



University of  
Zurich<sup>UZH</sup>

Department of Social Anthropology and Cultural Studies



16

Working Paper No.

ZANTHRO

Zurich Anthropology  
Working Papers

Working in the Field

Five Reflections on Doing Fieldwork in Agrarian Fields

– Esther Leemann & Rebekka Sutter (eds.)

© 2023 ESTHER LEEMANN, REBEKKA SUTTER, TARA BATE, THÉOPHILE JOHNSON, ALESSANDRA PELLEGRINI CALDERÓN,  
ALINE VON ATZIGEN

**ZANTHRO - Zurich Anthropology Working Papers**

Published by  
ISEK – Ethnologie  
Andreasstrasse 15  
CH 8050 Zurich

zanthro@isek.uzh.ch

Editorial Board:  
Annuska Derks  
Molly Fitzpatrick  
Werner Hertzog  
Lena Kaufmann  
Olivia Killias  
Esther Leemann  
Christine Schenk

Proof Reading:  
Jennifer Bartmess & Aron Alber

Graphic Design:  
University of Zurich, Information Technology, MELS/SIVIC

Cover Photo: Neth Prak



Creative Commons License CC BY NC ND 4.0 (<https://creativecommons.org/licenses/by-nc-nd/4.0/>)

ISSN: 2571-6190

# Working in the Field: Five Reflections on Doing Fieldwork in Agrarian Fields

ESTHER LEEMANN, UNIVERSITY OF ZURICH

REBEKKA SUTTER, ETHNOGRAPHIC MUSEUM, UNIVERSITY OF ZURICH

“Central to anthropology is fieldwork. This does not mean working in a field, but choosing a place to stay and going to live in it, which is known as being ‘in the field’” (Delamont 1995, 6). In this working paper collection,<sup>1</sup> we subscribe to the widely accepted definition of fieldwork above and yet wish to unsettle this notion with a simple question: What if fieldwork, which remains the signature method of the discipline, means working in an *actual* field? What if it means doing participant observation with people making their living from agrarian fields – namely, farmers, landlords, *campesinos*, tenants, plantation workers and managers, swiddeners, and beekeepers?

In this collection, six authors present their reflections on fieldwork situated in agrarian fields. We start with a contribution on bodily ethnography in mountainous fields from Tara Bate, Théophile Johnson, and Rebekka Sutter. They focus on bodily experiences that shape anthropological knowledge. Alessandra Pellegrini examines the intimate relationships between people and their coca fields in the Bolivian Yungas and arrives at a surprising conclusion: while fields often seem fixed in place, they are in fact on the move, as they can be sold or passed on separately from the land on which they are found (*ibid.*). Aline von Atzigen offers a multi-species approach to reconsidering landscapes in the French Provence as fashioned through the entanglements of beekeepers, bees, lavender producers, and the various economic and ecological relationships that are formed around lavender fields. Esther Leemann and Rebekka Sutter bring the reader to the highlands of Cambodia and Southwest China, regions in which intensive processes of land conversion are underway. They focus on the ways in which specific agrarian practices are bound up in ongoing forms of struggle, contestation, and negotiation with the state (Seshia Galvin 2021).

Untrained eyes and ears – very often with an urban bias – and policy makers alike often stereotype those living from fields as backwards and unchanging. But our discipline has provided a rich literature stressing the many entanglements and dynamics involved in balancing on an alp (Netting 1981), eating the forest (Condominas 1977), resisting every day (Scott 1985), struggling for a field of one’s own (Agarwal 1995), testing powers of exclusion (Hall, Hirsch, and Li 2011), fighting state territorialization efforts (Peluso 1992), cultur-

---

<sup>1</sup> This Zanthro working paper collection derives from a panel titled “Working in the Field”, convened at the Annual Meeting of the Swiss Anthropological Association, April 22–24, 2021. The meeting – held due the pandemic exclusively in virtual fields of meeting rooms, chat windows and shared presentation screens – had called for panels reflecting on the topic of Re-viewing “the field”: Contemporary debates and approaches to fieldwork. Shaila Seshia Galvin was the discussant at our panel.

ing trees (Fairhead and Leach 1997), unquieting the woods (Guha 2010), and inheriting histories of weediness (Tsing 2005). Nevertheless, a focus on rural people and agrarian questions is anything but fashionable among our students and colleagues. We call for a renewed interest in the predicaments of the one-third of the global population<sup>2</sup> that lives off agriculture in the twenty-first century. As Tania Li pointed out “the total number of people living in rural areas is bigger than ever, and they will be there for decades to come” (Li 2014: 3). In line with the question of “what sort of ethnography ... people learn to do in the twenty-first century and how ... this relate[s] to what they write,” which was raised in a recent editorial note in *HAU* (Ferme, Costa, and Durham 2019: 8), we want to reflect on our discipline’s contemporary (earthy) fields and fieldwork practices.

There have been animated debates within the discipline for over thirty years on the meanings of the field and fieldwork, and scholars have frequently debated reflexivity, objectivity, exoticism, epistemology, and the politics of representation (Miner 1956, Myerhoff 1978, Favret-Saada 1980, Marcus and Cushman 1982, Clifford and Marcus 1986, Abu-Lughod 1996, Shostak 2000, Rabinow 2007). Akhil Gupta and James Ferguson’s (1997) influential contribution to these debates, namely “Discipline and Practice: ‘The Field’ as Site, Method, and Location in Anthropology” reminds us that anthropology emerged in the 19th century as a *field science*. In discussions of the field and fieldwork in anthropology, a distinction was made between the field as a localized place and the field as a political location/position. But Gupta and Ferguson highlighted that anthropological knowledge is both about somewhere and from somewhere and called for greater attentiveness to location, both as a physical site and a social and political location. The papers in this collection follow Gupta and Ferguson’s understanding and show that the distinction is not as firm or as oppositional as it has been made out to be. The field may be at once a site and a considered position, a place, and a location. We also understand the field to be inextricably linked to epistemology. According to Shaila Seshia Galvin, “remembering the origins of anthropology as a field science helps keep us oriented and attuned to the ways the field is something that is crucially connected to particular ways of knowing” (personal comment 2021). The papers therefore offer sustained considerations of ways of knowing or epistemologies by engaging with ideas of the field and fieldwork.

## Acknowledgments

Shaila Seshia Galvin was an amazing discussant for the panel “Working in the Field” at the 2021 SAA conference, where we presented earlier versions of this work. We thank her for her substantive and nuanced comments, which decisively shaped our understanding of the collection presented here. Her article “Interspecies Relations and Agrarian Worlds”, published in the *Annual Review of Anthropology* (2018) was an inspiring point of departure.

The authors would like to thank their Bolivian, Bunong, French, Lisu, Limi, and Manang interlocutors and translators. Esther Leemann would like to thank the Cambodian local research collaborator Prak Neth for his invaluable contribution. We also thank the editors and anonymous reviewers for their constructive critique and feedback on earlier versions of this paper collection.

---

<sup>2</sup> According to FAO (2021a) agriculture provides employment for about 27% of the world’s workforce. However, it must be noted that incomplete coverage as well as different exclusion criteria leads to underestimation of census variables (FAO 2021b).

## References

- Abu-Lughod, Lila. 1996. "Writing Against Culture." In *Recapturing Anthropology: Working in the Present*, edited by Richard G. Fox, 137–162. Santa Fe (N.M.): School of American Research Press.
- Agarwal, Bine. 1995. *A Field of One's Own: Gender and Land Rights in South Asia*. New York: Cambridge University Press.
- Clifford, James, and George E. Marcus, eds. 1986. *Writing Culture: The Poetics and Politics of Ethnography*. Berkeley, CA: University of California Press.
- Condominas, Georges. 1977. *We Have Eaten the Forest: The Story of a Montagnard Village in the Central Highlands of Vietnam*. London: Allen Lane.
- Delamont, Sara. 1995. *Appetites and Identities: An Introduction to the Social Anthropology of Western Europe*. London and New York: Routledge.
- Fairhead, James, and Melissa Leach. 1997. "Culturing Trees: Socialized Knowledge in the Political Ecology of Kissia and Kuranko Forest Islands of Guinea." In *Nature is Culture: Indigenous Knowledge and Socio-Cultural Aspects of Trees and Forests in Non-European Cultures*, edited by Klaus Seeland, 7–18. London: Intermediate Technology Publications.
- FAO. 2021a. *World Food and Agriculture: Statistical Yearbook 2021*. Rome: FAO.
- FAO. 2021b. *Global Review of Agricultural Census Methodologies and Results (2006–2015). World Programme for the Census of Agriculture 2010. FAO Statistical Development Series No. 18*. Rome: FAO.
- Favret-Saada, Jeanne. 1980. *Deadly words: Witchcraft in the Bocage*. [Originally published in French in 1977.] Cambridge: Cambridge University Press.
- Ferre, Mariane C., Luiz Costa, and Deborah Durham. 2019. "Editorial Note: Future Orientations." *HAU Journal of Ethnographic Theory* 9 (1):6–9. doi: 10.1086/704170.
- Guha, Ramachandra. 2010. *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya*. Berkeley: University of California Press.
- Gupta, Akhil, and James Ferguson. 1997. "Discipline and Practice: 'The Field' as Site, Method, and Location in Anthropology." In *Anthropological Locations: Boundaries and Grounds of a Field Science*, edited by Akhil Gupta and James Ferguson, 101–140. Berkeley, Los Angeles, London: University of California Press.
- Hall, Derek, Philip Hirsch, and Tania Murray Li, eds. 2011. *Powers of Exclusion: Land Dilemmas in Southeast Asia*. Singapore: NUS Press.
- Li, Tania. 2014. *Land's End: Capitalist Relations on an Indigenous Frontier*. Durham: Duke University Press.
- Marcus, George E., and Dick Cushman. 1982. "Ethnographies as Texts." *Annual Review of Anthropology* 11 (1):25–69. doi: 10.1146/annurev.an.11.100182.000325.
- Miner, Horace. 1956. "Body Ritual among the Nacirema." *American Anthropologist* 58 (3):503–507. doi: 10.1525/aa.1956.58.3.02a00080.
- Myerhoff, Barbara G. 1978. *Number Our Days*. New York: Simon and Schuster.
- Netting, Robert McC. 1981. *Balancing on an Alp: Ecological Change and Continuity in a Swiss Mountain Community*. New York: Cambridge University Press.
- Peluso, Nancy. 1992. *Rich Forests, Poor People: Resource Control and Resistance in Java*. Berkeley: University of California Press.
- Rabinow, Paul. 2007 [1977]. *Reflections on Fieldwork in Morocco*. Berkeley: University of California Press.
- Said, Edward. 1978. *Orientalism*. London: Routledge & Kegan Paul.
- Scott, James. 1985. *Weapons of the Weak: Everyday Forms of Peasant Resistance*. New Haven: Yale University Press.
- Seshia Galvin, Shaila. 2018. "Interspecies Relations and Agrarian Worlds." *Annual Review Anthropology* 47:233–249.

Shostak, Marjorie. 1981. *Nisa, the Life and Words of a !Kung Woman*. Cambridge: Harvard University Press.

Tsing, Anna Lowenhaupt. 2005. *Friction: An Ethnography of Global Connection*. Princeton and Oxford: Princeton University Press.

# Towards a Bodily Ethnography: Co-laboring in Mountain Fields

TARA BATE, UNIVERSITY OF ZURICH

THÉOPHILE JOHNSON, UNIVERSITY OF PARIS NANTERRE

REBEKKA SUTTER, ETHNOGRAPHIC MUSEUM OF THE UNIVERSITY OF ZURICH

Within the broad category of agrarian fields, this paper focuses on smallholder communities making a living from mountain fields. Based on our three fieldwork experiences with herders in Nepal and farmers in Southwest China, we propose co-laboring as a fruitful ethnographic method to understand and account for the daily lives of farmers and herders dwelling in mountainous environments. We argue that the specificities of mountain environments shape the inextricable relationship between minds, bodies, and environments and thus are crucial for understanding the acquisition, transmission, and life-long refinement of skilled practices situated in mountainscapes. We show how these skilled practices are embedded in the sociality of communities of practice and evolve from daily interactions with domestic and wild animals, foraged plants and cultivated crops, and meteorological and topographical conditions on high altitude grasslands and steep slope cultivations. By presenting three vignettes that illustrate different aspects of co-laboring in mountain fields, we show where and how this method can be applied. In so doing, we intend to address the fact that the body is “not yet something through which research is often done” (Crang 2005: 232). We argue that it is not only possible but crucial to adapt our methodological resources and skills to mountain settings to produce more grounded ethnographies that grasp sensory and embodied ways of knowing.

## The Body in the Field: Methodological Reflections on Field Research

Studying agrarian knowledge from an anthropological perspective supposes to delve into local epistemologies and their appropriate methodologies. The body has long been recognized as the locus of learning processes and, as such, a matter of anthropological inquiry. But seldom has it been used as a way of knowing that the anthropologist herself develops as a methodological tool for ethnographic investigation. Within this collection of essays, all of which take the fields of fieldwork in their literal sense, we wish to contribute a methodological suggestion that we term “co-laboring” or *Mitarbeit* in German (cf. Polak and Vogel 2017). In this method, the body – ours and our interlocutors’ – takes center stage. The three of us have used this method in our fieldwork and argue that it has proven particularly valuable in studying agrarian communities in mountain settings. Rebekka Sutter illustrates how she came to understand a core aspect of the concept of “skilled practice” (Ingold 2000: 316) while enduring a heavy monsoon period together with Lisu families in the Salween valley in southwestern China. Then, Tara Bate writes about one of the first turning points in her fieldwork where she felt like she was starting to be a part of a “community of practice” (Lave and Wenger 1991) through co-laboring and through the bodily realization of her entanglements with the animals and herders in Limi, northwestern Nepal. Théophile Johnson focuses on the long and tedious learning process he went

through as an apprentice to Nepalese herders in Manang, western Nepal, and what he understood of local epistemologies through their teaching methods.

### **Boredom and Waiting During Monsoon Season (Rebekka Sutter)**



Figure 1: Visiting neighbors in Salween valley, China during monsoon season. Photo: Rebekka Sutter

During fieldwork, my body was suffering from co-laboring with Lisu farmers: I had blisters on my hands from planting maize, headaches, a sore neck from walking with heavy loads, a sore lower back from weeding and harvesting, and an almost broken thumb because of my unskilled use of a slingshot. But it is not these obvious "bodily" experiences that stick with me most when recalling my fieldwork. In a way, the experience of collectively waiting, worrying, and enduring the boredom during spring 2017 when monsoon rains lasted unseasonably long not only left more distinct bodily memories but also opened the door to theoretical perspectives on the concept of skilled practice, which I retrospectively consider as crucial.

The villagers were desperately waiting to start planting maize, but the weather conditions forced everybody to patiently wait – knowing that with each passing day, the planting days afterwards would be even more strenuous, since the normal time window for planting had already passed. The first few days were a welcome rest, but after the fifth day of heavy rain, boredom was paralyzing us all. After cooking and eating rice at eleven o'clock, there was hardly anything left to do.





Figure 2: Waiting for the rain to stop, Salween valley (China). Photo: Rebekka Sutter

We would sit on our low stools, huddling around the fire while we tried to dry our wet shoes and clothes that never dried. After some days, the electric power supply broke down, and because of the lack of sun, there was no electricity from back-up solar panels. Even visiting the neighboring village was no longer possible. The neighbor next to my hosts' house started drinking again and would start fights with his son-in-law. "Tinni tinni mahali, kechua do maddo – tinni tinni mahali, allgilli gi madda" (It's raining every day, maize can't be planted – it's raining every day, we can't go anywhere); they used to repeat this Lisu saying like a mantra.

It was a challenging period for research: I tried to ask the family members as many questions as possible on anything that crossed my mind – but it was hard, since there were almost no inputs I could refer to and everyone was obviously stressed. It took me quite a while before I realized the value of these "boring" days, which seemed so distant from the image of "the vibrant village" (Schut and Mulder 2019). Spending that period in close daily proximity with my Lisu family changed my perception and understanding of skilled practice in a fundamental way. During the whole research period, co-laboring provided me with an unparalleled understanding of the techniques, social dimensions, and various cycles of this agrarian mountain community. But it was during the most boring days that I realized that co-laboring goes beyond concrete fields and sites and the many hours spent working together in the fields. Enduring the boredom with the villagers, in a way, made me a part of their drudgery, and thereby, of their community of practice. My limbs grew numb, and the humidity that entered my bones and marrow was (at least mentally) worse than sickling barley in the scorching October heat while flies clung to our sweaty skin. In addition, I realized that even in what appeared to be a "non-practice" – namely, by just sitting in the kitchen and waiting to start planting the maize – the upcom-

ing work resonated in all of us. This experience brought to the fore the social dimension of skilled practices that goes beyond the skill of simply *working* in the field. Skilled practice is much more than doing or making something. It is as much the specific way in which every single step is *planned* and *awaited* in a specific context as well as how it is individually perceived and collectively discussed within a community. This period made me understand skilled practices as a complex locus of identities, sociality, and senses of place in which the embodied knowledge of the practice enfolds. I remember the moment of bodily relief I experienced when the old man decided that we could start planting, and everyone got ready within minutes: we put on our boots, distributed hoes, and then climbed the slope together to reach the family's plots.



Figure 3: Co-laboring with a female working group planting maize, Salween valley (China). Photo: Song Shiyan

And then we started to plant, working in rows, with everyone and everything falling into place naturally. Moving together as a group, we opened the wet heavy earth with the hoe and let the shiny golden corn kernels gently fall into the dark earth. The corn kernels rustled against each other as we took another handful from the seed bags behind our backs.

After the week-long boredom, these first hours of hard work were not perceived as “work” but were rather practiced with gratitude and joy as we mutually reassured each other that it was not too late yet, and the maize would grow nicely this year.

## A Gut Feeling of Co-laboring (Tara Bate)



Figure 4: One of the higher summer settlements of Limi, around 4,500 meters above sea level. Photo: Tara Bate

July 2019. My research assistant Yankee and I had been staying with Ippi Dolma, 75, and Ay Yeshi, 35, on their summer pasture for three weeks.<sup>3</sup> The morning work had been accomplished, and Yankee and I were cooking breakfast while chatting with Ippi Dolma, who was churning the milk into butter. All of a sudden, we heard Ay Yeshi shrill: “Tchiangu! chiangu!” (“Wolves! wolves!”). Ippi Dolma dashed out of the tent with us following quickly on her heels. The herd was galloping wildly, tails up, in our direction, down from the hills they were peacefully grazing on just a few seconds earlier.

A pack of wolves had killed a one-year-old yak (*yaru*) and Ippi Dolma, Ay Yeshi, and myself spent the following three or four hours cutting it into pieces to bring it back in parts to the settlement. I lent them my two foldable knives, which were sharper than their blunt kitchen knives. Ippi Dolma worked with confidence, sliding the knife skilfully in the right spots to slit the skin open without piercing the guts, pulling the skin off to reveal the warm flesh, and cracking the bones at the joints, the sound of which made me cringe. The carcass was steaming in the morning cold, and the sour smell disgusted me slightly. Ippi Dolma gave Ay Yeshi and me instructions. I brought the guts to Ay Yeshi, and we both washed them in the icy cold, murky river. The guts’ warmth on my hands and forearms dissipated in the water, leaving only the meat. Never had I dismantled such a large body

---

<sup>3</sup> *Ippi* in the local Tibetan dialect (Limiekey) means grandmother and is a respectful way of addressing an elderly woman. *Ay* means elder sister and is a respectful way of addressing a woman slightly older than the speaker.

before, and I was both fascinated by the anatomy of this animal and uneasy with this sudden, intimate, and unmediated proximity.



Figure 5: The severed head of a yak killed to feed the Limey workers repairing a bridge in spring 2018.  
Photo: Tara Bate

The rest of the day, we tended to the animals while Ay Yeshi cut up slices of meat and hung them on a string to dry. During the night, Ippi Dolma woke up several times to shout back at the howling wolves who were attempting to attack the herd again; faced with Ippi's persistence, they eventually gave up.



Figure 6: Ippi Dolma feeds supplements to a lactating *dio* (female yak), made of *tsampa* (roasted barley flour), whey, salt, and dried turnip. Photo: Tara Bate

This episode was my baptism as a co-laborer in these two herders' eyes. After that, I became a partner in day-to-day tasks, one that could alleviate their daily workload and to whom they could explain how things are done. I, too, felt that I was becoming a part of a community of practice, even if temporarily. This event awoke a sense of embodied responsibility within me: I, too, had a duty of care and protection not only to the animals, but to the herders who depended on the well-being of the herd. This sense of responsibility was afforded by the entanglement of my body with the dead animal's: cutting up its carcass brought me to recognize a proximity, an intimacy even, that I had not felt until then. I felt this intimacy in the process of handling its body parts, in the transfer of its heat to my own body, and in my being covered in its fluids. By ingesting and assimilating the meat of that animal, we were ultimately entangling its life with ours. As bodily sensations suddenly erupted from what was until then a fairly cognitive, emotionally distant fieldwork experience, I began to feel that I shared, at least to some extent, the herders' responsibility to protect these animals and, by extension, that I was partaking in the herders' livelihoods as well. I was entangling my life with theirs. That night, I shared with them – and perhaps, to a different degree, with the herd – the adrenaline of hearing wolves howl and prowl around us. I felt how very alone we four women were in this environment we shared with

other animals who, through the medium of sound, claimed their co-ownership of the land. I realized how brave my hosts were for staying there alone, just the two of them, each in their own separate tent and better understood the value they gave to companionship with their fellow villagers. In other words, I was starting to *feel-understand* and not only to mentally process; I was grounding my body in their world.

### **Apprenticeship as an Implicit Pedagogy (Théophile Johnson)**

May 2017. Poltu and Purba have just welcomed me into their home at Ledar camp in Manang. It's been almost two weeks since I began to take care of the daily chores: I mostly cleaned the dishes and fetched wood. I had very little contact with the yaks except when Purba let them loose in the morning or when they came back in the evening. Even though I tried everyday to follow him on the slopes of the mountain, I inevitably ended up waiting for him halfway up and observing him from a distance, since he was walking too fast for me to follow. I asked myself: why couldn't I, a shepherd from France, follow him? That's when I set myself the task of reducing the distance between us.



Figure 7: Following Purba as he is searching for the herd in the fog. Photo: Théophile Johnson

I realize now, after three years, as I read over these field notes from my very first weeks, that this goal I gave myself neglected to take account of the fact that *chauri* and the Himalayan environment shape the shepherd's body and mind in a particular way, one which I had to acquire in order to work there. I spent most of my fieldwork time experiencing with my own body what Purba was doing every day inside the frame of the implicit pedagogy he used to teach me the job. After observing how my walking and my breathing were improving, he began for the very first time to ask me to search for and bring back two

*chauri* that had escaped in an area I had already been to. I often came back empty-handed, demonstrating how skilled he was in comparison.



Figure 8: Purba and Kansa cross the river without a bridge. Another great skill of shepherds. Purba carries a calf which was about to drown. Photo: Théophile Johnson

Purba's pedagogy attempted to give me access to his practices by letting me learn implicitly. In this process, Purba had prioritized the steps to reach his skilled practices. It was only after they saw that I was able to evolve more easily on the slopes that they took my apprenticeship to the next level. They observed my relationship with the *chauri* and the way they were reacting to me. I was finally engaging in an apprenticeship with the animals. After gaining the herders' trust, I realized that I now had to gain the herd's approval. My teachers asked me to go and look for more and more *chauri* in increasingly remote areas while being more evasive about their possible location. It was then my only mission. It was only after several months of fieldwork that I was allowed to tie the calves to the tether rope or milk a *chauri*, a skill that I discovered was of primary importance because it had to be done without provoking any needless stress in the calves or their mother, who were just getting used to human contact.

At the very end of my second journey in 2018, Purba pushed the apprenticeship even further by asking me to take care of the herd for a couple of weeks while he was away. At the end of the two weeks, I was so exhausted that I was barely able to get up. I realize today that, without this continuous progression in the complexity of the tasks they assigned, I would never have been able to get a single *chauri* to cooperate.



Figure 9: Bringing back a group that we had lost. Photo: Théophile Johnson

Apprenticeship methods are well known in ethnography. “How do I blend in?” is a pretty universal question amongst anthropologists pursuing fieldwork in a foreign community. The most fruitful methodological tool that allowed the three of us to integrate into our respective communities of practice and observe them from the inside was the long process of enskillment, which is also referred to as an apprenticeship or teacher-student relationship. Apprenticeship is one “type of non-linguistic learning” (Bloch, 2013: 19).

Apprenticeship posits an unbalanced relationship between the researcher and what or who she studies. Within the framework of learning lies the idea that differences can unite and no longer just separate (Cadena, 2015: 32), as apprenticeship is an anthropological practice “that acknowledges the difference between the world of the anthropologist and the world of others, and dwells on such differences because they are the connections that enable ethnographic conversations” (ibid.).

As we saw, this method in ethnography has real utility for our purpose of co-laboring in mountain fields. Firstly, it grants a very practical place to the ethnographer, namely that of the apprentice: the one who is there to learn. It reduces the study of skills to a single educational framework. In addition, by taking the role of the apprentice, the ethnographer also gradually integrates into a community of practice. However, this method requires identifying the people who seem to be the most skilled practitioners. Even if our bodily experience can be used as an ethnographic tool, we nevertheless need to verify that we are not the only ones to experience something. In order to do this, asking impromptu biographical questions like “Did you also learn it like this?” or “Was it also hard for you when you were young?” can help to find out their learning experience and verify the similarity of our experiences in the construction of a bodily ethnography.



## Conclusion

Often, bodily experiences are not only striking and memorable, but hold valuable potential for ethnographic inquiry. Through feeling boredom during the monsoon, cutting up a yak's body, or walking up slopes, mountain environments are places where these simple tasks, attitudes, and techniques demand skills, knowledge, and the body's full immersion. We propose that such skills and knowledge need to become both subjects and methods of inquiry themselves in order for us to fully understand mountain agrarian worlds. Co-laboring in mountain fields is, in this case, much more than just working together. Sharing labor with different beings is in fact what brings them together across cultural or species boundaries, enabling them to know each other intimately, share, and co-make a world together (Porcher and Nicod 2018, Haraway 2008, Dobler 2016). As an object of inquiry and as a method, co-laboring is a way to create relationships with other beings in the triadic relationship between humans, non-humans, and the environment (Stépanoff and Vigne, 2019: 13). What we are proposing with this method of a bodily-involved ethnography is a way to consider other ways of knowing that do not solely rely on explicit and mental knowledge. As Sigaut points out, we cannot see techniques: "We cannot simply go out and observe techniques, since we do not yet know what they look like" (Sigaut, 1994: 424). That is where the ethnographer's apprenticeship becomes a powerful tool: it teaches us to see, to empathize and communicate with coworkers with the intimacy and camaraderie that shared experience creates, and to relate to and interact with plants, animals, tools, and other elements of our environment. "We must not just describe what the embodied knowledge does but seek to understand how it comes to be through an apprenticeship in bodily practices" (Downey 2010: 24). In our view, finding one's role and place within mountainous *Umwelten* and acquiring their specific "language" are a necessary condition for understanding others' lived realities and finding words to ethnographically describe these realities. As social anthropologist Judith Okely writes, "The anthropologist cannot replicate others' experience, but she can use her own for a vicarious understanding to surmise others. ... A distinction can be made between subjective experience which is individual, and creative understanding which is an approximation to empathy but never complete" (Okely 1994: 37).

## References

- Bloch, Maurice. 2013. *In and Out of Each Other's Bodies: Theory of Mind, Evolution, Truth, and the Nature of the Social*. Boulder: Paradigm Publishers.
- Cadena, Marisol de la. 2015. *Earth Beings: Ecologies of Practice across Andean Worlds*. Durham: Duke University Press.
- Crang, Michael. 2005. "Qualitative Methods: There is Nothing Outside the Text." *Progress in Human Geography* 29:225–233.
- Dobler, Gregor. 2016. "'Work and Rhythm' Revisited: Rhythm and Experience in Northern Namibian Peasant Work." *Journal of the Royal Anthropological Institute* 22:864–883.
- Downey, Greg. 2010. "Practice Without Theory: A Neuroanthropological Perspective on Embodied Learning." *The Journal of the Royal Anthropological Institute* 16: 22–40.
- Haraway, Donna J. 2008. *When Species Meet*. Minneapolis: University of Minnesota Press.
- Ingold, Tim. 2000. *The Perception of the Environment: Essays in Livelihood, Dwelling and Skill*. London/New York: Routledge.
- Lave, Jean, and Etienne Wenger. 1991. *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.

- Okely, Judith. 1994. "Vicarious and Sensory Knowledge of Chronology and Change: Ageing in Rural France." In *Social Experience and Anthropological Knowledge*, edited by Kirsten Hastrup and Peter Hervik, 34–48. London and New York: Routledge.
- Polak, Barbara, and Kathrin Vogel. 2017. "Mitarbeit als Methode: Erfahrungen aus zwei ethnologischen Feldforschungen." In *Körper Technik Wissen: Kreativität und Aneignungsprozesse in Afrika: in den Spuren Kurt Becks*, edited by Markus Verne, Paola Ivanov and Magnus Treiber, 123–152. Berlin: LIT Verlag.
- Porcher, Jocelyne, and Sophie Nicod. 2018. "Domestication and Animal Labour." In *Hybrid Communities: Biosocial Approaches to Domestication and Other Trans-species Relationships*, edited by Charles Stépanoff and Jean-Denis Vigne, 251–259. London: Routledge.
- Schut, Thijs, and Nikki Mulder. 2019. "Introduction: The Vibrant Village." *Ethnofoor* 31 (2):7–12.
- Sigaut, François. 1994. "Technology." In *Companion Encyclopedia of Anthropology*, edited by Tim Ingold, 420–459. London: Routledge.
- Stépanoff, Charles, and Jean-Denis Vigne. 2018. "Introduction." In *Hybrid Communities: Biosocial Approaches to Domestication and Other Trans-species Relationships*, edited by Charles Stépanoff and Jean-Denis Vigne, 1–20. London: Routledge.

# The Intimacies of the Field: Coca Fields in Bolivia as Localized Spaces for Mobility and Wealth

ALESSANDRA PELLEGRINI CALDERÓN, INDEPENDENT RESEARCHER

## Introduction

Back in 1997, Gupta and Ferguson asked why anthropologists actually do their fieldwork “in villages” (1997: 115), and their question has spurred new approaches to fieldwork by following people to their multi-sited life contexts. Although villages differ in terms of how connected they are to urban centers, Gupta and Ferguson’s question implied the assumption that villages are often distant places removed from the places where globalization and mobility happen. In many cases, they are imagined as sites that seem to be stuck in time (see Schut and Mulder 2019: 7). This led not only to a certain type of anthropology, but to the imagination of anthropologists who apply old-fashioned and out-dated methods. However, as I want to show in this paper, villages can be not only vibrant places, but also *the* places for fostering wealth, social mobility, and transnational mobility. Further, I suggest that, in studying Bolivia’s coca growers, the local, old-fashioned village-type fieldwork was a necessary precondition to effectively engage in multi-sited forms of anthropological fieldwork; further, this type of fieldwork was necessary to understand socio-political identities within the translocal, national landscape as they relate to the social mobility of people from the Yungas’ (*yungueños*) as well as their positioning in particular as so-called “traditional coca growers,” which carries with it certain privileges as compared to other coca growers.

## Coca

Coca as a plant and coca growing as an activity is a very particular case. Coca is a cash crop with relatively high returns; it is labor-intensive, without fallow periods, and its leaves can be harvested every 3–4 months. In dried form, these leaves are used for chewing as well as ritual purposes throughout the Andes, and in recent years, they have been used to fabricate all kind of consumer goods such as toothpaste, flour, or liquor. Coca leaves also form the basis of cocaine. The coca leaves in the Yungas, however, are produced in a way that makes them most suitable for traditional usage.

Families generally own different coca fields in different stages of their production cycle, which effectively means that they harvest coca leaves year-round. In comparison to other rural places, outmigration to urban sites is less of a problem; in many cases, young people return to the village after completing their education or university studies, because they earn more by planting and harvesting coca than they do in low-paying urban jobs for young professionals, provided they can even find one. Due to the Covid pandemic, this phenomenon has only increased. Because cultivation is labor-intensive, migrants from other rural areas of the Andean highlands come to the Yungas to earn some cash. In the

highlands, they cultivate a number of products that follow a seasonal calendar, and while their own fields are left to fallow, they make money as day-wage laborers in the Yungas, where additional hands are always needed. Thus, coca cultivation plays an important role in the cyclical migration patterns within and among the different regions of the Andes. People in the Yungas view their coca field as a “green bank”; in contrast to the city, they are a site where a stable, reliable, and high income can be made. For them, to be part of Bolivia’s path to becoming a middle-income country and to experience social mobility and become middle class themselves (see Pellegrini Calderón 2016), it is necessary to spend the majority of their time living and working in a village where they make use of a profitable agricultural activity, even though many coca growers have a double residence in the village and the city of La Paz.<sup>4</sup> There, they often do some informal business with consumer goods, use their coca retailing license to buy and resell coca in other parts of the country, or simply accompany their children as they go to school, all while their fields in the Yungas are being harvested by day-wage laborers or by family members.



Figure 1: Coca plant with leaves. Photo: Alessandra Pellegrini Calderón

Coca is not just a plant, but also a site where different perceptions come together: coca is generally viewed as a holy plant for Andean cultures; for some, it is a site for claiming an indigenous identity; for others, it is a site of struggle between US colonizing forces and Bolivian anticolonial attitudes, especially those of the Evo Morales’ administration; for

---

<sup>4</sup> To have a double residence is not unusual in Andes. Historical roots of this practice can be found in the “vertical archipelago,” famously described by John Murra (1972). This entails the expansion of communities over various ecological levels, where the nuclear community (often situated in the highlands) has different patches or islands in other ecological areas.

peasants in legal and illegal coca-growing regions, it is a site of pragmatic income generation; it is a site of narcotraffic and illegality; it is a site of national identity; and it is a matter of family history and belonging, to mention just a few.

Just as Evans-Pritchard perceived the cattle for the Nuer as “chains along which social relationships run” (Evans-Pritchard 1940, quoted in: Seshia Galvin 2018: 235), the same can be said for coca. Thus, without doing fieldwork in the coca field, these social relations can hardly be understood. In what follows, I quickly outline the intimate relationships between coca plants, coca fields, and people.

### **The Intimate Relationships between Coca Plants, Coca Fields, and People**

As I have described in more detail elsewhere (Pellegrini Calderón 2016), coca fields and persons grow together in a kind of parallel, intertwined process. The process of growing from a child to a young adult, marrying and becoming a parent, then getting old, losing strength and eventually becoming a grandparent, is almost perfectly reflected in the coca fields. For example, the name that is used for the newly planted coca plants is *wawa coca* – baby coca – which yields high returns when the newly formed smallholder family needs it most. As children grow older and help with the work on the field, coca fields get expanded, and the coca plants get pruned several times to refresh them and increase their yields every four years. Finally, just as people get older and their children become independent and require considerably fewer resources, so too do the coca fields get older and yield considerably less. As the coca plants get older, they are said to get beards, and the terraces on which they are planted eventually decay. A coca field can last a lifetime, often thirty years or more. Not only the plants, but also the field, which is made up of steep terraces, needs continuous care in the form of weeding, repairing the decaying terraces, continuously pruning the plants, spraying them with chemicals, and providing irrigation.



Figure 2: Recently planted coca plants (*wawa coca*). Photo: Alessandra Pellegrini Calderón

It is important to note here that the intimate relationship really happens between the people and their fields as opposed to between people and the land on which coca fields are planted. In the Yungas, one might own a coca field without owning the land on which it is situated or sell the field without selling the land. There are various reasons for this: One main reason is that, before the official land survey was carried out by the state in 1954, people had already planted fields in different places that they perceived to be theirs, but which later turned out to be the property of others.<sup>5</sup> The real owner generally allows them to maintain their field until the end of its life cycle, at which point the land is returned to the rightful owner.<sup>6</sup> Another reason for the detachment of land and field in the Yungas is that people sometimes sell a coca field to someone else without selling the land because they have planted other, lusher fields on other pieces of their land, and they feel that it is no longer worth it to put effort into that particular field, which is often older and less fertile. However, people would never leave a field that still yields some coca to decay. People who buy coca fields without the land are often migrants from the highlands who might have worked for several years as day-wage laborers and want to establish themselves in the community. Until they are “naturalized” – a formal process which involves high monetary expenses – they are not allowed to buy land. Thus, they either rent or buy a field without the land.<sup>7</sup>

Land and field – these are two terms that often become conflated by researchers when referring to agricultural activities. This might be one reason why fields as places and fieldwork as a research methodology have been perceived as static. However, in the Yungas, fields themselves are dynamic and on the move: Although they are fixed in place for thirty years or more and, as such, have a stable presence, in contrast to the land beneath, they can potentially be passed on to different owners.

As coca fields are extremely long-lasting, a very intimate relationship emerges between people and their coca fields, which are an integral part of their immediate surroundings. When seeing people in the Yungas after a long time, I generally not only ask about the state of their family members, but also about the state of their coca fields. In this sense, coca fields can be conceived as being “formative meeting places” (see Seshia Galvin 2018: 234).

---

<sup>5</sup> After the agrarian reform of 1954, an official land measurement survey has been carried out by the state and each household received 10 hectares of land, for which they received a formal land title. Subsequently, additional land surveys have been taking place, the latest around the year 2000. People, however, cultivated coca fields, before they knew where their official plot of land was going to be.

<sup>6</sup> This is usually regulated between the two involved parties themselves. However, in case there are issues, the agrarian peasant union, which is the local political authority of the community, mediates between the two parties.

<sup>7</sup> This selling and buying of land is regulated by the peasant union, which is the local political authority. In addition, the peasant union also regulates the official membership in the community, member’s rights and obligations, membership fees, collective working days, infrastructural investments, etc. and their representatives are the contact points for the municipal government. They are elected by the community and do their work without payment.



Figure 3: Taking a break on a harvesting day in the coca field. Photo: Alessandra Pellegrini Calderón

Working days in the coca fields are full of intimate experiences between the plants and the people as well as between the people who are working in them.<sup>8</sup> The burning heat, the back pain from bending over for 6–8 or more hours, the blackening of the fingers from picking the leaves, the particular set of techniques necessary to pick the leaves as fast and efficiently as possible without breaking the delicate branches, and the skill of walking on the steep terraces without causing them to disintegrate are just some of the bodily and sensory experiences in the field.<sup>9</sup> People see it as a positive norm to stay close by as one goes from terrace to terrace through the field, which creates bodily proximity. Coca fields are also complex social spaces, since there are clear rules that apply to distinguish between positive or tolerable competition (e.g. as when some people in the group advance faster than others), and breaking up the social and spatial unity of the group, which is perceived negatively. At the same time, coca fields are spaces where some transgressions

---

<sup>8</sup> The people who work together on the coca fields are very loose social groups, often composed of good friends and relatives, but also day-wage labourer from other areas that sometimes pass the majority of the year in the same community. People of all ages work together, children often start helping with harvesting when they are around seven or eight years old (nowadays often later because they go to school, and it depends also on the wealth of the family; children from poorer families start helping earlier than others). Harvesting is considered predominantly a female task, but this is not at all a fix gender division. Both men and women harvest coca. Whether men help harvesting on a particular day often depends on if they have other tasks to do, such as installing irrigation or pruning the plants, spraying them, or building new terraces. The groups that work together vary greatly and can range from a small group to more than twenty people. It always depends on how many other persons “owe” the owner of the specific field a working day because this one has helped others out, as well as on the financial capacities of the owner. Wealthy people can afford to pay big groups of day wage labourers to finish the entire harvest of their fields within a few days.

<sup>9</sup> Because of the topography it is not possible to use agricultural machinery and all tasks need to be done by hand.

are also allowed: often, people tell jokes that reference intimate bodily issues, and respected persons can be teased to a certain degree.



Figure 4: Harvesting together in bodily proximity. Photo: Alessandra Pellegrini Calderón

However, coca fields clearly “do” a lot not only regarding the human sociality that is played out on their surface, but they also “do” a lot to the landscape.<sup>10</sup> As long-lasting places planted on hard pounded terraces, they represent aesthetic values carved permanently into the landscape. Coca fields often resemble works of art that astonish with their perfect geometry and symmetry. However, to be able to carve these aesthetic values into the landscape, a whole set of specialized skills are necessary. Now more than ever before, these skills are bought on the labor market. Highland migrants are often hired to do this hard, physical work, often under the instruction of an experienced yungueño man. Similar to the cheesemakers that Paxson (2012; in Seshia Galvin 2018) describes and who use the labor of other living species such as bacteria, which they use together with their own skilled labor to produce cheese, coca growers understand their enterprise as taking advantage of the inherent properties – or “labor,” as one might say within a multispecies framework – of the coca plant, which produces leaves and lets them fall to the ground continuously. Many conversations on coca in the Yungas either start or end with this simple observation and the magic it entails: whether or not people harvest the leaves, the plant produces them, letting them fall when they are ripe and producing new ones, which, the people contend, is a property no other plant on earth has. Yet, this inherent property of the coca plants creates considerable stress for coca growers: the worst thing to happen is

---

<sup>10</sup> Further, once the coca leaves are dried, they again “do” many things, such as satisfy the spirits or keep people awake and prevent them from feeling hungry while they are chewing the coca leaves.



that one is not able to harvest the leaves on time so that they fall to the ground, where they can no longer be processed and are destined to rot while the plant sprouts its next generation of leaves. Yungueños describe this as “the worst thing to happen,” on the one hand, because until that moment, considerable investments in terms of time and money have been made that are difficult to recover, such as the payments to day-wage laborers for weeding. On the other hand, coca growers are simply concerned about their coca fields, because the fields form an integral, stable part of their life, for which they truly care. This concern is part of the intimate relationship between coca fields and people. Coca growers often say that, thanks to the inherent magical property of coca plants to continuously create leaves, they can harvest without end, make a living and, eventually, become wealthy peasants.

The coca field as an intimate, localized space is thus created through the intimate relationship that people have with the coca plant, and it requires fieldwork in the “field” to understand this relationship.



Figure 5: Hard pounded terraces. Figure 6: Symmetry and perfection: the aesthetics of terraces. Figure 7: Terraces carved into the landscape, with coca fields at different stages of cultivation. Photos: Alessandra Pellegrini Calderón

## The Field as a Localized Site for Wealth and Translocality

This intimate relationship between people and their coca fields is a necessary precondition for their participation in regional, national, and transnational mobility. Coca growers are highly mobile, as most of them regularly travel to the capital city La Paz to sell their coca leaves. Further, since a decree was issued in 2006, they are allowed to sell their coca leaves directly to consumers, who chew them or use them for ritual purposes, in strictly assigned places. There is a limited number of such permits that have been issued for each village, so to sell their leaves directly to consumers, people often travel to far away cities in the country. This allows them to get up to three times more revenue for their coca leaves than they would by selling them to wholesalers in La Paz. However, without a coca field, and thus without a residence in the village, it is not possible to get such a permit. Thus, without an intimate relationship with a localized village, it is not possible to experience social mobility, high spatial and urban movement, or increased wealth. Further, people who reside in the city most of the year (because of their children's education), regularly go back to harvest their coca leaves to maintain their ties to the village as well as their registration. This created a whole discussion about "false yungueños" – people who have such a permit but who actually live in the city and rarely, if ever, care about their own coca fields in the Yungas. These "false yungueños" might have rented or sold their fields to someone else, or they might buy coca leaves from other coca producers to sell in La Paz instead of producing and harvesting them themselves. Thus, making use of extended market opportunities without having an intimate relationship with coca fields is likely to be perceived as an illegitimate undertaking.

The increased wealth that such a localized anchoring in a village space creates and the mobility that it leads to can be illustrated by the following example: Yola is now around 35 years old, has two children, and spends the majority of the year in La Paz where her children go to school. Her husband lives with her parents in the village, and Yola goes and helps with the harvest whenever she can, such as during school holidays. For many years, she had a permit to sell her coca directly to consumers and thus traveled once a month. Since she – like others who sell their coca to consumers – was away from her coca fields for quite some time, during which she earned more income, she has started to employ migrants or whole groups of harvesters from nearby villages as day-wage laborers on a regular basis. Until quite recently, it was still necessary for the owner or a family member to control and direct the paid laborers while they work in the fields. This was either herself or her mother, who is one of the most skilled harvesters in the village. As her mother harvested the coca leaves together with the paid workforce, she "pushed" them to increase their speed, since the group should ideally move through the field at the same pace. However, a few years ago, the whole payment system for day-wage laborers shifted from time-based payment to quantity-based payment, which means that laborers are paid by harvested pounds of coca leaves.<sup>11</sup> Within this payment system, there is no longer a need for "pushing" laborers, because they already have an incentive to harvest quickly.

The increased social mobility and the shift in the payment system led to a new and previously unheard-of socioeconomic distinction: Yola and her mother often do not har-

---

<sup>11</sup> The shift in payment systems is not a formal process. Generally, some regions within the Yungas preferred one or the other method of paying their labourers, but in the end, every owner is free to pay his or her labourers the way he or she prefers. Through informal processes and market mechanisms, in recent years, the payment-by-quantity became the dominant payment system.

vest anymore. However, at the end of the working day, they are responsible for the quality control of the harvested leaves, they intervene when necessary, and they weigh and take note of the leaves each person harvests. At times, they hire entire groups who cook and sleep in tents in their coca fields until they finish the whole harvest. Although persons like Yola and her family who have experienced such a pronounced social mobility do not harvest every day anymore, they still feel an intimacy with their fields, as they invest in and care for them: they provide irrigation, decide when to harvest, weed them, prune the plants when necessary, store and pack the leaves, etc.

Even while coca growers experience social and spatial mobility, the coca field remains a kind of “hub” where social and translocal mobility is articulated in ways that trouble easy distinctions between urban and rural. Thus, with increased mobility, the coca field as a localized site does not lose, but only gains renewed relevance.

## Conclusions

I showed that, because of the peculiarities of coca leaves’ production – a labor-intensive, permanent, high-return cash crop without resting periods – it would be inconceivable to do fieldwork about socio-political identities and social mobility in a purely multi-sited form. Further, the relationship between people and their coca fields, which feeds directly into their political positioning, can only be understood by working in the coca fields alongside everyone else. The mutual labor the coca plant requires as well as the care and concern people have for their fields is the reason for the intimacy that exists between people and their coca fields. Such an intimate relationship and the skills it involves are a precondition for participating in renewed forms of coca commerce that allow for the social mobility of *yungueños*.

Looking at the Andean ethnographic literature (e.g. Allen 2002 [1988], Gose 1994, Harris 1995), one could say that coca-growing villages of the Yungas rank very low within the “hierarchy of purity,” to borrow a term from Gupta and Ferguson (1997: 136). Not only do they actively reject the image and label of “indigenous people” for themselves, but they are also an emerging middle class that defines itself through their productive activities and their political positioning as coca growers of the traditional zone. Both their productive activities and their political positioning are closely related to the spatial location of the Yungas and the everyday work people do on their coca fields. Being a coca grower from the Yungas, owning coca fields, being skilled at growing coca, and maintaining and living off the fields all feed into political arguments for a privileged treatment of coca growing and commerce on the regional and national levels due to the history of the Yungas as a region where coca growing has presumably been practiced for thousands of years. Doing fieldwork in the field is a necessary entry point to the study of *yungueños*’ fields of political struggle, social mobility, and translocal engagement. As a research site, the coca field serves as a crucial location for fieldwork precisely because it invites anthropologists to both think about “agrarian fields” beyond the dichotomy between urban and rural and to look at their increased relevance for translocal processes (Schut and Mulder 2019: 8).

## References

- Allen, Catherine. 2002 [1988]. *The Hold Life Has: Coca and Cultural Identity in an Andean Community*. Washington: Smithsonian Institution Press.
- Gose, Peter. 1994. *Deathly Waters and Hungry Mountains: Agrarian Ritual and Class Formation in an Andean Town*. Toronto, Buffalo, London: University of Toronto Press.
- Gupta, Akhil, and James Ferguson. 1997. "Discipline and Practice: 'The Field' as Site, Method, and Location in Anthropology." In *Anthropological Locations: Boundaries and Grounds of a Field Science*, edited by Akhil Gupta and James Ferguson, 101–140. Berkeley, Los Angeles, London: University of California Press.
- Harris, Olivia. 1995. "Ethnic Identity and Market Relations: Indians and Mestizos in the Andes." In *Ethnicity, Markets and Migration in the Andes: At the Crossroads of History and Anthropology*, 351–390. Durham and London: Duke University Press.
- Murra, John. 1972. "El control vertical de un máximo de pisos ecológicos en la economía de las sociedades andinas." In *Visita de la Provincia de Leon de Huánuco en 1562*, edited by John Murra, 429–476. Huánuco, Peru: Universidad Nacional Hermilio Valdizan.
- Paxson, Heather. 2012. *The Life of Cheese: Crafting Food and Value in America*. Berkeley: University of California Press.
- Pellegrini Calderón, Alessandra. 2016. *Beyond Indigeneity: Growing and the Emergence of a New Middle Class in Bolivia*. Tucson: University of Arizona Press.
- Schut, Thijs, and Nikki Mulder. 2019. "Introduction: The Vibrant Village." *Ethnofoor* 31 (2):7–12.
- Seshia Galvin, Shaila. 2018. "Interspecies Relations and Agrarian Worlds." *Annual Review Anthropology* 47:233–249.

# Api-cultured Landscapes: Migratory Beekeeping in Lavender Single-crop Cultivation Fields

ALINE VON ATZIGEN, ETHNOGRAPHIC MUSEUM OF THE UNIVERSITY OF ZURICH



Figure 1: Lavender field in the French Provence. Photo: Aline von Atzigen

Lavender fields like the one in figure 1 are a typical element of the French Provence landscape linking agriculture, rural tourism, and apiculture in unique ways. These lavender fields are the materialization of an agricultural practice characterized by intensive single-crop cultivation that produces essential oils<sup>12</sup> for the perfume industry as well as for hygiene and medicinal products. While the stony and chalky soil between the lines of lavender bushes seems dry, it in fact provides the perfect conditions – along with the hot and sometimes windy Mediterranean weather – for lavender plants to grow. And more than that, the cultivation of lavender in French Provence as we know it today is the result

---

<sup>12</sup> The essential oils are extracted through distillation.

of the historical and locally embedded culture<sup>13</sup> and practice of “lavandiculturalists” – as the farmers who cultivate lavender are called.

Interestingly, these lavender fields attract thousands of tourists every year during the flowering season in June and July. The tourists come from all over the world to experience the flowering of the lavender and take selfies and holiday pictures in this “instagrammable” landscape. Paradoxically, it is the monotony and monoflorality – the seemingly endless fields with their straight lines of lavender bushes – that makes this landscape particularly picturesque. It is as if the vibrant violet of the lavender plants were outshining the intensive single-crop cultivation that enfolds over vast parts of French Provence.

In addition to tourists, these flowering lavender fields also attract beekeepers, who move their honeybee colonies here in summer. In France, migratory beekeeping – that is, the particular practice of seasonally transporting<sup>14</sup> bee colonies to sites with an abundance of particular nectar plants – is practiced by 11% of beekeepers, most of whom are professional large-scale beekeepers. Numbers from 2021 show that only 4.2% of beekeepers in France are classified as professional large-scale beekeepers – namely, beekeepers with more than 150 honeybee colonies (ADA France 2022). However, these 2,940 professional large-scale beekeepers keep 57% of all honeybee colonies, and they accounted for 83.1% of the honey produced in 2021 (ibid.; France AgriMer 2022). Pascal, a beekeeper I worked with, estimated that 300,000 honeybee colonies are brought to the Plateau of Valensole each summer to produce monofloral lavender honey<sup>15</sup> (Fieldnotes Provence, 2021).

Looking at this landscape with regard to the intensive cultivation of lavender, one could argue that this is an agricultural landscape. By focusing on tourism, the preference and perception of this touristic landscape as an aesthetically beautiful one would be highlighted. In this paper, I will center on apiculture and argue that this is also an api-cultured landscape. By this I mean that apiculture not only depends on and profits from the abundance of the lavender plant’s nectar, but it also co-shapes this Provençale landscape. In this paper I will analyze this by focusing on the spatio-temporal dimension of migratory beekeeping and its impact on the multispecies entanglements between humans, honeybees, and lavender plants.

By doing so, I add to existing literature on beekeeping (cf. Fortier, Dupré, and Alphandéry 2020; Niedersteiner 2020; Moore and Kosut 2013; Maderson and Wynne-Jones 2016; Suryanarayanan and Kleinman 2013; Suryanarayanan and Lee Kleinman 2014; Nimmo 2012; 2015; 2018; Phillips 2020). I contribute to this literature by paying close attention to the case of migratory beekeeping as a practice, which has received some attention recently, but which requires more in-depth analysis due to its relevance for honey production (see e.g. Kosek 2019; Phillips 2014). I contend that a focus on the spatio-temporal dimension of migratory beekeeping is crucial for conceptualizing the relationship between

---

<sup>13</sup> See Rolshoven (1991) for a detailed analysis of the cultural history of lavender cultivation in French Provence.

<sup>14</sup> In French: *transhumer*. Unlike transhumance where people live with their animals and herds on the move, the beekeepers in France only refer to the task of moving the honeybees as “transhumance”. I therefore use the term migratory beekeeping to refer to their particular way and practice of beekeeping. By doing so I clearly differentiate it from transhumance as practiced with other animals (e.g. sheep) and other nomadic ways of life.

<sup>15</sup> Monofloral honey is honey from one single nectar source plant requiring a single-crop cultivation site. Lavender honey is one of the most cherished and therefore most valuable monofloral honeys.

professional large-scale beekeeping practices and biodiversity as well as human-honeybee and human-environment entanglements in general. Such an approach is relevant for understanding migratory beekeeping against the backdrop of current ongoing debates about increased honeybee colony mortality and somewhat conflicting processes of “agriculturalization” and “environmentalization” (Fortier, Dupré, and Alphanbéry 2020).

More concretely, in this paper I will focus on migratory beekeeping – moving and keeping honeybees – in the single-crop cultivation lavender fields of the Plateau of Valensole. This case is particularly interesting and relevant, as the lavender cultivated here is sterile hybrid *lavandin* (*Lavandula X intermedia*). Sterile lavender means that the plants do not produce any pollen. This total lack of pollen impacts the honeybee colonies and results in a brood stop, that is, the queen stops laying eggs because there is no pollen with which to feed the brood. First, focusing on the temporal dimension I will elaborate on how this lack of pollen is integrated in the yearly cycle of migratory beekeeping and how moving the honeybee colonies to warmer areas to boost them prevents negative impacts from this brood break. Second, by looking more closely at the spatial dimension of migratory beekeeping, I will outline how moving their honeybee colonies manipulates multispecies entanglements insofar as it temporally limits but spatially links “contact zones” (Haraway 2003; 2008) that are otherwise separated. But before I can focus on these two points, let me now define the concept of landscape.

### **Landscape – More than a Human Manipulation**

In the *Cambridge Encyclopedia of Anthropology*, Filippucci (2016) defines a landscape as

“the human interpretation and manipulation of the physical surroundings in which our individual and collective lives unfold. A ‘landscape’ is something constructed by humans in the course of their daily lives and interactions, both physically and also symbolically, by being invested with meaning, memory, and value.”

I do agree that landscapes are human interpretations of a certain place. Human interpretations are, for example, the perception of the Plateau of Valensole – a typical French Provence landscape – as picturesque. This perception is evident on tourist cards or pictures on social media platforms like Instagram or Flickr. In these pictures, the French Provence landscape is characterized by the vivid violet lavender fields, old and mostly decayed stone houses, trees shaped by the strong mistral winds, and the sometimes snowy mountains of the Hautes-Alpes in the background. Additionally, the pictures are taken at a particular time of the day – especially during sunrise or sunset, as the picture in figure 2 below shows.

However, I argue that the human interpretation and perception of these lavender fields as picturesque is dependent on the season of the year. After they have been harvested (see figure 3) or when they are covered with snow in winter, the fields are still pretty, but they lack that particular beauty that they only have during the flowering season.

Additionally, on the one hand the perception of the provençal lavender fields as aesthetically stunning landscapes is similar to the perception of other landscapes with intensive single-crop cultivation, such as the rapeseed fields in Yunnan/People’s Republic of China or the apple plantations in South Tyrol/Austria. On the other hand, their reputation stands in stark contrast to that of other sites with similarly intensive cultivations, such as the palm oil plantations in Indonesia or the soya fields in Argentina. Arguing with

Filippucci (2016), these landscapes are the result of human manipulation manifested through the intensive cultivation of a single crop. And yet, only some sites with single-crop cultivation are perceived as beautiful.

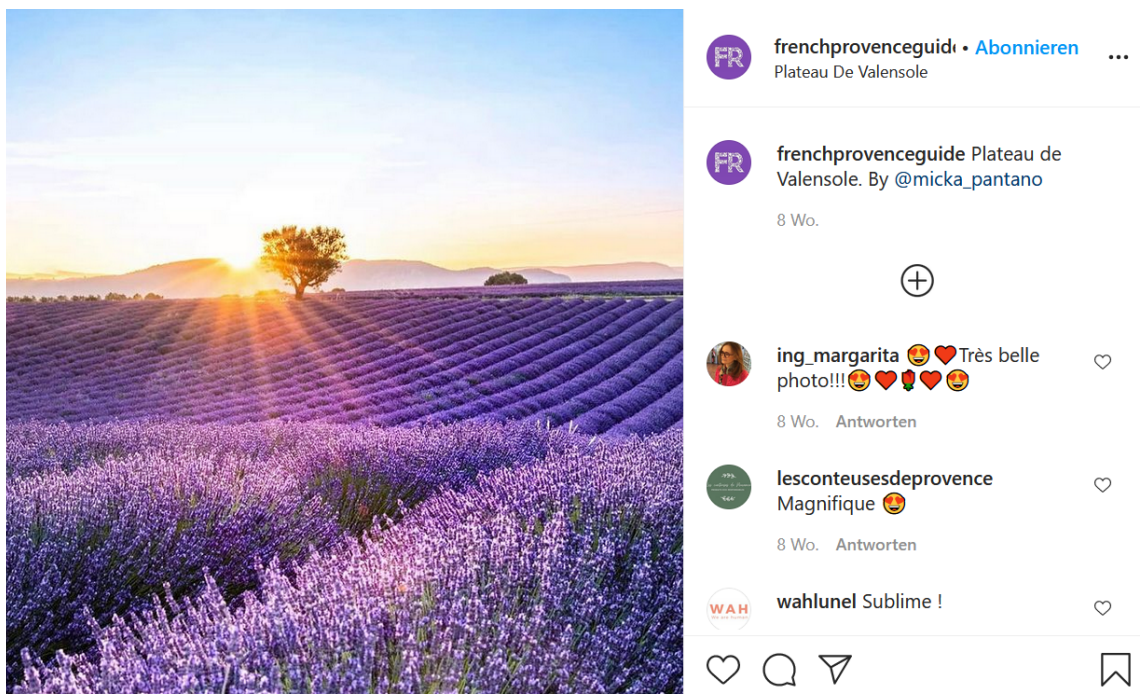


Figure 2: Lavender field during sunset on Instagram. Source: @micka\_pantano, <https://www.instagram.com/p/CLXLjLEFTnH/>



Figure 3: Lavender field after harvesting. Photo: Aline von Atzigen



The reasons why certain landscapes are beautiful while others are not are somewhat arbitrary and difficult to grasp. However, the examples I outlined above indicate that flowering and colors play a major role in this. Additionally, what makes the experience of this particular landscape on the Plateau of Valensole is that long before arriving on top and before one can even see the lavender fields, one is intrigued by the truly intense sensory experience: the sweet and intense but soft odor of lavender wafts through the air and descends over the whole area. However, the smell does not come from the lavender fields themselves but from the chimneys of the lavender distilleries that process the harvested lavender into lavender oil and work at full capacity during the flowering season (Fieldnotes Provence, 2019; Fieldnotes Provence, 2021).

Even more fascinating than the lavender plants and their scent are the omnipresent honeybees. Honeybees are literally everywhere. When one is walking or biking along the paths and streets through the lavender fields on the Plateau of Valensole, or just when passing by a lavender field – and there is always a lavender field nearby – the honeybees buzz around seemingly out of control as they fly from flower to flower. The flying and buzzing is an amazing sight even though – or perhaps precisely because – the honeybees are too fast for the eyes to follow them. The flying also makes an amazing sound. It is the particular and intense buzzing that I have only ever experienced when standing next to a honeybee colony and opening it – for example, when harvesting honey. Here in the middle of a field, with no beehives in sight, the air vibrates with buzzing honeybees. There are honeybees everywhere. To make this a bit more graspable for you once I was biking on the main road when suddenly I felt the distinctive and by now unfortunately familiar pain of a bee sting on my left earlobe. I couldn't believe it! I got stung by a honeybee on my ear while biking on the main street? Yes, it was true: this honeybee stung me because I just happened to be in its flight path. And due to the omnipresence of the bees, it was literally impossible not to be in the flight path of a honeybee or to not get stung at some point. Apart from the honeybees themselves it is also the beehives, standing on the margins of the fields or the beekeepers driving back and forth with their vans and trucks on their way to or from their apiaries<sup>16</sup> that makes apiculture such a present and encompassing practice in this site. In addition to these visible and materialized aspects of beekeeping practices there is also the intangible multispecies entanglements between beekeepers, honeybees, lavender plants, and the environment in general that are established through the practice of migratory beekeeping. As a consequence, apiculture at this site is not only omnipresent but essentially co-shapes the landscape.

Therefore, recalling Filippucci's definition of a landscape, I do agree with her that landscapes are the result of human manipulation. However, I want to go a step further and propose that we should rather conceive of landscapes as the result of *multispecies manipulation*. By saying so, I highlight that the manipulation of these landscapes involves not only human beings – farmers, tourists, local residents, beekeepers – but also plants, animals, and other living beings. I argue that the French Provençal landscape like the one on the Plateau of Valensole is the result of multispecies entanglements and manipulation – including the lavender plants and the honeybees. However, including not just human beings, but also other living beings in the understanding of agricultural systems and land-

---

<sup>16</sup> An apiary is the site where beekeepers keep up to around 80 honeybee colonies in one place. The professional large-scale beekeepers I worked with have several apiaries dispersed all over the Plateau of Valensole.

scapes, is hardly a new approach (cf. Kumpf 2021, Seshia Galvin 2018, Osterhoudt 2017, Ogden 2011, Philo and Wilbert 2000). In what follows, I will show how the lavender fields on the Plateau of Valensole in French Provence provide the necessary conditions for multispecies entanglements between beekeepers, honeybees, and lavender plants, and result in an api-cultured landscape.

### Hybrids – No Brood

The lavender cultivated in French Provence is mostly hybrid lavender called *lavandin* (*Lavandula x intermedia*). Like many hybrid varieties, *lavandin* is sterile. This implies that the *lavandin* flowers do not produce any pollen<sup>17</sup>. Nevertheless, *lavandin* plants do produce nectar and essential oils. If in other areas with intensive single-crop cultivation (e.g., almond trees, rape seed, apple trees) the honeybees are used to pollinate fruit trees or increase the harvest via pollination (as is the case with rapeseed, for example), here the honeybees cannot pollinate because there is no pollen. So, what do the honeybees do? Why do beekeepers like Jean-Marie or Pascal bring their honeybees here en masse despite the fact that there is no pollen at all? Because of the nectar. The honeybees collect the nectar of the *lavandin* flowers to produce honey.

However, the lack of pollen is a problem for the honeybee colonies. Pollen is collected and stored in the hive to feed the brood. If there is no pollen, there is no food for the brood. Due to the lack of pollen, the bee queens of the honeybee colonies brought to the Plateau of Valensole or other sites with intensive cultivation of *lavandin* react by ceasing to lay eggs. This is referred to as brood stop. Thus, in the honeybee colonies brought to the lavender fields, the normal brood cycle is interrupted. This implies that the number of honeybees per colony decreases, as no new honeybees are born to replace older honeybees, which usually die after roughly thirty-five days. However, the decrease in honeybees that begins in late summer is to some extent part of the seasonal rhythm and cycle of life in a honeybee colony and, as such, is no cause for worry. Nevertheless, late summer is also the time when the honeybee colony transitions by replacing short-lived summer bees with longer-living winter bees. Thus, this brood cycle interruption bears the risk that the honeybee colonies do not manage to reach a large enough population to successfully survive the winter. Beekeepers therefore carefully monitor the size of their honeybee colonies. This also implies that some beekeepers move their honeybee colonies to another site immediately after harvesting lavender honey in late July or early August.

In the following section, I will outline how moving the honeybees allows beekeepers to tackle this issue spatio-temporally. This is done by "boosting the colonies" in early spring by locating the honeybee colonies in warmer and more southern sites over the winter to guarantee that the honeybee colonies are at their peak when they are moved to the lavender fields. Additionally, by moving the honeybee colonies, migratory beekeeping as a practice not only manipulates and interrupts multispecies entanglements but also enables new ones that transcend geographically separated "contact zones" to form.

---

<sup>17</sup> For the reproduction of the *lavandin* plants pollen is not required. Seedlings are brought up again from pieces of *lavandin* bushes. Currently *lavandin* plants need to be replaced roughly every five years. The lifespan of lavender bushes has dramatically been reduced from ten or fifteen years to only five years due to a virus infesting and harming the plants. It is important to note here that there are no negative impacts on the yield of essential oils if honeybees collect nectar.

## Boosting the Bees

Honeybee colonies that are located in one place all year round adapt their life cycle to their local environmental surroundings. As soon as temperatures rise in spring and the first plants start flowering, the bees start to fly out from the hive to gather pollen and nectar. This is also the moment when the bee queen starts laying eggs again after the winter break, resulting in an increase in the number of honeybees in the colony. Thus, the seasonal cycle and the cycle of life in a honeybee colony are synchronized.

In the case of migratory beekeeping, the honeybee colonies are intentionally moved to extend the season. This requires moving the honeybee colonies to warmer areas farther south or at lower altitude at the end of autumn. Relocating the honeybee colonies to temperate sites during winter and early springtime allows for an early start to the seasonal life cycle of a honeybee colony. In this warmer region, the honeybee colonies start growing according to the local temperature as well as pollen and nectar availability. When they are moved to other sites later on, the honeybee colonies are bigger than they would be if they were located there the during whole year.

In France, many beekeepers, including those I worked with, move their honeybee colonies to the Var region near the Mediterranean for the winter. This allows the honeybee colonies to start growing in early February. Some beekeepers may also use pollen pastry to boost their honeybee colonies before they can find pollen in flowering plants. However, the main effect of boosting stems from the seasonal difference between the two sites. When moving the honeybee colonies to the French Provence in mid-June, they are at the peak of their strength, meaning that they have reached their maximum annual number of honeybees. Thus, the beekeepers I worked with are not very worried about their honeybee colonies being negatively affected by the succeeding brood-interruption due to the lack of pollen. Nevertheless, one key task for some beekeepers I worked with was to harvest honey from the hive body as well. Usually this is considered bad practice or unnecessary practice to try to increase profit. But here it is necessary, as it frees the space –after all brood cells have been filled with honey – so that the honeybees are able to begin breeding again once they can find pollen.

As for the multispecies entanglements between honeybees and *lavandin* plants, “boosting” honeybee colonies by moving them to warmer areas in winter and again when they are at full strength during the flowering season means that, when the honeybee colonies arrive on the Plateau of Valensole, their life cycle is not synchronized with the local season. Thus, due to migratory beekeeping, honeybee colonies do not grow in accordance with the *lavandin* and its flowering season but are rather imposed on the *lavandin* all of a sudden. The pressure resulting from this excessive influx of strong honeybee colonies on the multispecies entanglements on site – between *lavandin* plants, local honeybees, wild bees, other insects, and other plants – requires more in-depth analysis. In the next section, I focus on what the moving of the honeybee colonies implies for the spatio-temporal dimension of migratory beekeeping.

## Swapping the Surroundings

Beekeepers move their bees to the Plateau of Valensole when the lavender flowers are starting to or are already flowering. Before transporting the honeybee colonies, the beekeepers need to assess different parameters like the nectar flow at the current site and the

site on the Plateau of Valensole to ensure a constant food supply for their honeybee colonies; this includes checking weather patterns like rainfall and temperature. Additionally, the beekeepers also need to always bear in mind the state of their honeybee colonies. Thus, rather than just keeping bees, in migratory beekeeping beekeepers are required to constantly check and assess the nectar flow at two different sites, one of which is a significant distance from their home or the location of the apiaries.

To transport the honeybee colonies, they are loaded on a truck and moved overnight to their new site. For the honeybees, this migration to French Provence means that their surroundings change overnight. The migration is abrupt and stark, and yet it is a rather calm task to conduct. The honeybee colonies remain in their hive, and some beekeepers do not even close the lid when transporting their colonies to ensure that there is enough fresh air to prevent the colonies from overheating. It is important to unload the honeybee colonies before sunset. Long-distance trips also require some planning to organize sleep and guarantee safety when driving.

Migratory beekeeping as a practice relies on the invention of beehives with movable frames as well as the honeybees' capacity to understand, explore, and reorient themselves in a new place and adapt to their new surroundings. On the Plateau of Valensole, the new surroundings are the *lavandin* fields. Here, both honeybees and lavender flowers are somewhat abruptly forced to entangle themselves. In addition, these *lavandin*-honeybee entanglements only take place during a temporally limited period during the flowering season of the *lavandin* plants. It is the *lavandin* plants' flowering season that sets the rhythm and duration of these entanglements. However, as we have seen, it is the beekeepers who manipulate these multi-species encounters by boosting and transporting their honeybee colonies. Taking the sites and flowering plants into account reveals that in migratory beekeeping synchronization between honeybees and *lavandin* plants is not only temporal, but also spatial. By transporting the honeybee colonies, through migratory beekeeping otherwise geographically separated "contact zones" are linked.

## Conclusion

In French Provence, such as on the Plateau of Valensole, the landscape is characterized by intensively cultivated fields of one crop: sterile *lavandin*. By looking at migratory beekeeping, I have shown – in a very shortened and simplified way – that the beekeepers are more than "farmers without land" (Fortier, Dupré, and Alphandéry 2020). The beekeepers are adapting their yearly migratory beekeeping practices in accordance with the flowering season of nectar plants at different sites. By moving their honeybee colonies to different sites, beekeepers link these geographically separated "contact zones".

In the context of French beekeepers moving their honeybee colonies to the *lavandin* fields of the Plateau of Valensole, beekeeping is the spatio-temporal manipulation of the overlap between the life cycle of honeybee colonies and the flowering season of the *lavandin*. By spatio-temporal manipulation, I mean the migration of the honeybee colonies, which impacts the physical surroundings through the sudden influx of a high number of strong honeybee colonies during a very short time frame. Beekeeping practices not only rely on the abundant and available nectar sources but also co-shape this landscape into an api-cultured one. I argue that thinking of such sites as api-cultured landscapes would allow us not only to acknowledge the omnipresence of honeybees, apiaries, and beekeep-

ing at this site, but also to take account of their importance for agricultural systems and biodiversity.

## References

- ADA France, Fédération Nationale du Réseau de Développement Apicole. 2022. "L'apiculture professionnelle en chiffres." <https://www.ada-aura.org/filiere-apicole/lapiculture-en-chiffres/les-chiffres-cles/>
- Filippucci, Paola. 2016. Landscape. In *The Open Encyclopedia of Anthropology*, edited by Felix Stein. Facsimile of the first edition in *The Cambridge Encyclopedia of Anthropology*. <http://doi.org/10.29164/16landscape>.
- Fortier, Agnès, Lucie Dupré, and Pierre AlphanDéry. 2020. *Apicultures: des mondes en recomposition*. Paris: EHESS.
- France AgriMer, Établissement National des produits de l'agriculture et de la mer. 2022. "Observatoire de la production de miel et gelée royale 2022 (Données 2021)." Les Synthèses Edition Juillet 2022. Études Apiculture. République Française. [https://www.franceagrimer.fr/content/download/69152/document/SYN-API-Observatoire\\_Miel\\_et\\_Gel%C3%A9e\\_Royale\\_2021.pdf](https://www.franceagrimer.fr/content/download/69152/document/SYN-API-Observatoire_Miel_et_Gel%C3%A9e_Royale_2021.pdf)
- Kosek, Jake. 2019. "Industrial Materials: Labor, Landscapes, and the Industrial Honeybee." In *How Nature Works: Rethinking Labor on a Troubled Planet*, edited by Sarah Besky and Alex Blanchette, 149–168. Albuquerque: University of New Mexico Press.
- Kumpf, Desirée. 2021. "Multispecies Monocultures: Organic Agriculture and Resistance on Indian Tea Plantations." *Berliner Blätter* 84:49–61.
- Maderson, Siobhan, and Sophie Wynne-Jones. 2016. "Beekeepers' Knowledges and Participation in Pollinator Conservation Policy." *Journal of Rural Studies* 45:88–98. doi: 10.1016/j.jrurstud.2016.02.015.
- Moore, Lisa, Jean Kosut, and Mary Kosut. 2013. *Buzz: Urban Beekeeping and the Power of the Bee*. New York: New York University Press.
- Niedersteiner, Peter. 2020. *Zwischen Staunen und Zweifeln: Motive, Haltungen und Dilemmata der zeitgenössischen imkerlichen Praxis aus ethnologischer Sicht und Konzeptvorschlag für eine Imkerei nach dem Modell der solidarischen Landwirtschaft*. Dortmund: readbox publishing.
- Nimmo, Richie. 2012. "Animal Cultures, Subjectivity, and Knowledge: Symmetrical Reflections beyond the Great Divide." *Society & Animals* 20 (2):173–192. doi: 10.1163/156853012X631379.
- Nimmo, Richie. 2015. "The Bio-Politics of Bees: Industrial Farming and Colony Collapse Disorder." *Humanimalia* 6 (2):1–20.
- Nimmo, Richie. 2018. "Enfolding the BioSocial Collective: Ontological Politics in the Evolution of Social Insects." *Humanimalia* 9 (2):28–46.
- Ogden, Laura A. 2011. *Swamplife: People, Gators, and Mangroves Entangled in the Everglades*. Minneapolis: University of Minnesota Press.
- Osterhoudt, Sarah R., and Michael R. Dove. 2017. *Vanilla Landscapes: Meaning, Memory, and the Cultivation of Place in Madagascar*. New York: New York Botanical Garden.
- Philips, Catherine. 2014. "Following Beekeeping: More-than-Human Practice in Agrifood." *Journal of Rural Studies* 36:149–159. doi: 10.1016/j.jrurstud.2014.06.013.
- Rolshoven, Johanna. 1991. *Provencebild mit Lavendel: Zur Kulturgeschichte eines Duftes in seiner Region*. Bremen: Edition CON.
- Seshia Galvin, Shaila. 2018. "Interspecies Relations and Agrarian Worlds." *Annual Review Anthropology* 47:233–249.
- Suryanarayanan, Sainath, and Daniel Lee Kleinmann. 2013. "Be(e)Coming Experts: The Controversy over Insecticides in the Honey Bee Colony Collapse Disorder." *Social Studies of Science* 43 (2):215–240. doi: 10.1177/0306312712466186.

Suryanarayanan, Sainath, and Daniel Lee Kleinmann. 2014. "Beekeepers' Collective Resistance and the Politics of Pesticide Regulation in France and the United States." In *Fields of Knowledge: Science, Politics and Publics in the Neoliberal Age*, edited by Scott Frickel and David J. Hess, 89–122. Bingley: Emerald Publishing Limited.

# Disappearing Swidden Fields in Zomia: Fruitful Sites for Epistemologies

ESTHER LEEMANN, UNIVERSITY OF ZURICH

REBEKKA SUTTER, ETHNOGRAPHIC MUSEUM OF THE UNIVERSITY OF ZURICH

This paper starts from the premise formulated in the introduction to this collection: the agrarian field as a site and fieldwork as an everyday practice yield particular ways of knowing. We thereby look at one specific type of agricultural field that has long attracted the attention of social anthropologists: the swidden field. Adding to recent academic debates about swidden agriculture that circle around issues of sustainability in times of climate change, government policies, and issues of land grabbing, we ask a basic question: When looking at everyday practices of smallholders impacted by state interventions, what can we contribute to these debates from an ethnographic perspective? And what do we learn about ethnographic field research? In this article, we engage with ways of knowing (Harris 2007) through our ethnographic engagement with fieldwork in actual fields.



Figure 1: Location of case studies in China and Cambodia. Map: Encyclopaedia Britannica

We present two case studies from the highlands of South-west China and Cambodia (figure 1), areas in which intensive processes of land conversion are underway, and which form part of a larger region that van Schendel (2002) and Scott (2009) refer to as Zomia.<sup>18</sup> This particular space has historically been a refuge, especially for minorities, from the grip of state-making projects (Scott 2009). We explore the ongoing forms of struggle, contestation, and negotiation with the state of two minorities living in Zomia: the Lisu in China and the Bunong in Cambodia.<sup>19</sup>

<sup>18</sup> Van Schendel (2002) argued that 'Zomia' was a political and historical entity, a neglected transnational area, encompassing the Asian highlands, stretching from the western Himalayan range across the Tibetan plateau to the lower end of the Southeast Asian peninsula, characterized by sparse population, historical isolation, political domination by powerful surrounding states, marginality of all kinds, and great linguistic and religious diversity (see Michaud 2010). Scott (2009), focusing on the eastern part of van Schendel's Zomia, claimed that the highlands constituted a particular social space with its distinct social, political, and historical logic as a place of refuge from internal colonialism of state-making projects.

<sup>19</sup> The Lisu form one of the 56 officially recognized ethnic groups in China. About 800,000 Lisu live in the southwestern provinces Sichuan and Yunnan. Within Yunnan, Nujiang Lisu Autonomous Prefecture is the main settlement area in which 47% of the total population are Lisu. Other Lisu populations live in India, Myanmar, and Thailand (Mazard 2014: 215, Tabain et al.). The Bunong are one of the largest of the 24 ethnic minorities recognized by the Cambodian state, which account for a total of only 1–2% of the national population (AIPP 2015). The roughly 30,000 native Bunong (or Phnong) speakers live mainly in Mondulkiri province. While Mondulkiri's population has nearly doubled from 1998 to 2008, the percentage of the Bunong population in Mondulkiri decreased from 80% to 50%. Nowadays, less than half of the province's population is Bunong. Roughly 70,000 Bunong live in Vietnam.

Both the Lisu and the Bunong are engaged in swidden agriculture.<sup>20</sup> Swidden cultivation is an agroforestry system, which is under massive pressure from state policies. The Chinese and Cambodian states are instead pushing monocrop plantations (or non-cultivated areas). Swidden fields in extensive forests have historically been one of the palpable visible markers of this zone in contrast to the characteristic paddy field landscapes of the states surrounding these highlands. In the forest clearings, swiddeners would cultivate a broad range of products: diverse varieties of upland rice, corn, millet, tobacco, and a deliberately wild mix of vegetables and fruits mix create an amazing density of plants. No fertilizer or pesticides are needed, as regrowing forest regenerates soil fertility. While labor input is low as compared to wet rice cultivation, swidden agriculture needs extended areas of forests to be sustainable. In the 2000s, an estimated 14–34 million people depended on swidden cultivation throughout the highlands of Southeast Asia (Mertz et al. 2009b: 281f).<sup>21</sup>

Our contribution complicates Scott's thesis of highland swiddeners evading the state: today's Zomians have hardly any motivation or means to evade the state. Farmers appreciate plastic health insurance cards, villages are electrified, and paved roads are being built even on the steepest slopes of valleys. In a recent reply to Shaila Seshia Galvin (2021), Scott himself pointed out that "The expanding reach of the state has meant that for many previously quasi-autonomous peoples, the question is no longer how to avoid the state, but rather how to negotiate the most favorable terms of incorporation" (Scott, 2021).<sup>22</sup> With this in mind, we take a closer look at the fields of swiddeners, which we understand as sites of resistance and negotiation for socially and politically marginalized groups like the Lisu and Bunong.

Apart from engaging with swidden fields as sites of contestation between marginalized groups and the state, we engage with ideas of the field and fieldwork in anthropology. We offer a reflection on particular forms of knowing or epistemology that emerge when doing fieldwork in actual swidden fields. For this consideration of the field, fieldwork, and ways of knowing, we draw on earlier conversations around the field and fieldwork in anthropology (Gupta and Ferguson 1997).

We also draw on ethnographic field research in China and Cambodia. Leemann has worked in Bunong villages in Mondulkiri, Cambodia since 2010; the fieldwork spans a total of 4 months from 2010–2014, with follow-up research from 2016 to 2021. Sutter has

---

<sup>20</sup> The terms "shifting agriculture" and "swidden agriculture" (in German: Schwendbau) refer to a rotational system of agrarian land use. Mertz et al. (2009a: 261) define swidden agriculture as "a land use system that employs a natural or improved fallow phase which is longer than the cultivation phase of annual crops, sufficiently long to be dominated by woody vegetation, and cleared by means of fire."

<sup>21</sup> Swidden agriculture is not limited to Southeast Asia; it is also widely spread in Africa, Oceania, and Latin America. It is often called slash-and-burn (in Spanish: roza y quema) in Latin America, a term which is conducive to negative prejudices (Pollini 2014).

<sup>22</sup> "There is little doubt in my mind that in the last few decades my analysis of 'Zomia' makes less sense than it did, say, in 1960. Three processes have, in my view, been responsible. The first is the mass movement, forced and voluntary, of lowland majority populations, considered more loyal to the state, to the frontiers and borders as a strategic measure. The second is the realization that a region previously thought fiscally sterile is, in fact, a treasure of natural resources (e.g., timber, valuable minerals, hydroelectric sites). The third and final process is the technology to remake the landscape (e.g., bulldozers, dynamite, chain saws, reinforced concrete), which includes the clearing of land for new settlers who work plantations and grow cash crops that enhance state revenue" (Scott 2021: 443).



conducted field research in Southwest China from 2015 to 2019, staying a total of about 9 months among a Lisu community in the Salween valley in Yunnan province.

### **Marginalization of Swidden Cultivation: State Policies towards Land Conversion**

Dominant rural policy discourses consider swidden agriculture to be an unsustainable form of land use that is destructive to forests (Mertz and Bruun 2017, Dressler et al. 2017). Representatives of such discourses argue that clearing (in some cases primary) forest is unsustainable, and that cleared land is prone to erosion. Most national, but also international and regional policies have therefore pushed and continue to press for the replacement of swidden fields with other forms of land use (Dressler et al. 2017) such as forest or perennial crops like tree plantations, rubber, or pepper. However, anthropological studies<sup>23</sup> show evidence that swidden agriculture is actually a sustainable way of cultivating land, given that farmers maintain the necessary length of fallow periods (Conklin 1957, Atran et al. 1993).

Policies that promote large-scale land development, exclusionary conservation zoning, and prohibitive legislation have far-reaching implications for swidden communities (Mertz et al. 2009). Numerous anthropologists have studied swidden communities in Southeast Asia focusing on ecological, social, cultural, and political aspects (e.g. Condominas 1977 (1957); Conklin 1957; Dove 1985, 1993a, 1993b; Ellen 1978, 1982; Frake 1955; Freeman 1955; Leach 1954; Tsing 1993, 2005). As Conklin (1957: 2) stated for integral systems, swidden farming involves relationships that “stem from a more traditional, year-round, community-wide, largely self-contained, and ritually-sanctioned way of life.” Even if nowadays, most swiddeners are also engaged in other livelihood activities, for many communities, swiddening is still important as a way of life (Mertz et al. 2009b). Thus, “the demise of swidden is undoubtedly associated with loss of an elaborate cultural repertoire associated with the beliefs and rituals centering on the swidden cycle, as well as the loss of the material culture that underpins swidden activities. This can undermine the sense of identity and accelerate the marginalization of upland groups, who lose confidence in their culture and experience social fragmentation and decline” (Cramb et al. 2009: 332; cf. also Atran et al. 1993). The imposition of large-scale changes is assessed to have a rather adverse impact on swiddeners’ livelihoods (Cramb et al. 2009). Yet, literature also shows that swiddeners do not resist “appropriate and supportive forms of development” (Cramb et al. 2009: 323) and actively try to improve their livelihoods, even if such adaptations mean the end of swidden cultivation.

### **Ploughing Steep Slopes for the State: How the Lisu Adapt to and Resist State Interventions**

In China, swidden agriculture has been banned nationwide in the context of the Sloping Land Conversion Program. The program was first implemented in 2001 in Yunnan. The program’s goal is to retire steeply sloping and marginal lands from agricultural production

---

<sup>23</sup> Cf. for example Yin 2001 or Cairns 2015. Recent research from natural sciences also shows ample evidence that there are positive effects of swidden agriculture in terms of carbon fixation and biodiversity maintenance – two crucial factors in the context of climate change politics.

and increase forest cover. For the Lisu, who have been practicing swidden agriculture for centuries, this ban brings significant technical challenges:



Figure 2: A Lisu farmer plowing steep slopes in Yunnan province, China. Photo: Rebekka Sutter

Instead of annually swiddening new plots of mountain land, families had no choice but to start plowing and hoeing the steep slopes, transition towards state-monitored cash crop production, and convert as much land as possible to forest. In return, households get annual subsidies for all areas that are converted according to the program's guidelines.

Against this background of rapid and radical transformation, Sutter showed a picture from a current swidden field in Myanmar to two Lisu men from one of the mountain villages high up in China's Yunnan province. In sharp contrast to China, swidden agriculture in Myanmar is in full swing (Figure 3). To observers not familiar with the agricultural technique of swiddening, pictures of barren hills – or worse, burning slopes of swidden fields – usually evoke negative reactions or provide illustrative material to argue for swiddening as a seemingly environmentally-destructive practice that governments ban in favor of cash crops planted in monocultures or agroforestry systems.<sup>24</sup> Therefore, Sutter was hoping to get an idea of how the two Lisu men would “read” such an image showing an agricultural practice they remember from when they were young: how “legible” in terms of swidden cycles and agricultural techniques is such a landscape to them? Does the

---

<sup>24</sup> Cf. “cleared and burned forests have long evoked deep emotions, symbolism and representations that powerfully inform the governance of forests and upland peoples. In particular, the palpable visibility of shifting (swidden) agriculturalists ‘slashing and burning’ forests has fuelled centuries-old political agendas to criminalise swidden farmers for supposedly destroying swaths of forests valued for timber, biodiversity and now ecosystem services” (Dressler et al., 2020: 1). On the heated debate about potentials and challenges of swidden agriculture and the main lines of argumentations see Dressler et al. (2020) and Cherrier et al. (2018).

image of a swidden landscape evoke memories of past practices? Does it stir feelings of loss in them? Or on the contrary, do they feel relieved that they no longer have to do the hard work of swiddening? To Sutter's big surprise, for the Lisu men, the picture was not about trees and burning, nor was it about topography or the technical aspects of cultivation. For them, it was firstly about people.



Figure 3: The seemingly bare, deforested areas in the center are the swidden fields of Kalyo-Kengyu-village Sagaing-Division, Myanmar. According to the typical swidden cycle, these freshly opened fields will be cultivated for only two years, after which they will lie fallow for 8 to 10 years. The whole barren area is divided into numerous, irregularly shaped but neatly demarcated plots, each of which represents a temporary familial holding. Photo: Rebekka Sutter

Squatting on the narrow veranda in front of his sister's house, Liu Jixiang bent his head sideways as he usually did when pondering something; he commented more to his nephew than to Sutter, full of admiration at the immense manpower the village in Myanmar must be able to mobilize and coordinate to efficiently cut, burn, plant, weed, and harvest such fields. He wanted to know all the details concerning labor organization in these villages: "Are these the fields of one single village? Are you sure these lands are cultivated by one village? How many families are living in the village? How long does it take to reach the fields from the village? Are young people also working in the fields? Do they have a headman?" Then he laughed loudly, pointing to the photo: "Imagine how they have to do the sowing here. And the weeding! Aaah babaaaa ... ! Even if there is a whole village, you cannot do anything else [than cultivate these fields]." With this last comment, he was referring to the fact that in his village in Yunnan, many young men now earn a substantial part of the families' income by doing wage labor in towns down in the valley during the slow months; many of them are employed to clean the facades of hotels and industrial buildings, a job that requires a tolerance for heights. During planting and harvesting sea-

son, most of them return to the mountain villages to support their relatives with their labor power.

A growing body of literature deals with the changing livelihoods and the multiple identities of former swiddeners who experience rapid integration into a market economy (e.g. Sturgeon 2005, Gros 2014, Harwood 2014, Cairns 2017). With this ethnographic example, we aim to show that, in the case of Lisu communities in Yunnan, social structures are surprisingly persistent and “swidden legacies” of cultivating the steep slopes continue to shape today’s transformed agricultural practices under the monitored land conversion program. Both aspects become evident when encountering villagers in their actual fields: Who is working when? Who are they working for, and who are they working with? How, exactly, is subtle everyday resistance put into practice?



Figure 4: Lisu men resting from planting fodder maize in Yunnan Province, China. Photo: R.

This group of men is enjoying a smoke during a short break from planting fodder maize. Before focusing on the kin relationships between them, let us first turn our attention to the tree trunk in the middle of the photo: it may not have been cut this year, but it was certainly not cut twenty years ago – an obvious indication that this field has most probably been illegally enlarged. Villagers profit from the steepness of the terrain, which makes precise mapping almost impossible, especially since the plots are tiny, often measuring only fractions of 1 *mu*, which is the classic square measure for agricultural fields in China, with 1 *mu* being equal to 26 x 26 m.<sup>25</sup> In this mountainous topography, there is always the possibility of enlarging fields by a few square meters only to argue later on that

<sup>25</sup> GIS-based land monitoring nowadays can produce detailed maps of any region on the globe. In flat lands, precision is within a range of 30 meters (Jiang et al. 2022) – amazingly precise from a state-level perspective. From a smallholder’s perspective it’s enough imprecision to deny certain numbers. Still, GIS-based methods for monitoring the land under cultivation allow the state to monitor upland fields, even if not providing control of and discipline for small violations of rules on the ground.

it has been like that for decades. Families commonly make arrangements with relatives of neighboring plots to benefit in some way from subsidies or avoid penalties.

All four men hold their own land use rights in the village, but none of them are planting here on their own plots. Instead, they are all working for a seventy-two-year-old Lisu woman named Liu Liming, who is married to Song Yuanbing (see figures 5 and 6).



Figure 5: The owner of the plots, seventy-two-year-old Liu Liming. Figure 6: Liu Liming's husband Song Yuanbing collecting walnuts to be sold in the market. Photos: Rebekka Sutter

Sketching a kinship diagram provides some insights into the kindred relationships between the men working in the field and the old couple:

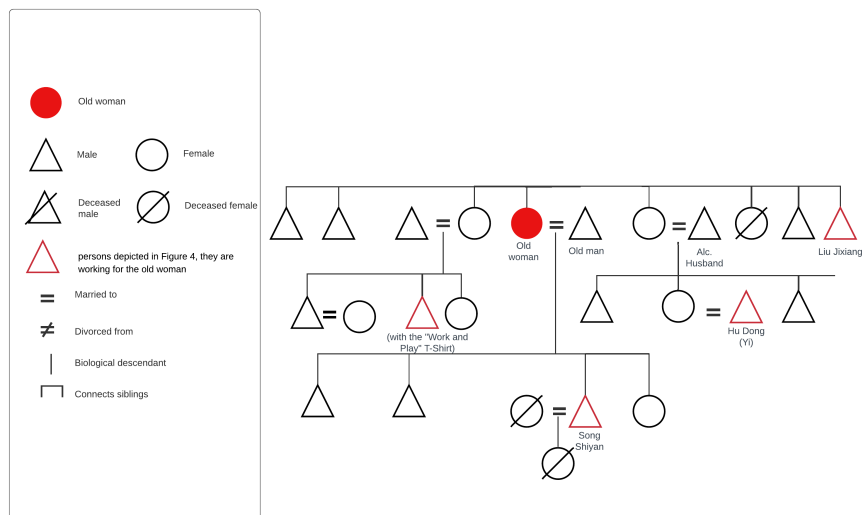


Figure 7: Kinship diagram highlighting the relationships between the workers and the owner of the fields (the old woman). Data: Rebekka Sutter

- Song Shiyang is their eldest son. Since both his wife and his daughter died, he moved back to his parent's household and supported the old couple both in terms of labor and monetary income. He is skilled in construction work and industrial cleaning and could earn a comparatively good salary. But the social situation (namely, his being not only the eldest son but also the only child without a family of his own) leads him to spend most of his time up in the hamlet working for his parents; it was their collective decision to keep both their and his land up in the mountains and try their best to continue cultivating the fields instead of sending their son to do wage labor.
- Liu Jixiang, who wears a white t-shirt in figure 4, is the youngest brother of the old woman. He is the uncle of Song Shiyang, but age-wise, they could be brothers – and such is the character of their relationship.
- Hu Dong, who sits highest on the slope, is the old woman's sister's daughter's husband. He is not Lisu, but belongs to the Yi minority. He has a sad history of domestic violence, and the family has tried several times to force him to get a divorce. However, manpower during spring is so urgently needed that he not only came back to stay with his wife and children but continued to work for the old woman.
- The young man in the grey "work & play" shirt is the husband of the daughter of another sister of the old woman. He lives with his family in a neighboring village.

Notably, except for Liu Jinxing's family, all of these families are registered as "pínkǔ" households, signifying that their income lies below the Chinese official poverty line.

There is, of course, much to add to draw a nuanced picture of the socioeconomic situation and the relationships at play here. We argue that, to understand how Lisu communities strategically navigate rigid state orders to pursue their own livelihoods on the slopes of the Salween valley, it is critical to look beyond the nuclear family and focus on the reciprocal labor exchange within (female) descent groups. Relationships of reciprocal exchange – as practiced in earlier swiddening systems – provide the basis for building flexible livelihoods in precarious times and for dealing with seasonal labor peaks that often cannot be planned precisely in advance.

The coordinated pooling of labor is also directly reflected in the way villagers cultivate the steep slopes under the state-monitored land conversion program. In Yunnan, the program was set up parallel to a poverty alleviation program, where the state offered incentives<sup>26</sup> for Lisu to convert former swidden land into state-controlled ecological forest land, fodder maize fields, and walnut plantations.<sup>27</sup> Against the theoretical background on ongoing forms of struggle, contestation, and negotiation with the state in Zomia sketched above, we complete this case study with a closer look at how Lisu villagers concretely transform "state-ordered walnut plantations" into "cash cropping walnuts as former swidden communities on the steep slopes of the Salween valley."

---

<sup>26</sup> In the first phase of the land conversion program it was payments in kind, later in the form of annual monetary subsidies (Xu et al. 2004).

<sup>27</sup> The program distinguishes three different types of (converted) land: "ecological forest" (no extraction of timber or non-timber-products is allowed), "dual-function forests" (cash cropping trees such as walnuts) and crop fields (such as fodder maize). The fact that crop trees are categorized as forests has consequences for official afforestation statistics. Details on this highly problematic issue: Cf. Zinda & He 2020: 1058.

To understand how Lisu farmers have continuously adopted and adapted to state-authored transformations over the last twenty years and – at least with regard to walnut plantations – have even managed to bypass state-ordered instructions, it is crucial to note that the Lisu have a long history of cultivating walnut trees. In their former swidden fields, they used to plant single walnut trees at the edges of fields. Taking care (or rather, not actively taking care) of these trees was very different from managing cash crop plantations. Moreover, the traditional tree varieties are not identical with those of today. But the fact that it is still basically the same tree obviously led them to agree to the deal offered<sup>28</sup> by the state. Liu Jinxing expressed that he felt he was more of an expert at distributing the walnut seedlings than the officers from local tree nurseries: “I was telling myself: Walnuts? That’s easy. We could make a lot of money. The only problem is: walnut *plantations* won’t work. In this soil, you can’t plant only walnuts. That’s why we started to plant walnut trees in our barley fields.”<sup>29</sup> Liu Jinxing’s enthusiasm and experience in grafting the local traditional walnut variety with the new variety was decisive for his and other neighboring villages, where he regularly visits family.

As a result of Liu Jixiangs’ initiative and continuous effort in organizing high-quality seedlings and taking care of freshly grafted trees, most of the families in the villages have converted at least part of their lands from swidden fields to walnut plantations. Accordingly, on the official forms that hang in front of every house, the corresponding line reads “dual-function forest: walnut” instead of “dry mountain field.” It is important to note that it took ten years of tenacious discussion between villagers and local officers to come to decisions and then to successfully plant the walnut trees. After another five years of “prosperous” walnut planting, there are (apart from Liu Jixiang) a handful of other farmers who are skilled at turning the trees into a cash crop. However, as the following pictures illustrate, the subjects meant to be governed resisted subtly or “artfully,” as James Scott (1985, 2009) put it.

---

<sup>28</sup> Officially, the land conversion program has never been compulsory – apart from the ban of swidden fields.

<sup>29</sup> Walnut trees produce the chemical juglone that seeps via roots and fallen leaves into the soil. If there is no manuring or intercropping microbial soil quality of walnut plantations will decline rapidly (personal communication from Lisu farmers, spring 2017).



Figure 8: Today's plots under the land conversion program obviously resemble the former swidden fields: Instead of state-prescribed monocrop plantations, Lisu farmers started intercropping barley with walnut trees. The patchy field design follows the natural topographic features of the slope. Photo: Rebekka Sutter

Even in today's transformed landscape, this resistance is clearly visible when looking at the layouts of these fields (all of which are "forests" according to the official registration, cf. footnote 28): there is surprisingly much left of the character of swidden fields even though these steep lands are "converted land." The above picture shows plots that are officially registered as walnut plantations with a propagandized triple function of stabilizing the soils in this rugged terrain, sequestering carbon, and yielding cash crops (Zinda and He 2020). Remarkably, Lisu families voluntarily agreed to convert these lands and follow the detailed, standardized protocol for how to plant the walnut seedlings and take care of them. What reads, at first glance, as a simple contract with no space for the minority farmers to experiment or negotiate with state authorities turned out to be a space of contestation and resistance. Co-laboring with Lisu families in these fields through the different seasons of an agricultural year revealed huge gaps between the official record (plot size, number of planted seedlings, household income), the status of converted land (converted, not yet converted, planned to be converted), the technical details of cultivation (type and origin of seedlings, distances of planting the seedlings, use of fertilizer, etc.), and the actual practices of the villagers. The following examples illustrate this general observation:

- On paper, there is always only one crop per plot, whereas, in reality, farmers almost exclusively practice mixed cropping and intercropping.<sup>30</sup> According to the land

---

<sup>30</sup> In a mixed cropping system, seeds are being mixed before they are sown—usually by broadcast sowing without following columns or patterns (e.g. fodder maize with beans). In an intercropped system, sowing/planting of the different crops is grouped in different columns or patterns, and the different crops are not sown/planted at the same time (e.g. barley with walnut trees).



conversion program, intercropping is strictly forbidden during the first ten years because it makes it more difficult to discern what is produced on a single plot. Families were thus regularly fined, but they continued with intercropping, since they were convinced that they would make more money in the long run, as intercropping would result in more favorable crop yields. Subsequently, local officers started to enforce this basic rule more flexibly.

- A similar story happened with regard to mulching the walnut trees – a fertilizing technique that they formerly practiced on swidden lands. As with the use of intercropping, farmers were fined, and officers threatened to immediately stop subsidies. But after a couple of years, when officers noticed the surprisingly high per-tree-yields, they started to accept the farmers' mulching.
- On paper, there is a minimum plot size of  $\frac{1}{3}$  *mu* (223 m<sup>2</sup>) that allows for a reasonable calculation of land ownership per household. In reality, plots are often tiny (often just 3 x 5 m) and of irregular layout, which varies every single year according to the terrain, weather, and soil conditions as well as the available labor force, seeds, and seedlings. In addition, many Lisu villagers share the sheer joy of experimenting with special seeds that have been foraged, acquired at markets, or received from friends.
- Villagers not only systematically ignored planting distances as recommended by state officials, but they also planted the seedlings selectively instead of opening large monoculture fields. This strategy, which was rooted in a general mistrust towards a monoculture conversion, proved to be very wise: from 2016 on, market prices of walnuts dropped, and Lisu farmers could luckily rely on other income sources.

Here is a second, closer look at the landscape:



Figure 9: Barley fields underneath walnut trees, a prohibited combination in plantations under the land conversion program. Photo: Rebekka Sutter

Here, barley grows under walnut trees, which is strictly forbidden according to the program. In other corners of the steep fields, villagers plant different varieties of zucchini, pumpkin, and gourds and even intercrop the maize with several varieties of beans. Also, plots that are supposed to be exclusively for a single harvest of fodder maize are cultivated with peas in early spring, and fields continue to “grow” into forest land.



Figure 10: Peas, soya beans, and fodder maize are planted on rotation and not always on neatly demarcated plots. Photo: Rebekka Sutter

Instead of neat rectangular plots, farmers make use of the natural topography and strategically keep tiny plots with sliding crop rotation to confuse the monitor officers about the real size of the plots, the cultivated area, and the amounts of harvested crops. The only thing that is strictly followed by any villager is that there is no burning of cut forest anymore.

Government officials reluctantly allow the villagers some freedom in how to cultivate the assigned crops and trees as long as the harvest levels meet their calculations. Obviously, the steep terrain itself works in favor of the farmers, since it hinders officers from making regular visits and inspections on the ground: a truckable road was built in 2017, but due to monsoon rains and landslides, it has not been reliably and continuously kept open since then. So, in the best case scenario, the 1,500 meters from the bottom of the valley can be traversed by motorcycle. Especially during the rainy summer months, villages are accessible only by foot.

It is important to note, however, that the villagers are not resisting the state for the joy of it, and they very much appreciate the efforts at road construction. We claim that it is their in-depth and *local* knowledge of how to sustainably cultivate steep terrain, as well as their attachment to the place, that leads them to bend rules and restrictions. Highly adapted systems of cultivation like the ones of the Lisu require a specific, efficient, and reliable social organization – namely, one that is based on reciprocal labor exchange within descent groups. In the village where Sutter conducted research, villagers even

pooled the subsidies that were granted to individual households and re-distributed them at their own discretion.



Figure 11: A late-night village meeting over last year's granted subsidies. Photo: Rebekka Sutter

In other words, the official version of what happened to former swiddeners in the Salween valley in the last twenty years sounds devastating: a sudden ban on swidden agriculture, the strict state-ordered land conversion to agricultural systems that were new to Lisu farmers, the “failure” of cash cropping walnuts as well as a general unwillingness to convert mountain lands, and finally, the state-ordered migration of poor families down to the bottom of the valley in 2019.

However, time spent in the actual fields with Lisu families working on this decade-long transformation effort produces a more nuanced picture: these families have been far from passively accepting of the above-mentioned orders from the state. They are also far from rebelling or revolting against the state. And in their view, the push for cash cropping walnuts was not a complete failure and appeared to be a profitable strategy for them after all. Nevertheless, as strongly networked communities of practice, they strategically navigate and “negotiate” with state authorities: while they seldom do so verbally, they act in and with their fields, continuously observing to what degree state authorities are tolerating their subtle acts of resistance.

### **Planting Trees to Make Land Claims: The Everyday Resistance of Bunong Swiddeners**

In Cambodia, indigenous Bunong swiddeners from Bu Sra have lost a large part of their territory – 17,000 hectares – to rubber plantations owned by international companies since

2008. As concessions to these companies, the Cambodian state signed away large tracts of land for the duration of seventy-five years. As a result, the Bunong had to shift in the last ten years from cultivating rice to cultivating rubber and other perennial cash crops like coffee and pepper. Remarkably, the Bunong did not switch to monocultures, but reworked the new cash crops into diversified agroforestry systems. Observing these fast changes, we shall now explore what insights we gain on this transformation when we turn our ethnographic gaze to interactions in the village, in the commune hall, in the offices of the plantation and focus on what happens in the actual fields.

We now turn our attention to observations made in the village, in the commune hall, and in the air-conditioned rooms of the plantation, where affected Bunong villagers discuss land issues, prepare and make complaints to the government, organize protests and riots, negotiate with company management, and follow complicated procedures to claim a land title that may, one day, protect their land from dispossession. Turning our attention to these places, we notice that Bunong claims are slowed down and even brought to a halt due to bureaucratic red tape (see Leemann 2021).



Figure 12: Community meeting to complain about the terms of a contract with a rubber company, Commune Hall, Bu Sra Commune. Photo: Prak Neth



Figure 13: Bunong villagers bring their complaints to a rubber company, Bu Sra Commune. Photo: anonymous villager



Figure 14: Villagers meet an EU delegation and representatives of various NGOs, village hall from Pu Lu, Bu Sra Commune. Photo: Prak Neth



Figure 15: Village meeting to discuss land conflicts with rubber companies, village hall from Pu Lu, Bu Sra Commune. Photo: Prak Neth

In these rooms, it soon becomes clear to the observer that indigenous swidden cultivators like the Bunong are seen in very particular ways: in this sphere, “seeing like a state” (Scott 1998) is prominent, as is “seeing like an organization” – be it a national, international, or UN organization engaged in defending indigenous rights. These ways of seeing have in common that they are remarkably detached from insights to be gained outside the rooms and village halls in the actual fields. Yet, we do ethnographic fieldwork in these rooms and document peoples’ despair, anxieties, and frustration, and we notice the depression, violence, suicides, and alcoholism in their homes. We also document the resistance, the resilience, the determination, the ingenuity, and the endurance in this struggle for indigenous territory as much as the exhaustion and tiredness one experiences when one is stuck in a merciless and unwinnable fight against Goliath; in Bunong terms, eggs don’t crush rocks but get crushed. And yet, Bunong villagers continue to resist, for there is just so much at stake.

As Harold Conklin claimed in his seminal work in the 1950s, swidden cultivation is more than a livelihood – it is a way of life. That is why we turn our ethnographic gaze to the fields of the Bunong. By doing fieldwork in the fields, we focus on what the Bunong have been doing day after day for years when they are not sitting in a room discussing land issues. We gain a different view of the land conflict, how the agrarian transformation is experienced by the Bunong, and how they resist the attempted erasure of their way of life and identity. We notice all that is being preserved, adapted, introduced, and ventured. We realize that what is happening in the fields is all highly political: it is what James Scott calls everyday resistance.

Only ten years ago, Bunong interlocutors unanimously stated that swidden cultivation was at the heart of their identity as a distinct people: “What is at the root of our identity (*nau kley*), what defines us as Bunong, is making a swidden field (*mir*).”



Figure 16: Harvesting maize cobs in a swidden field, Bu Sra Commune, Cambodia. Photo: Prak Neth



Figure 17: The joy of harvesting. Photo: Prak Neth

Shifting cultivation together with their own language set the Bunong apart from the Khmer majority in Cambodia. In 2008, all 802 Bunong families in Bu Sra Commune were engaged in swidden cultivation. Then, rubber plantations began to take over Bunong land in a land grab authorized by state policies aimed at modernizing, developing, and increasing the productivity of the agrarian sector in remote areas. Growing land scarcity made it increasingly difficult to find forested land to rotate fields. Bunong swiddeners began to permanently cultivate all their remaining fields to demonstrate that they owned the land (Leemann and Nikles 2017). As villagers stated: "We will not leave our land fallow anymore. Because there is no more land available and we want to secure our fields. If we leave it fallow, somebody else might take and use it." (Bunong man, 54 years, Pu Cheng village). Permanent cultivation promised to be an effective way to demonstrate that fallow swidden fields, which look like any other forested patch to the untrained eye after a few years of lying fallow, belonged to Bunong families. In 2021, only 34 of the 1,079 Bunong families were making swidden fields; 97% of families switched to permanent agriculture, which meant a huge agrarian change within a very short time involving the adoption of new crops and new cultivation techniques, the use of fertilizer (organic and chemical) and new forms of pest control, and new ways of processing and marketing the new crops.

The move of swiddeners to lay claim to land by making their fields visible was aptly described by Dove (2012) in the case of swiddeners in Kalimantan. Drawing on Scott's assertion of Zomia as a refuge, Dove showed that swiddeners very often chose to remain invisible, because visibility is usually a trap, but "when invisibility fails to protect native resources, they may seek visibility as an antidote" (Dove 2012: 16). Dove describes the non-native *Hevea* rubber as an ideal vehicle to establish proprietary rights to the land on which the rubber is planted.<sup>31</sup> Similarly, it is known from Sumatra that local people lacking official land titles have commonly planted rubber on a prophylactic basis when government land-clearing programs were in the offing (Gouyon, de Foresta, and Levang (1993); Angelsen 1995). Cooke (2002) even termed the planting of oil palms by the Dayak people ahead of the expansion of oil palm companies into their territories as "strategic agriculture."

In the case of the Bunong, the approach of shortening the fallow period and cultivating the land permanently, first with annual and then with perennial crops such as rubber, proved more effective in asserting their land claims than the government's indigenous land titling program. Land titling has remained stuck on a bureaucratic treadmill, leaving indigenous lands without formal protection to this day. By switching to permanent cultivation of cash crops like cassava, pepper, coffee and even rubber, Bunong swiddeners make a claim on the ground: this land is ours.

---

<sup>31</sup> Dove (2012) showed that it was the cultivation specifically of the for Kalimantan exotic *Hevea* rubber, that allowed smallholder swiddeners to claim recognition of proprietary claims, because – other than for native rubber species – *Hevea* rubber are clearly planted trees: "If the tree is an exotic, so much the better, since it could not be anything but planted" (Dove 2012: 90).





Figure 18: Carrying rubber seedlings to a swidden field meant to be permanently cultivated, Bu Sra Commune. Photo: Prak Neth



Figure 19: Planting rubber seedlings in a former swidden field, Bu Sra Commune. Photo: Prak Neth



Figure 20: A Bunong rubber plot, which looks a lot like a swidden field with its intensively green rice plants, corn, tobacco, and cassava under rubber trees, Bu Sra Commune. Photo: Prak Neth

Bunong rubber plots clearly stand out from rubber plantations. They are highly diversified and resemble swidden fields with their different varieties of rice, corn, peanuts, vegetables, and fruit trees, which grow well under the rubber trees as long as the latter are small and do not provide much shade. When the canopy of the rubber tree grows high enough to prevent enough light from reaching the ground, shade coffee is grown underneath it, and chickens and pigs are raised. These complex agroforestry systems were developed over the last ten years by the former swiddeners with technical support from a Bunong grassroots organization, while the government agricultural extension service totally neglected the Bunong farmers.

With her research collaborator Prak Neth, Leemann spent a lot of time over the years writing fact sheets, press releases, and complaints related to the land conflict between the Bunong communities and the rubber companies. But when asked how things are in Bu Sra, Prak Neth usually sends a myriad of pictures of seedlings and pepper, coffee, and rubber plants, as well as pictures of the harvest of carrots, eggplants, pumpkins, peppers, coffee, rubber, beehives, and honey – and not a single one of a meeting room. Bunong life is still centered on creating agrarian worlds.



Figure 21: Bunong former swiddeners learn from a Bunong grassroot organization how to diversify their permanent fields, Bu Sra Commune. Photo: Prak Neth

Under the rubber trees, the Bunong often work side by side in communal working groups. Unlike Cramb et al. (2009: 331), we have found that the demise of swiddening has not led to a radical decline in social and cultural cohesion or the people's sense of identity. Cohesion has declined, and bringing people in for collective work has become more difficult (Scheer 2017). Yet, not only old, but also young Bunong care for and foster relationships with communal working groups and the environment so that abundance and plenty may follow in all aspects of life (see also Leemann and Nikles 2017).



Figure 22: Rice harvest under rubber trees, Bu Sra Commune. Photo: Prak Neth

Ceremonial parts of the Bunong way of life are adhered to, such as the spring ceremony that marks the beginning of the gathering of wild honey. Even in permanent fields under rubber trees, the rice spirits are called forth before the harvest from all the places where they are known to live, places that the Bunong have protected from being cleared and covered with rubber by the large-scale companies. Ceremonies are also transferred to new contexts, such as the rice ceremony that used to be celebrated for hill rice but is now also held for wet rice. And people are even thinking about inventing a harvest ceremony for the perennial rubber and coffee.



Figure 23: Bunong villagers continue to conduct rice ceremonies and call the spirits even under rubber trees, Bu Sra Commune. Photo: Prak Neth

## Conclusion

At first glance, the People's Republic of China and Cambodia have little in common apart from their geographical proximity and multi-ethnic population. Nevertheless, we compared the Lisu's and Bunong's forms of adaptation and resistance to land transformation, arguing that, despite marked differences between our two case studies, they both emerge from van Schendel's Zomia, which spans beyond national borders. In fact, Chinese and Cambodian minorities share a lot when we look at everyday practices in (former) swidden fields. Taking inspiration from Scott's arts of not being governed (2009) and of resistance (1990), we explored the ways communities deal with forced agricultural transformation.

The Lisu case shows that, although there is not a single *mu* of swidden land left, social structures of swidden agriculture not only persist but offer a crucial resource in the rapidly and radically transforming agricultural worlds of steep slope cultivators. It is the *socia*/landscape that connects individuals beyond nuclear families and hence diminishes poor families' precarious situations in a substantial way. The case study illustrates how the persisting sociality, of which we highlighted the reciprocal labor organization along female descent groups, acts as an effective instrument to (at least partly) resist radical policy implementations.

"Field"-work in Cambodia shows that, although there are hardly any swidden fields left after a decade of rapid agrarian change, much of what made up the Bunong swiddeners' way of life is still present in daily practices. We understand the Bunong swiddeners' shift to the permanent cultivation of rubber and other tree crops as a form of strategic agriculture. The state gave away large tracts of Bunong territory to plantation companies, and settlers from the lowlands followed. The Bunong resist this state-licensed encroachment on their indigenous land in everyday life by planting rubber. This has proven to be a fairly effective way of making the territorial claim visible to outsiders. The highly diversified agroforestry systems that the Bunong have developed on their own over the past decade are a testimony to their resistance.

Observations gained through fieldwork at two different sites in the Zomia highlands show two different nuances of how former swiddeners deal with state authority: while the Bunong situation is characterized by resistance, in case of the Lisu, it is more about shrewdly navigating state interventions. What both have in common is that these forms of adapting, resisting, and partly evading the state are rooted in *practices* of planting, weeding, and harvesting in actual fields (van der Ploeg 2007).

We opened this collection of reflections on fields of anthropology and fieldwork with the provocation of what we would gain or lose when focusing on actual fields instead of approaching agrarian worlds from less grounded perspectives. We presented insights gained from fieldwork in former swidden fields that contradict simple narratives about the disappearance of swidden fields, highlighting the people's resistance and resourcefulness as well as the continuity and persistence of social landscapes.

The Lisu case showed a sharp contrast between official, internationally communicated narratives about the successful recent transformation of Southwest China in the context of the land conversion program and local forms of partial adoption, adaptation, and government circumvention. Observing the daily agricultural practices of Lisu farmers who cultivate slopes that are so steep that they are categorized as "uncultivable" and sharing their daily lives paints a markedly different picture. Hence, we claim that a view from the field shows that, although the state ordered a radical transition, swidden-specific social structures and ways of planning and working endure.

The Bunong case showed that we gain contrasting insights from fieldwork in rooms and fields. In air-conditioned rooms, Bunong claims get stuck and are brought to a standstill, while on the remaining Bunong fields, there are extremely dynamic processes going on as the Bunong adapt, rework, and also preserve their agrarian world. To some extent, the commune hall and plantation office are the places where the land conflict is most visible, but also where it is most bound up in red tape, stalled, slowed down, and frustrated in various ways. By returning to the Bunong fields, we show how the crops that

are planted really matter to the way in which the struggle for land is pursued. It is not only what happens in the commune hall or the plantation offices that matters for what happens in the fields, but the reverse is also true. The Bunong create a reality in the fields that cannot be overlooked so easily.

The paper made two different moves at the same time. On the one hand, we pointed to the questions and horizons that can open up when one literally works in a (swidden) field. In this sense, we hope to contribute to the lively discussion of agrarian transformation in Zomia. On the other hand, we called for the forms of insight and understanding that only come through immersive, intensive fieldwork that looks beyond simple narratives (in our case, those surrounding land conversion programs) and teases out the complexities of change. In an era in which world agriculture stands at a crossroads, we call for more studies following Harold Conklin's legacy – namely, for "fine descriptions" (Kuipers and McDermot 2007) grown from working in the fields and sharing the mundanities of daily life with farmers.

## References

- AIPP, ed. 2015. *Indigenous Peoples in ASEAN: Cambodia*. Chiang Mai: AIPP.
- Angelsen, Arild. 1995. "Shifting cultivation and "Deforestation": A Study from Indonesia." *World Development* 23 (10):1713–1729.
- Atran, Scott. 1993. "Itza Maya Tropical Agro-Forestry." *Current Anthropology* 34 (5):633–699.
- Cairns, Malcolm, ed. 2015. *Shifting Cultivation and Environmental Change: Indigenous People, Agriculture and Forest Conservation*. London and New York: Routledge.
- Cairns, Malcolm, ed. 2017. *Shifting Cultivation Policies: Balancing Environmental and Social Sustainability*. Oxfordshire: CABI.
- Cherrier, Justine, Shree Kumar Maharajan, and Keshav Lall Maharajan. 2018. "Shifting Cultivation: Misconception of the Asian Governments." *Journal of International Development and Cooperation* 24 (1&2):71–82.
- Condominas, Georges. 1977. *We Have Eaten the Forest: The Story of a Montagnard Village in the Central Highlands of Vietnam*. London: Allen Lane.
- Conklin, Harold C. 1957. *Hanunóo Agriculture: A Report on an Integral System of Shifting Cultivation in the Philippines*. Rome: FAO.
- Cooke, Fadzilah M. 2002. "Vulnerability, Control and Oil Palm in Sarawak: Globalisation and a New Era." *Development and Change* 33 (2):189–211.
- Cramb, R.A., Carol J. P. Colfer, Wolfram Dressler, Pinkaew Laungaramsri, Quang Trang Le, Elok Mulyoutami, Nancy L. Peluso, and Reed L. Wadley. 2009. "Swidden Transformations and Rural Livelihoods in Southeast Asia." *Human Ecology* 37 (3):323–346.
- Dove, Michael R. 1985. *Swidden Agriculture in Indonesia: The Subsistence Strategies of the Kalimantan Kantu*. Berlin: Mouton.
- Dove, Michael R. 1993a. "Smallholder Rubber and Swidden Agriculture in Borneo: A Sustainable Adaptation to the Ecology and Economy of the Tropical Rainforest." *Economic Botany* 47:36–47.
- Dove, Michael R. 1993b. "Uncertainty, Humility and Adaptation in the Tropical Rainforest: The Agricultural Augury of the Kantu." *Ethnology* 32:145–167.
- Dove, Michael R. 2012. *Banana Tree at the Gate: A History of Marginal Peo: A History of Marginal Peoples and Global Markets in Borneo*. New Haven: Yale University Press.
- Dressler, Wolfram, David Wilson, Elizabeth Clendinning, Rob Cramb, Rodney Keenan, Sango Mahanty, Thilde B. Bruun, Ole Mertz, and Rodel D. Lasco. 2017. "The Impact of Swidden Decline on Livi-

- hoods and Ecosystem Services in Southeast Asia: A Review of the Evidence from 1990 to 2015." *Ambio* 46:291–310. doi: 10.1007/s13280–016–0836-z.
- Ellen, Roy F. 1978. *Nuaulu Settlement and Ecology. An Approach to the Environmental Relations of an Eastern Indonesian Community*. Vol. 83. The Hague: Martinus Nijhoff, Verhandelingen van het Koninklijk Instituut voor Taal-, Land- en Volkenkunde.
- Ellen, Roy F. 1982. *Environment, Subsistence and System: The Ecology of Small-Scale Social Formations*. London: Cambridge University Press.
- FAO. 2021a. *World Food and Agriculture: Statistical Yearbook 2021*. Rome: FAO.
- FAO. 2021b. *Global Review of Agricultural Census Methodologies and Results (2006–2015)*. *World Programme for the Census of Agriculture 2010, FAO Statistical Development Series* No. 18. Rome: FAO.
- Frake, Charles O. 1955. *Social Organization and Shifting Cultivation among the Sindangan Subanon*. New Haven: Yale University.
- Freeman, Derek. 1955. *Iban Agriculture: A Report on the Shifting Cultivation of Hill Rice by the Iban of Sarawak*. London: Her Majesty's Stationary Office.
- Gouyon, Anne, Hubert de Foresta, and Patrice Levang. 1993. "Does 'Jungle Rubber' Deserve its Name? An Analysis of Rubber Agroforestry Systems in Southeast Sumatra." *Agroforestry Systems* 22 (3):181–206. doi: 10.1007/BF00705233.
- Gros, Stéphane. 2014. "The Bittersweet Taste of Rice: Sloping Land Conversion and the Shifting Livelihoods of the Drung in Northwest Yunnan (China)." *Himalaya, the Journal of the Association for Nepal and Himalayan Studies* 34 (2):81–96.
- Gupta, Akhil, and James Ferguson. 1997. "Discipline and Practice: 'The Field' as Site, Method, and Location in Anthropology." In *Anthropological Locations: Boundaries and Grounds of a Field Science*, edited by Akhil Gupta and James Ferguson, 101–140. Berkeley, Los Angeles, London: University of California Press.
- Harris, Mark, ed. 2007. *Ways of Knowing: Anthropological Approaches to Crafting Experience and Knowledge*. New York, Oxford: Berghahn Books.
- Harwood, Russell. 2014. *China's New Socialist Countryside: Modernity Arrives in the Nu River Valley*. Seattle and London: University of Washington Press.
- Jiang, NiNgsang, Peng Li, and Zhinming Feng. "Remote Sensing of Swidden Agriculture in the Tropics: A Review." *International Journal of Applied Earth Observation and Geoinformation* 112: online. doi: 10.1016/j.jag.2022.102876.
- Kuipers, Joel, and Ray McDermot, eds. 2007. *Fine Description: Ethnographic and Linguistic Essays by Harold C. Conklin*. New Haven: Yale University Southeast Asia Studies.
- Leach, Edmund. 2004 [1954]. *Political Systems of Highland Burma*. Oxford and New York: Berg.
- Leemann, Esther. 2021. "Who Is the Community? Governing Territory through the Making of 'Indigenous Communities' in Cambodia." *Geoforum* 119:238–250. doi: 10.1016/j.geoforum.2019.10.014.
- Leemann, Esther, and Brigitte Nikles. 2017. "Giving up Fallows an Indigenous Swiddens in Times of Global Land Grabbing." In *Shifting Cultivation Policies: Balancing Environmental and Social Sustainability*, edited by Malcolm Cairns, 618–635. Oxfordshire and Boston: CABI.
- Mazard, Mireille. 2014. "The Art of (not) Looking Back: Reconsidering Lisu Migrations and "Zomia"." In *Globalising Migration History: The Eurasian Experience (16th–21st Centuries)*, edited by Jan Lucassen and Leo Lucassen, 215–246. Boston and Leiden: Brill.
- Mertz, Ole, and Tilde Bech Bruun. 2017. "Shifting Cultivation Policies in Southeast Asia: A Need to Work With, Rather Than Against, Smallholder Farmers." In *Shifting Cultivation Policies*, 27–42. Oxfordshire: CABI.
- Mertz, Ole, R. A. Cramb, Stephen J. Leisz, Nguyen Thanh Lam, and Tran Duc Vien. 2009a. "Swidden Change in Southeast Asia: Understanding Causes and Consequences." *Human Ecology* 37 (3):259–264.
- Mertz, Ole, R. A. Cramb, Stephen J. Leisz, Nguyen Thanh Lam, and Tran Duc Vien. 2009b. "Who Counts? Demography of Swidden Cultivators in Southeast Asia." *Human Ecology* 37 (3):281–289.
- Michaud, Jean. 2010. "Editorial: Zomia and Beyond." *Journal of Global History* 5 (2):187–214.

- Pollini, Jacques. 2014. "Slash-and-burn Agriculture." In *Springer Reference: Encyclopedia of Food and Agricultural Ethics*, edited by Paul B. Thompson and David M. Kaplan, 1–11. Dordrecht: Springer.
- Scheer, Catherine. 2017. "New Life in an Expanding Market Economy: Moral Issues among Cambodia's Highland Protestants." In *New Religiosities, Modern Capitalism, and Moral Complexities in Southeast Asia*, edited by Juliette Koning and Gwenaël Njoto-Feillard, 65–88. Singapore: Palgrave Macmillan.
- Scott, James. 1985. *Weapons of the Weak: Everyday Forms of Peasant Resistance*. New Haven: Yale University Press.
- Scott, James. 1990. *Domination and the Arts of Resistance: Hidden Transcripts*. New Haven and London: Yale University Press.
- Scott, James. 1998. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven and London: Yale University Press.
- Scott, James. 2009. *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*. New Haven and London: Yale University Press.
- Scott, James. 2021. "Response: Works and Days." *The Journal of Asian Studies* 80 (2):439–445. doi: 10.1017/S0021911821000681.
- Seshia Galvin, Shaila. 2018. "Interspecies Relations and Agrarian Worlds." *Annual Review Anthropology* 47:233–249.
- Sturgeon, Janet C. 2005. *Border Landscapes: The Politics of Akha Land Use in China and Thailand*. Seattle and London: University of Washington Press.
- Tabain, Marija, David Bradley, and Defen Yu. 2019. "Central Lisu." *Journal of the International Phonetic Association* 49 (1):online. doi: 0.1017/S0025100318000129.
- Tsing, Anna Lowenhaupt. 1993. *In the Realm of the Diamond Queen: Marginality in an Out-of-the-Way Place*. Princeton: Princeton University Press.
- Tsing, Anna Lowenhaupt. 2005. *Friction: An Ethnography of Global Connection*. Princeton and Oxford: Princeton University Press.
- Van der Ploeg, Jan Douwe. 2007. "Resistance of the Third Kind and the Construction of Sustainability." Paper presented to the ESRS Conference, 23 August 2007 in Wageningen.
- Van Schendel, Willem. 2002. "Geographies of Knowing, Geographies of Ignorance: Jumping Scale in Southeast Asia." *Environment and Planning D: Society and Space* 20:647–668. doi: 10.1068/d16s.
- Xu, Zhigang, Michael T. Bennett, Ran Tao, and Jintao Xu. 2004. "China's Sloping Land Conversion Programme Four Years On: Current Situation, Pending Issues." *International Forestry Review* 6 (3–4):317–326.
- Yin, Shaoting (尹绍亭). 2001. *People and Forests: Yunnan Swidden Agriculture in Human-Ecological Perspective*. Translated by Magnus Fiskesjö, Border Cultures Series. Kunming: Yunnan Education Publishing House.
- Zinda, John Aloysius, and Jun He. 2020. "Ecological Civilization in the Mountains: How Walnuts Boomed and Busted in Southwest China." *The Journal of Peasant Studies*. 1–25. doi: <https://doi.org/10.1080/03066150.2019.1638368>.