debrief.
Session 6: Integration (optional)	Synthesis session using student position papers or reflections submitted after Session 5. Walk through the theoretical frameworks as analytical lenses on what the simulation revealed. Brief students on the graded assessment if not yet submitted.

Instructor Note: In Format D, the quality of Session 5 (the simulation) is directly dependent on how well students have prepared their position briefs after Session 4. Make the brief a graded low-stakes deliverable to ensure all groups arrive prepared. An underprepared group degrades the experience for all other groups. This assignment functions as the graded pre-simulation position brief described in the Format D Instructor Note. For Format D, Assessment Option A is strongly recommended rather than optional: the quality of the Forum simulation is directly dependent on the quality of student preparation, and graded submission ensures all groups arrive ready to negotiate.

Managing Continuity Across Sessions in Format D

The most common failure mode in Format D is that each session feels self-contained rather than cumulative. Practical techniques for building continuity:

Open each session from Session 2 onward with a 'thread pull' - choose one argument from the previous session and ask: 'Now that you have read today's case, how does this argument look different?'

Maintain a shared actor map visible in the room (whiteboard or projected table) that tracks each actor's preferred definition of 'climate resilience,' their cost-bearing willingness, and their red lines. Update it each session.

Key Theoretical Frameworks

Instructors may wish to foreground one or more of the following theoretical lenses depending on the course context. Each framework generates a distinct set of analytical questions.

Organisational Paradox Theory

The PACSMAC cases are explicitly built around paradoxes - situations where two simultaneously valid but contradictory demands create ongoing tension that cannot be fully resolved (Smith & Lewis, 2011; Lewis, 2000). Key paradoxes include:
Mitigation vs. adaptation: Investing in carbon sequestration (mitigation) may divert resources from the drought-resistant variety adoption (adaptation) that farmers actually need.
Sectoral resilience vs. livelihood resilience: Keeping coffee production volumes high may maintain foreign exchange earnings for governments while trapping farmers in a declining system.
Short-term income vs. long-term viability: Farmer diversification into khat or eucalyptus may be rational in the short term but accelerates the erosion of the coffee sector.

Students should be encouraged to move beyond seeking a 'best' solution. The pedagogical goal is to understand how actors manage paradox rather than eliminate it.

Exit, Voice, and Loyalty (Hirschman)

Hirschman's framework provides a powerful lens for the cooperative cases (4a and 4b) and the NGO case (3). When farmers face deteriorating conditions, they can opt for:

- **Exit:** Abandon coffee for other crops or livelihoods (what many Tanzanian youth are already doing).
- **Voice:** Engage with cooperatives, government, or donors to demand better conditions.
- **Loyalty:** Continue producing coffee despite hardship, often due to lack of alternatives or cultural attachment.

The cases illustrate that loyalty is often structurally induced (by trader credit dependency, lack of market alternatives, or certification lock-in) rather than freely chosen. Exit by young people from the sector should be read as a structural signal, not an individual failing.

Institutional Work and Epistemic Injustice

Institutional Work (Lawrence & Suddaby, 2006) refers to the purposeful actions by which actors create, maintain, or disrupt the institutions that structure their field. In the PACSMAC cases, actors such as GreenFutures and ECTA are engaged in maintenance work which sustains the legitimacy of climate-smart frameworks, even as those frameworks may not serve farmer interests. Students should consider: what institutional work is being performed, by whom, and in whose interest? (Lawrence & Suddaby, 2006). Institutions and Institutional Work. In S. Clegg et al. (Eds.), The Sage Handbook of Organization Studies. Sage to the references.)

The NGO and national authority cases raise questions about whose knowledge counts in climate governance. Students should consider:

How donor-defined metrics of 'climate-smart' performance systematically marginalise farmer-generated knowledge.
How scientific uncertainty about suitability projections is handled differently by actors with different levels of institutional power.

Whether indigenous agroforestry practices are valorised or undermined by certification and technical assistance programmes.

The concept of epistemic injustice (Fricker) -- the structural silencing of certain forms of knowledge -- gives students a critical vocabulary to assess programme design.

Global Value Chain Governance

Students should map the power relationships in the coffee value chain before beginning the simulation. Key questions:

- Who captures value and at which node?
- How do buyer-driven standards (certification, net-zero commitments) reach back into farming communities?
- What are the structural conditions that prevent cooperatives from achieving financial independence?

Case-by-Case Teaching Guidance

Case 1: NordRoast AG - The Global Coffee Roaster

Character: Sarah Hoffmann, Head of Sustainable Sourcing, NordRoast AG

Opening the Discussion

Begin by grounding students in Sarah's institutional position. She faces pressure from three directions simultaneously: investors demanding ESG performance, retailers demanding supply chain transparency, and NGOs scrutinising for greenwashing. Ask students: 'Who is Sarah accountable to - and why?'

> **Instructor Note:** This case works well as an opening case for the full series because it establishes the buyer-driven logic of the value chain. Students playing this role in the simulation may be tempted to default to sustainability rhetoric without engaging with cost distribution. Push them early to specify who pays.

Option A: Net-Zero Strategy

The case intentionally raises the risk of greenwashing. Draw students' attention to the finding from Grabs et al. (2026b) that corporate mitigation investments often serve financial and branding incentives more than farmer needs. Useful questions:

- What would a carbon insetting project actually look like on the ground for a farmer in Jimma, Ethiopia?
- Who certifies the carbon credits? Who captures the financial value of those credits?
- Is this an adaptation measure for farmers, or a compliance mechanism for NordRoast?

Option B: Coalition Membership

The collective action problem is central here. Coalitions can generate shared standards and data, but they also create opportunities for free-riding and lowest-common-denominator outcomes. Invite students to consider:

- Under what conditions could industry collaboration produce genuine progress vs. industry capture of the agenda?
- What is the difference between joining the Global Coffee Platform as a signalling device versus using it as an operational governance mechanism?

Option C: Mandating Certification

This option is deliberately the most operationally legible but ethically most complex. Rainforest Alliance certification is a buyer-driven standard whose compliance costs fall disproportionately on smallholders. If NordRoast mandates certification, it effectively externalises its climate governance costs onto the weakest actors in the chain, unless there is an effort to actively compensate growers for those costs.

- Is there a version of the certification mandate that NordRoast could design that does not reproduce this asymmetry?

- What would it mean to make NordRoast co-responsible for certification costs?

Case 2a: Ethiopian Coffee and Tea Authority - National Policy

Character: Dr. Tigist Alemu, Director of Climate Resilience, ECTA

Opening the Discussion

Ethiopia is the birthplace of Arabica coffee and the country's cultural, economic, and political identity is deeply bound to it. Begin with this weight: 'What does it mean to be the custodian of a crop that is slowly losing its climate niche in many of the regions where it has been grown for centuries?'

> **Instructor Note:** Students may advocate firmly for 'Option A: Double Down on Coffee' because Ethiopia's comparative advantage seems obvious. The instructor's task is to complicate this by surfacing the geographic differentiation within Ethiopia -- not all regions face the same trajectory, and policy cannot treat Ethiopia as homogeneous.

Option A: The Geography of Vulnerability

Draw attention to the finding from Regasa Megerssa et al. (2025a) that production is shifting geographically - lowlands becoming less suitable while highlands face population and land tenure pressure. Ask:

- If climate suitability is shifting upward in altitude, who owns the land at higher elevations? Is migration of coffee cultivation even practically possible?
- If the geographic distribution of suitable coffee-growing land is itself shifting. Moving upward in altitude and northward in some projections, what should a national coffee strategy actually optimize for: protecting current production zones, investing in projected future zones, or securing farmer welfare regardless of what crop they grow?

Option B: Diversification

Students should be pushed to disaggregate 'diversification.' The evidence from Megerssa et al. (2025a) suggests that farmers are already diversifying - into khat and eucalyptus - meaning that policy may need to follow farmer behaviour rather than lead it. Ask:

- Is there a risk that a government diversification programme imposes a new set of external priorities on farmers who have already identified their own adaptation strategies?
- What does 'supporting diversification without abandoning coffee' actually require institutionally?

Case 2b: Tanzania Coffee Board - National Policy

Character: James Mwenda, Head of Climate and Sustainability, TCB

Contrasting Ethiopia with Tanzania
This case would be most powerful when taught in sequence with Case 2a. The contrast is structural: Ethiopia has more climate-stable highland regions that can absorb some shifting of production, while Tanzania faces a trajectory in which even its current growth regions (Mbinga) are projected to deteriorate beyond 2040. This is not a symmetric situation.

> **Instructor Note:** A productive classroom exercise might be to ask students: 'If you were advising both Tigist Alemu and James Mwenda, would your advice be the same? Why or why not?' This surfaces the limits of generic 'climate-smart' frameworks that do not account for country-specific trajectories.

The CIDS Targets Problem
Tanzania's Coffee Industry Development Strategy 2021-2025 contains production targets (68,000 to 300,000 MT) that are widely recognised as unrealistic. This is a useful entry point for a broader discussion of the political economy of agricultural policy:

- Why do governments set targets they cannot meet? What political functions do aspirational targets serve?
- When evidence shows targets are unrealistic, what is the responsible policy response - revise downward publicly, or maintain targets while adjusting quietly?

Option C: Climate-Informed Sector Planning

This option is analytically the most sophisticated but politically the most difficult. Using methods like those in Kasongi et al. (2024) to produce district-level suitability maps and phase investment accordingly means explicitly signalling to farmers in declining regions that state support is being redirected. Ask:

- Is it ethical for a state to withdraw support from regions facing climate deterioration? What obligations does the state have to farmers in those regions?
- What political coalition would need to form to make Option C viable?

Case 3: GreenFutures International - The Development NGO

Character: Elena Marchetti, Programme Director, GreenFutures International

Opening the Discussion

The NGO case is the most explicitly normative of the six. Elena faces a choice that goes beyond strategy: it is a choice about who the organisation exists to serve. Open with a direct question: 'Is GreenFutures' primary accountability to its farmers, its donors, or to its own institutional survival?'

Dilemma A: Mitigation vs. Adaptation

The core tension is between what is measurable and marketable (mitigation, carbon footprinting, net-zero alignment) and what farmers actually need (drought management,

income diversification, pest pressure management). This is the central PACSMAC paradox in concentrated form.

- Given evidence from Grabs et al. (2026a) that farmer-prioritised adaptations are often already underway, what is the NGO's marginal contribution?
- Is there a risk that GreenFutures' technical assistance programme adds transaction costs rather than value to farmer adaptation?
- What would a genuinely farmer-centric programme design process look like - and would donors fund it?

Dilemma B: Institutional Survival vs. Farmer Accountability

GreenFutures depends on continued donor funding to operate. This creates a structural incentive to frame programme outcomes in ways that satisfy donor metrics even when those metrics do not align with farmer-defined needs. Elena must decide how transparent to be with donors about the gap between reported outcomes and actual farmer welfare.

- Under what conditions is it justifiable for an NGO to accept donor funds for a programme it believes is suboptimal from a farmer perspective?
- What would 'radical transparency' with donors look like in practice? What are the institutional risks — and what is the moral cost of not attempting it?
- Is there a version of GreenFutures' programme that satisfies donor climate requirements and centres farmer-defined resilience? Or are these structurally incompatible?

Dilemma C: Avoiding Greenwashing by Programme Design

The concept of 'greenwashing by programme design' - interventions that score well on donor metrics but do not build transformative farmer capacity - is a sophisticated critique that invites students to interrogate standard programme evaluation tools.

- What is the difference between a programme that increases a farmer's climate resilience score and one that increases a farmer's actual resilience?
- Should GreenFutures adopt the Grabs et al. (2026a) three-level resilience framework (sectoral, livelihood, community) as an evaluation criterion, even if donors do not require it?

> **Instructor Note:** Students in development-focused programmes may find this case the most personally engaging. Instructors should be prepared for strong views about NGO accountability. The goal is not to condemn the NGO model but to identify the specific institutional pressures that produce misalignment between intent and outcome.

Case 4a: Goma Cooperative Union - Ethiopian Cooperative

Character: Dawit Bekele, Manager, Goma Farmers' Cooperative Union, Jimma Zone

Opening the Discussion

The cooperative cases shift the discussion to the organisational scale closest to farmers. Dawit's dilemma is immediate and practical: how to serve a divided membership, process contradictory advice from multiple external actors, and operate under genuine climate uncertainty.

Dilemma A: The Role and Limits of Cooperatives

Students should understand that cooperatives in this context are simultaneously:

- Aggregators of smallholder supply (functional, commercial)
- Governance actors making collective decisions about member welfare
- Interpreters and translators of external information (scientific, market, regulatory)

Ask:

- When members disagree about whether to diversify or stay in coffee, what is Dawit's legitimate role?
- Should the cooperative lead, follow, or facilitate?

Dilemma B: Communicating Uncertainty

The evidence from Mamuye et al. (2025) suggests most areas in Goma should remain suitable into the 2090s but with significant uncertainty bounds. This creates a pedagogically rich scenario: how do you communicate probabilistic risk to members who need to make irreversible decisions (planting trees, building washing stations) with 30-year horizons?

- Is it more responsible to share uncertain projections or to act on them without burdening members with uncertainty they cannot act on?
- What is the cooperative's liability if it communicates 'probably suitable' and the projection proves wrong?

Case 4b: Mbinga Cooperative - Tanzanian Cooperative

Character: Fatuma Mwalimu, Chairperson, Mbinga Highland Growers' Cooperative

Opening the Discussion

Case 4b is structurally more urgent than 4a. While Dawit's cooperative operates in a relatively stable Ethiopian suitability zone, Fatuma's cooperative faces dramatic suitability declines across all elevation zones. The climate signal is clearer; the strategic options are more constrained.

Dilemma A: Exit as Rational Behaviour

The observation that young people are already leaving Mbinga coffee for motorbike transport and small businesses should be framed not as a crisis but as a rational response to structural signals. Using Hirschman's framework:

- Youth exit is not disloyalty – it is a rational response to deteriorating returns in a sector where voice has not produced change.
- The question for Fatuma is whether the cooperative can make voice - collective demand for better conditions – more attractive than exit.

- If not, what is the cooperative's responsibility in managing decline rather than pretending it is not happening?

Dilemma B: Trader Credit Dependency

The AMCO dependency on trader credit is a structural constraint that limits almost every adaptation option available to the cooperative. Students should understand this is not a governance failure of individual cooperatives – it is a systemic feature of how coffee financing is structured in Tanzania.

- What would it take to restructure cooperative finance so that traders are not the de facto lenders of last resort?
- What role could a national development bank, a donor facility, or a blended finance mechanism play?

Simulation Facilitation Guide

The East African Coffee Climate Action Forum simulation is the pedagogical centrepiece of the PACSMAC case series. It is designed to surface the structural tensions that the individual case discussions identify, now playing out in real time as students negotiate across competing institutional interests.

Use the following checklist to confirm readiness before each session regardless of format. Items marked (ALL) apply to every format.

One Month Before

- Read the full case vignette(s) for the session. Note which option most closely mirrors a real-world decision your students will likely face in their careers - this is your anchor for relevance.
- Read the case-specific guidance in this teaching note for each vignette you will use. Mark 2-3 discussion questions to prioritise and 1-2 to hold in reserve.
- Select the primary theoretical framework for the session. Do not try to deploy all four frameworks - choose one primary lens and introduce a second only if time allows.
- (B, C, D) Confirm student preparation requirements and distribute bridging questions or role assignments as appropriate.
- (D) Issue the graded position brief assignment with clear instructions about role assignment, page length, and submission deadline before Session 5.

One Week Before

- Prepare a 3-5 minute opening provocation - a current news item, a commodity price chart, or a short clip - that grounds the fictional case in observable reality.
- (B, C, D with simulation) Confirm group assignments. Each of the six actor roles should be assigned to a group of 2-4 students.
- (ALL with simulation) Prepare the four Forum agenda items on a slide or whiteboard card so they are visible throughout the negotiation.

Assign each student group their actor role. Groups should prepare a 2-page brief covering:

- The actor's primary mandate and institutional interests
- Their preferred outcome for each of the four Forum agenda items
- Their 'red lines' - positions they cannot compromise without undermining their actor's core mandate
- Their most likely coalition partner and their most likely adversary

Forum Agenda

The simulation runs four sequential agenda items. Instructors should time-box each to prevent any single item from consuming the session:

Agenda Item	Suggested Time
1. Agree on a shared definition of 'climate resilience'	10 minutes
2. Allocate US$50 million across adaptation and mitigation	15 minutes
3. Assign cost-bearing responsibility across value chain actors	15 minutes
4. Draft a joint communique committing to specific actions	15 minutes
5. Debrief discussion	20 minutes

Instructor Note: The fund allocation exercise (Item 2) is the most revealing part of the simulation. Watch for coalitions forming around shared interests (roaster + NGO on mitigation metrics; cooperatives + national authorities on adaptation). These coalitions may then fracture under Item 3 when cost allocation becomes explicit.

Surfacing Pedagogically Useful Tensions

Tension 1: NordRoast vs. Cooperatives

NordRoast benefits from cheap certification labour (on-farm compliance costs) while cooperatives bear those costs. Ask NordRoast directly, 'How much of NordRoast's supply chain budget are you willing to redirect to cover certification costs for the Goma and Mbinga cooperatives?' Force them to put a number on solidarity.

Tension 2: National Authorities vs. the NGO

Both ECTA and TCB have national production targets embedded in government strategy. GreenFutures more farmer-centric, diversification-supporting framing can appear to threaten those targets. Ask ECTA and TCB, 'If your best farmers diversify away from coffee, is that a policy failure or a policy success?' The discomfort with this question could be productive.

Tension 3: Ethiopia vs. Tanzania Cooperatives
The two cooperative cases have genuinely different climate trajectories. Goma (Ethiopia) has a more optimistic suitability outlook than Mbinga (Tanzania). This means they have different

urgency and should have different interests in the Forum. In the simulation, Mbinga may push for significant adaptation investment while Goma may prefer the status quo - an unusual alliance structure that cuts across geographic lines. Highlight this divergence explicitly and ask, 'How can you best message to external sources of support what you need, when your needs may be divergent?'

Debrief Questions

Reserve at minimum 20 minutes for debrief. The following questions move from surface-level observation to theoretical integration:

- Whose interests dominated the negotiation and why? How representative is this likely to be of what would happen in a real-world context?
- Was a genuinely farmer-centric outcome achievable? What would have needed to be different - in the room, or in the structural conditions - for farmers to have had more influence?
- How did different actors define 'climate resilience' and did these definitions converge or diverge over the course of the simulation?
- What does this simulation reveal about real-world climate governance in agricultural value chains? Where are the gaps between formal commitment and actual farmer welfare?

Assessment Suggestions

Option A: Stakeholder Position Paper (Individual, 1,500 words)

Assign students a specific actor role and ask them to write a pre-Forum position paper. The paper should articulate: (1) the actor's core interests and mandate, (2) their preferred outcomes for each agenda item, (3) the theoretical paradoxes they face, and (4) a reflective note on how their personal values relate to the position they are asked to defend.

Option B: Post-Simulation Critical Reflection (Individual, 1,200 words)

After the simulation, students write a reflective piece asking: Was the negotiation outcome defensible? Which theoretical framework (paradox theory, GVC governance, Hirschman) best explains what you observed? What would a farmer watching from the back of the room have thought about what was decided?

Option C: Comparative Policy Analysis (Group, 3,000 words)

Groups compare Ethiopia and Tanzania's national responses to coffee sector climate risk, drawing on Cases 2a and 2b. They should evaluate whether generic 'climate-smart' policy frameworks are adequate to the specificity of each country context, and propose a country-differentiated policy framework drawing on the PACSMAC research base.

Option D: Programme Redesign Brief (Group, 2,500 words)

Groups act as consultants to GreenFutures International and redesign their coffee programme portfolio for the next 5-year cycle. The brief must demonstrate how the programme would be genuinely farmer-centric while meeting donor climate requirements, and must specify a monitoring and evaluation framework using the Grabs et al. (2026a) resilience levels.

Suggested Readings and Resources

PACSMAC Research References

Grabs, J., Berecha Yadessa, G., Castellón Durán, M., Eneyew Bekele, A., Gallemore, C., Garedew Terefe, W., Gure Lemessa, S., Hailemariam Mamo, M., Kasongi, N. D., Mamuye Kebede, M., Mwalutolo, D. A., Niehues, I., Noe, C., Ponte, S., Regasa Megerssa, G., Silvano, P., Yamungu, N., & Jespersen, K. (2026a). Resilience of what and for whom? Climate change mitigation and adaptation in the global, Ethiopian, and Tanzanian coffee sectors. World Development, 200, 107299. https://doi.org/10.1016/j.worlddev.2025.107299

Grabs, J., Ponte, S., & Castellón Durán, M. (2026b). The business of climate change: Changing sources of green capital accumulation in the coffee sector. New Political Economy, online first, 1–20. https://doi.org/10.1080/13563467.2026.2614691

Regasa Megerssa, G., Garedew, W., Jespersen, K. Grabs, J., Eneyew Bekele, A. (2025a). The impact of climate change on Ethiopian Arabica coffee production and current challenges it poses to the coffee value chain. Sustainable Futures, 10, 101459

Regasa Megerssa, G., Eneyew Bekele, A., Grabs, J., Garedew, W., Jespersen, K. (2025b). How do institutions reshape the resilience of the Ethiopian coffee sector amidst the pressures of climate change? Sustainable Development, early view

Mamuye, M., Gallemore, C., Jespersen, K., Kasongi, N., & Berecha, G. (2024). Changing rainfall and temperature trends and variability at different spatiotemporal scales threaten coffee production in certain elevations. Environmental Challenges, 15, 100950. https://doi.org/10.1016/j.envc.2024.100950

Mamuye, M., Gallemore, C., Kasongi, N., Jespersen, K., & Berecha, G. (2025). Local-scale analysis of projected climate change impact on Arabica coffee distribution in selected districts of southwestern Ethiopia: Are the future production areas commercially viable? *Ecological Informatics*, *91*, 103392. https://doi.org/10.1016/j.ecoinf.2025.103392

Kasongi, N., Yamungu, N., Gallemore, C., & Jespersen, K. (2024). Projected rising temperatures and vapour pressure deficit threaten Arabica coffee production in Tanzania's burgeoning coffee region: Empirical insight from Mbinga district, Tanzania. *Environmental Challenges*, *16*, 100974. https://doi.org/10.1016/j.envc.2024.100974

Ponte, S., Silvano, P., Kasongi, N., Grabs, J., & Mwalutolo, D. (2026). The changing features of governance in agro-food value chains: How climate change and domestic regulation are reshaping the Tanzanian coffee industry. European Journal of Development Research, early view.

Gallemore, C., Berecha, G., Eneyew, A., Grabs, J., Jespersen, K., Kasongi, N. 'gwinamila, Mamuye, M., Maskell, G., Mathe, A., Mwalutolo, D., Niehues, I., Terry, S., & Yamungu, N. (2025). Avoiding access inequity due to classification errors in zero-deforestation value chains: Coffee and the European Union Deforestation Regulation. *Land Use Policy*, *157*, 107609. https://doi.org/10.1016/j.landusepol.2025.107609

Theoretical Foundations

Fricker, M. (2007). Epistemic Injustice: Power and the Ethics of Knowing. Oxford University Press.

Gereffi, G., Humphrey, J., & Sturgeon, T. (2005). The governance of global value chains. Review of International Political Economy, 12(1), 78-104.

Hirschman, A.O. (1970). Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States. Harvard University Press.

Clegg, S. R., Lawrence, T. B., & Hardy, C. (2006). The Sage handbook of organization studies.

Smith, W.K. & Lewis, M.W. (2011). Toward a theory of paradox: A dynamic equilibrium model of organizing. Academy of Management Review, 36(2), 381-403.

Lewis, M.W. (2000). Exploring paradox: Toward a more comprehensive guide. *Academy of Management Review*, 45(4), 760–776.

FAO. (2013). Climate-Smart Agriculture Sourcebook. Rome: Food and Agriculture Organization. Jassogne, L. et al. (2013). The impact of climate change on coffee in Uganda. CCAFS Working Paper No. 26.

Rainforest Alliance. (2020). Sustainable Agriculture Standard: Farm Requirements.

Markelova, H. et al. (2009). Collective action for smallholder market access. Food Policy, 34(1), 1-7.

Wanyama, F.O. (2014). Cooperatives and the Sustainable Development Goals. ILO Cooperative Facility for Africa.

Notes on Sensitive Content and Facilitation

Several elements of this case series require careful facilitation:

Power and Positionality
Students from coffee-growing countries may have personal or family connections to the issues being discussed. Instructors should create space for this experience to be acknowledged as analytically valuable while ensuring it does not become the only or dominant voice in the room.

The Limits of Fictional Characters
All protagonists are fictional composites. Instructors should resist the temptation to present them as representative of specific individuals within ECTA, TCB, or named NGOs. The cases are grounded in empirical research but are not case studies of specific organisations.

Scientific Uncertainty
Instructors should be prepared to address the limits of suitability modelling. The projections cited in the cases represent best available science but carry meaningful uncertainty, particularly beyond 2050. This uncertainty is a feature of the pedagogy - not a flaw - because it mirrors the conditions under which real policymakers must act.

Political Sensitivity
The EUDR compliance dimension of the Ethiopian case may be politically sensitive in classrooms with European students whose governments supported the regulation. The goal is not to adjudicate the policy but to examine how externally-imposed regulatory standards interact with production realities on the ground.

PACSMAC Teaching Note - For Instructor Use Only
Grounded in fieldwork from the PACSMAC project: Paradoxes of Climate-Smart Coffee

References

Gereffi, G, and K Fernandez-Stark (2016). Global Value Chain Analysis: A Primer, 2nd Edition. Retrieved from https://hdl.handle.net/10161/12488.