

Yogic Ecology? Spirituality, Science, and Pseudoscience in Indian Agroecological Movements for Soil Health

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Abstract

The chapter examines the role of religion and spirituality in sustainable agriculture in India. Through case studies of figures like Albert Howard, Masanobu Fukuoka, Subhash Palekar, and yoga gurus Sri Sri Ravi Shankar and Sadhguru, it explores how religious and spiritual idioms contribute to agroecological movements' critiquing modern agronomy's reductionist approach and highlighting the ecological and political-economic costs of the Green Revolution. The paper discusses the ontological politics of living soils and the potential of spiritually inspired agroecology to foster sustainable human-nature relationships. It concludes that while spiritually informed natural farming can challenge extractive practices, the impact varies based on the integration of spirituality into agricultural methods.

Keywords: Agroecology, agriculture, gurus, spiritual critique, greenwashing, ontological politics

Introduction

As agriculture's lack of environmental and economic sustainability is dawning on communities across India, the question arises about the cultural and social resources that can be used for its ecological renewal.¹ In light of this, this chapter examines the role religion can (and does) play in a sustainable transformation of agriculture in India, a sector consisting largely of small-scale farming.

In recent years, many authors have written about the end of hegemony and consent in Indian agricultural science and practice. Many farmers and scientists have come to question the assumed truth of the claims of modern agronomy, including the claimed superiority of hybridized seeds and animals, and the need for artificial fertilizers for the management of soil health. Such truth claims are based on foundational assertions about how to understand and measure soil properties to such an extent that they can be said to have ontological effects. One particularly salient ontological effect of modern agronomy is that it produces a reality in which soil becomes inert

matter, a physical-chemical substrate in need of chemical management. Currently, however, the shared consensus on agronomy among farmers, scientists, and policymakers has been lost. Defined as the “scientific and intellectual endeavor that seeks to understand and affect the biological, ecological, physical, socio-cultural and economic bases of crop production and land management” (Sumberg, J. Thompson, and Woodhouse 2012, 1), agronomy faces contestations from within and outside the field. These contestations emerged in India as the political-economic (Cullather 2004; Moore 2015; Patel 2013) and ecological costs (D. Pimmentel and M. Pimmentel 1990; Shiva 1991) of the Green Revolution became evident in the fields and in the academy beginning in the late 1980s (Flachs 2016). As Sundberg et al. (2012) argue, the emergent critique of state-led development in general, and of the Green Revolution agronomy in particular, as being inefficient, undemocratic, and damaging to soils as living ecosystems has come from highly divergent actors driven by a range of different agendas, including neoliberal, participatory, and environmental ones. In this chapter, I focus on the latter and explore environmental criticism of (the Green Revolution) agronomy as brought forward by advocates of agrarian alternatives in India.

While sustainable agriculture movements have received a good share of scholarly attention, we know very little about how and in which idiom—including religious idioms—these contestations of and within agronomy unfold. Focusing on instances and genealogies of sustainable agriculture, I argue that religious and spiritual idioms have been an essential cultural and social resource for agroecological soil activism and what we might call ontological politics, a politics that contributes toward producing sustainable human-nature relationships by reworking peoples’ reality, including the reality of the soil. In the case of soil health, ontological politics works toward practices and understandings that enact soil as a living ecosystem. The prominent figures examined in this chapter display a religious idiomatic to varying degrees and with variegated boundaries between religious, nationalist, and scientific styles of argumentation.

Based on intermittent long-term fieldwork on alternative agriculture movements in India since 2013, combined with textual analysis of primary documents (online and printed) and targeted ethnographic fieldwork in South India in 2023, this chapter will introduce a range of agroecological engagements with soil health and discuss how key actors mobilize spirituality, tradition, science, and what some authors call pseudoscience, in pursuing their goal of establishing ecological ways of farming. The articulations of religious and scientific dissent from mainstream agriculture are very diverse in India and often expressed in variegated combinations by movements and their leaders. In this chapter I present a range of alternative sustainability-focused engagements with soil health by focusing on several public figures, all of whom happen to be men, and all of whom have left a considerable trail of written and audiovisual material.

Ontological Politics of Living Soils

In his book *Farmers, Subalterns, and Activists: Social Politics of Sustainable Agriculture in India*, geographer Trent Brown (2018) asks whether alternative agriculture movements are counterhegemonic struggles in a Gramscian sense. His conclusion is negative: “Sustainable agriculture in India is so imbricated within hegemonic relations that, more often, it forms a link in the chain of the corporate food regime, rather than a radical alternative to it” (Brown 2018, 178). Among the factors he identifies as limiting agroecology’s counterhegemonic force are its dependence on state institutions, non-state donor organizations, and the urban middle classes as consumers. None of these actors, Brown argues, necessarily have the best interest of the rural poor and India’s farming communities in mind. While I concur with this analysis from a class perspective, I want to shift attention to the ontological impact that alternative agriculture movements may have and put a lens on their engagement with science on the one hand, and with religion (Hinduism and Vedic traditions) on the other. This is not to say that religion and spirituality are a necessary component of alternative agriculture movements. Miguel Altieri, for example, defines agroecology as “the science of natural resource management for poor farmers in marginal environments” (Altieri 2002), that is, in exclusively scientific terms. However, both historically and today, alternative agriculture in India has had strong affinities to variegated religious and spiritual ways of being in the world, including, by association, affinities to nationalism and nativism.

With ontological politics, I refer to contestations about the “grounds and architecture” (Fortun 2014, 321) of knowledge and reality. Following critical traditions in science and technology studies, I am interested in challenges to agronomy that, by drawing on religious and scientific resources, might contribute to *enacting* different relationships between people, soils, animals and plants. In this chapter I ask to what extent spiritually inspired agroecology has the potential to challenge the ontological foundation of mainstream agronomy by inspiring novel practices of agricultural “world-making” (Woolgar and Lezaun 2013, 325); or whether it perhaps falls short of such far-reaching reorientations and remains within the realm of environmental philanthropy. I thus ask a twofold question: how do some branches of alternative agriculture in India draw on scientific and religious registers, and how are they utilizing religion for ecological world-making practices in agriculture?

I hold that the encounter of spirituality and agroecology in India is caught between two seemingly contradictory tendencies: the scientization of Hinduism on the one hand, and what we might call the Hinduization of science on the other. Both of these tendencies and projects have long been the cornerstones of claims to Hindu supremacy. Axel Michaels traces the claim that Hinduism, and in particular its spiritualities in the yoga tradition, are not based on dogma but on empirical

science going back to Swami Vivekananda (1863–1902), the “inventor of scientized yoga” (Michaels and Wulf 2020, 6). The flip side of that argument is the claim that many modern scientific achievements either have their origin in, or have been presaged in, the Vedas or by rishis, ancient yogic “seers.” Among the more amusing claims of this kind of rhetoric is that the elephant-headed God Ganesha is proof of advanced plastic surgery in ancient India. As many authors have pointed out, environmentalism in India, and agrarian environmentalism in particular, have suffered from affinities to anti-Western cultural critiques, an imagined Hindu past free of conflict and inequalities, and a generally backward-looking anti-science stance (Baviskar, Sinha, and Philip 2006; Brown 2018; Münster 2020; Nanda 2003).

Agroecological movements across the globe occupy an ambivalent space between revaluing and reinventing traditional knowledge, including religious beliefs, and reimagining a timeless past of ecological harmony, while at the same time embracing scientific advances in agroecology, soil science, microbiology, and plant science. The paradox I am chasing in this chapter refers to the tendency of agroecology to claim and demand epistemological and even ontological reorientations, and that these reorientations are based both on science and religion—in some cases simultaneously, in some hybridized, in others as code switching between registers of argumentation, and yet in other cases as a continuum or sliding scale of rigorous and non-rigorous styles of thought and practice. In this chapter I hope to show that alternative agriculture is a good arena for showing both nuances in and differences between specific blends of science and religion. My chapter does not present one case study but a selection of instances in which science/religion problematics have flared up in the work of five key figures in agricultural environmentalism who have all foregrounded new ontologies of soil: Sir Albert Howard, Masanobu Fukuoka, Subhash Palekar, Sri Sri Ravi Shankar, and Sadhguru. I begin with Sir Albert Howard, a scientific critic of agricultural sciences, who introduces the idea of a misguided “mentality” being the foundation of destructive forms of soil care. I present his contribution as case for a non-religious ontological critique of agronomy.

Albert Howard: Agroecology and the Question of Mentality

In his book *An Agricultural Testament*, published in 1945, Albert Howard (2013 [1940], 18) called out industrializing agriculture for what he calls the “NPK mentality,” which according to him, had begun dominating “farming alike in the experimental stations and the countryside.” Howard (1873–1947), who is widely regarded as a pioneer of agroecology in India, understood the NPK mentality as an emerging

“Western” paradigm that combined chemicals of war (ammonia) with a simplified notion of soil nutrition based on synthetic fertilizers:

The feature of the manuring of the West is the use of artificial manures. The factories engaged during the Great War in the fixation of atmospheric nitrogen for the manufacture of explosives had to find other markets, the use of nitrogenous fertilizers in agriculture increased, until today the majority of farmers and market gardeners base their manurial programme on the cheapest forms of nitrogen (N), phosphorus (P), and potassium (K) on the market. (Howard 2013 [1940], 18)

The NPK mentality, according to Howard, is the underlying mental orientation of, in his time, the ongoing processes of the mechanization and chemicalization of agriculture through the use of tractors and NPK fertilizers, respectively. While Howard acknowledges the short-term increases in profit and productivity through “artificial,” the reduction of labor needs on the farm, and the reduced trouble of not having to care for farm animals as providers of manure, he issues a warning about the “other side of this picture”:

These chemicals and these machines can do nothing to keep the soil in good heart. By their use the processes of growth can never be balanced by the processes of decay ... That this is so will be much clearer when the attempts now being made to farm without any animals at all march to their inevitable failure. (Howard 2013 [1940], 18)

The “inevitable failure” of the NPK mentality lies in a faulty relationship to soil. Soil becomes a substrate, replenished with artificial nutrients rather than a living body dependent on the processes of growth and decay. It extracts the functions and properties of healthy soil for short-term gain. The NPK mentality also obliterates the need to keep animals on the farm, thus reducing farming from a multispecies affair to a simplified production machine, leading to “inevitable failure.”

Sir Albert Howard (knighted in 1934) was a British botanist and agronomist who is most famous for his work at the Institute of Plant Industry in Indore, in contemporary Madhya Pradesh, where, from 1924 to 1931, he developed the so-called Indore Process of composting plant waste and animal manure. Howard’s work is significant as the intellectual and experimental foundation of Indian and global organic farming movements and agroecology as a science. In this chapter, his example serves to set the stage for several tendencies and tensions in natural and organic farming in contemporary India. His work is a historical starting point for exploring the shifting balances between scientific and religious registers in alternative agriculture movements. Both the terms “scientific” and “religious” are nearly impossible to define and to delineate. I use them as rough heuristics to distinguish

styles of reasoning and argumentation that refer to either the methods or authority of science or the methods and authority of tradition, vitality and, for lack of a better term, a sense of wonder about how plants grow.

Contemporary agroecological movements can be understood as inhabiting the contradictory space of a critique of scientific agronomy based, on one hand, on religious idioms and practices and, on the other, on scientific advances putatively ignored by the agronomical mainstream. Spiritually inspired agroecology thus claims to be both more spiritual and more scientific than agronomy. The first point to establish is that agroecology is not just the foundation of an alternative way of doing agriculture—it is also a form of critique. Howard’s critique of the NPK mentality as “the attitude of mind which sees all virtue in the use of artificials” (Howard 2006 [1945], 71) is, on one hand, a critique of attitudes of the mind, styles of thought, and convictions about soils and animals, and on the other, an indictment of its embeddedness in the scientific method of modern agronomy. To Howard the shortcomings of the agricultural research station are personified in the form of its main protagonist: the “laboratory hermit,” a persona that stands for a divorce of theory from practice and who has succumbed to the “temptation” of reductive methodology:

[For the laboratory hermit] ... the temptation to grow a few isolated plants in pots filled with sand—watered by a solution containing the requisite amount of NPK in a balanced form so that anyone constituent did not outdo the others—draw them, measure them, tie them up in muslins, weigh them, burn them, and analyse them proved too great. (Howard 2006 [1945], 74)

Howard is a significant starting point in a discussion of science and religion in agroecology, because he was positioning himself firmly in the camp of science in opposition to non-rigorous styles of thought. This is evident in his dry dismissal of biodynamic farming in the preface to *An Agricultural Testament*: “I remain unconvinced that the disciples of Rudolph Steiner can offer any real explanation of natural laws or have yet provided any practical examples which demonstrate the value of their theories” (Howard 2013 [1940], 1).

Biodynamic agriculture, the system Howard refers to, is arguably the first modern alternative agriculture system that was built on spiritual principles as a reaction to the perceived detrimental effects of agricultural development in late nineteenth-century Europe. Developed by the self-proclaimed “seer” and “visionary” Rudolf Steiner (1861–1925) biodynamic agriculture is based on attuning farming to cosmic, “telluric” (earthly), and spiritual influences and rhythms, most important of which are the moon phases, and by using specific farm-produced “preparations” that inoculate compost heaps and soils. Biodynamic agriculture

is closely related to anthroposophy, a spiritual-philosophical-pedagogical system developed by Steiner from influences ranging to Indian theosophy and the science of the spirit (*Geisteswissenschaften*) derived from German classical author J.W. Goethe. Despite Howard and others noticing that biodynamic agriculture cannot offer any “real explanations of natural laws” at work in its system, it has over the past century developed into a global model in alternative agriculture, known worldwide and also in India for its independent certification and branding as “Demeter” products.

In a speculative mode, Howard and Steiner would probably have agreed in their critique of, what in contemporary terms would be called, agronomy, however, they depart in their tolerance for extra-scientific explanations. Howard’s critique of NPK mentality is rooted in an epistemic critique of a false mentality based on specifically located scientific paradigms and their respective methodologies. His critique is directed at an epistemic crossroads in the history of agricultural sciences associated with the work of Justus von Liebig (1803–1873), the German chemist and soil scientist, who died the year Howard was born. Liebig, in his seminal work on plant nutrition, commissioned by the British Association for the Advancement of Science (Liebig 1843), had a far-reaching impact on the future of global agriculture. Liebig dismissed the idea of soil being a biological entity and explained plant growth entirely in chemical terms (Marchesi 2020). Since then, biological research on humus and soil organisms has been sidelined and chemistry has taken center stage as the “mother of all soil sciences” (interview note: Tamil Nadu Agricultural University, 2023). For Howard the “Liebig tradition” is primarily to fault for, in contemporary terms, enacting soil as dead matter: “It takes no account of the life of the soil” (2013 [1940], 37). The NPK mentality by extension becomes a mentality of artificiality. The critique raised by Howard against epistemic “temptations” and dangerous “mentality” gets its foundation in the notion of nature with a capital “N”: “chemicals can never be a substitute for humus because Nature has ordained that the soil must live and the mycorrhizal association must be an essential link in plant nutrition” (Howard 2013 [1940], 37). At the most scientific end of a science-religion continuum then, Nature and vitality are the most closely associated with transcendental ideas. Nature reappears with the next flashlight on the founder of Natural Farming, Masanobu Fukuoka.

Masanobu Fukuoka and the Emergence of Natural Farming in India

“This is the mixture of science, philosophy, and religion” exclaimed Masanobu Fukuoka (1913–2008) holding up, between thumb and index finger, a hazelnut sized brown pellet—one of his famous clay balls. The year was 1997, and the scene is depicted in a documentary film (*Mimic Nature* 2017) about the then 84-year-old

Japanese farmer, scientist (microbiology), and inventor of natural farming visiting India in a celebration of India's fifty years of Independence from British colonial rule. The scene takes place at the Mahatma Gandhi Ashram in Madhya Pradesh in an event framed by spiritual music and attendees clad in ceremonial white dhotis. The clay pellets materialize Fukuoka's philosophy and work as a natural farmer. Containing seeds, soil and clay these balls are his main technique of reviving deserts, which he was active implementing in many countries, on all continents, including India (Fukuoka 2012). Fukuoka's technique consists of dispersing clay balls into desertified landscapes hoping for nature to do the work of reviving the degraded soils. His principles of natural farming that he first developed on his own farm in Japan and then taught in workshops across the world and in two best-selling books (Fukuoka [1978] 2009, 2012), are based on limiting human interventions in agriculture, to the point of rejecting the term cultivation: "Fortunately, after sixty years practice, there is no cultivation, no fertilizer, no chemicals, no weeding. I finally can grow any crop with natural farming" (Fukuoka in *Mimic Nature* 2017).

Fukuoka is relevant to this chapter for two reasons. First, he is a household name among alternative farming practitioners in India, and secondly, he introduced farming as an explicitly spiritual practice in India. When I first started research into alternative agriculture movements in Kerala, South India, Fukuoka was a common reference point for these otherwise very diverse and individualistic set of practitioners. Fukuoka has, for example, been a very important influence on Subhash Palekar, who, I argue, translated many of his principles into the popular Zero Budget Natural Farming (ZBNF; Palekar 2011, 2012, 2013) which I return to below. Fukuoka was the only "foreigner" Palekar would acknowledge as having been an influence on his own intricate model of spiritual farming. Fukuoka was known in India as the inventor of "Do nothing agriculture" as many interlocutors would characterize it. A type of farming that is based on a spirituality of Nature that involves overcoming anthropocentrism and the cultivation of modest, non-consumerist lifestyles. His book, *The One Straw Revolution*, became a bestseller in India soon after its first English translation in 1978. Together with Rachel Carson's *Silent Spring* (Carson 1962), and Howard's *Agricultural Testament* (Howard 2013 [1940]), it brought food and agriculture into the fold of environmentalism in India, which had otherwise, at least until the emergence of the environmentalisms of the poor, been concerned mainly with wildlife conservation, a branch of environmentalism troubled by its legacy in the colonial project of protecting hunting grounds for colonial elites.

Unlike Howard and Carson, Fukuoka impressed on Indian alternative agriculture movements *three features* that have since been picked up in a range of "spiritual" agroecology movements. The first is a focus on the limits of human knowledge that is often articulated as a strong rejection of science. To quote the

documentary film again: “The natural farmer says no to science, all sciences. No! No, thank you. No nothing” (Fukuoka in the documentary). His genealogy of science gone wrong does not originate with Justus von Liebig’s nineteenth-century paradigm shift toward chemical understandings of soil health, as does Howard’s, but is rooted in a more profound rejection of the basis for European science in the philosophies of Descartes, Locke, Kant, and Hegel (2012) and their underlying idea that humans are outside of nature. His own philosophy works to overcome human exceptionalism and anthropocentrism in approaches to farming.

Instead, and this is the second feature he has impressed on contemporary movements, he propagates farming on the basis of a philosophy of Nature (with a capital “N”). According to Larry Korn, his first translator, this philosophy came to him in a sudden revelation at the age of twenty-five. “He saw nature as a single, interconnected reality with no intrinsic characteristics. He saw time as an uninterrupted moment of the present with past and future embedded within it” (Korn 2012, xxii). This unitary nature does not require human care and engineering to flourish. He introduces the forest as the ultimate guide for farming, as a self-sufficient highly interconnected ecosystem. In agriculture, this Nature-centric view translates into a sense of the futility of human action, hence a farming style of “non-cultivation.” “The earth cultivates itself,” as he put it (Fukuoka 2009 [1978], 34). He taught soil practices based on “do nothing” or at least “do less”: no ploughing, no weeding, no manure, no work, no fertilizers. The only intervention needed is to sow seeds according to observations of nature. It is thus not a particular technique that matters, but the particular “way of seeing the world” (Fukuoka 2012, 121), of participating in nature from the inside. Non-cultivation also translates into the idea of farming as “sacred work” (Fukuoka 2012, 113), which has become so influential in Indian alternative agriculture movements.

The third feature introduced by Fukuoka in India is thus the idea of alternative farming as an explicitly spiritual body-mind practice. According to Trent Brown, Fukuoka’s philosophy is inspired by Buddhist philosophy and the “Taoist-inspired Zen school” in particular. Brown summarizes Fukuoka’s spiritual take thus: “Fukuoka beautifully articulates natural farming as a form of spiritual practice that ultimately overcomes the sense of alienation, dissatisfaction and disenchantment that are characteristic of modern life” (Brown 2020). Agroecology as a spiritual response to alienating modernity is a recurring theme in India. At this point Fukuoka also resonates with Gandhian ideas of self-sufficiency, asceticism, and self-reliance. The idea of “doing less” on the farms translates into wanting less, aspiring for less. At least for less of the temptations of modern agriculture. Subhash Palekar later translated this into a “simple natural lifestyle” to be achieved by his followers.

It is possible to draw direct genealogical lines between Fukuoka’s teachings and the Indian gurus of natural farming: The critique of science based on philosophical

differences with the West; the critique of anthropocentrism and the elevation of Nature to a unified metaphysical entity as the only teacher of farmers; and the elevation of farming into a subject-transforming activity that requires the right philosophy rather than the correct knowledge and techniques. Yet there are also foundational differences. Fukuoka's spirituality, despite its obvious Buddhist inflections, is never named or localized, but based on his personal revelation of a philosophy of "*mu*" (nothingness) which states that "in this world there is nothing at all" (Fukuoka 2009, 8) and that nature is undivided. Within Indian natural farming, this spirituality becomes explicitly Indian. Personal revelation is here replaced by Vedic references and Hindu frames. Compare the following two statements by Fukuoka on nature spirituality with that of Palekar's spirituality (which is the focus of the next section) based on geographical space:

Plants, people, butterflies, and dragonflies appear to be separate, individual living things, yet each is an equal and important participant in nature. They share the same mind and life spirit. They form a single living organism ... Nature is an endless cycle, in which all things participate in the same dance of life and death, living together and dying together. (Fukuoka 2012, 58)

Western philosophers are in very wrong confident mentality that, only they, have absolute truth. But it is not correct. There is only absolute philosophy [and] that is Indian philosophy. (Palekar 2012, 21)

The second major difference is Fukuoka's refusal of nativism. In his decades-long efforts to regenerate deserts and degraded landscapes, he always advocated for finding the best seeds from across the globe. This stands in stark contrast to what I call Indian natural farming's "bionativism" (Münster 2021, S312) that combines explicitly "Indian" spirituality with the need for using exclusively Indian biologies that are constructed as being superior to their non-Indian counterparts, just as Hindu spirituality is superior to non-Hindu faiths. To illustrate this contrast, I next turn to Subhash Palekar, the guru of natural farming with most followers in India and a cultivated obsession with native Indian cows as the spiritual and material foundations of his system (see also Baviskar, this volume).

Subhash Palekar: On Being Native

On the first day of my participation in a training convention for ZBNF in 2014 with Subhash Palekar I could see him eying me on stage. I obviously stood out. The only foreigner in an auditorium with several hundred participants, mostly farmers, but also a large contingent of Anganwadi (female village-level social workers), local

bureaucrats and other interested members of the public. The site was a small town at the foothills of northern Kerala, definitely not on the tourist trail. The convention hall was hot, and the day moved very slowly as every sentence Palekar spoke in English or Hindi was translated into Malayalam. During lunch break of that first day, one of Palekar's inner circle disciples, clad in *khadi*, approached me and said, "Palekarji invites you to see him on stage." I was delighted to accept the invitation as interview appointments with Palekar had been notoriously difficult to set up. On that stage some sofas and chairs were arranged in an approximate circle with Palekar at the center and members of the audience trying to get his attention and ask about specific issues in their fields. One person, who was a big, rich farmer, was eager to show Palekar pictures of his fields on a tablet while another was trying to get a selfie with his guru. When I arrived on stage, to my embarrassment and delight, Palekar cleared the space next to him and asked me to sit beside him. To the great annoyance of everyone else, he spent the next five minutes carefully studying the visiting card I had brought from my home university and listened to my research intentions. During the day I had been intrigued by his insistence that only native Indian cows, *Bos zebu* or *Bos indicus*, had the necessary properties for making his fermented "miracle preparation" for soil rejuvenation. I wanted to know if other cows, and in particular the other branch of the *Bos* family, *Bos taurus*, that are native to other places could have a useful function there.

- Daniel: Do you think your methodology would also work in northern climates?
- Palekar: Yes, throughout the world.
- Daniel: What about the Himalayas, have you tried it there?
- Palekar: Himachal Pradesh. In South India more than four million farmers are practicing [ZBNF], and ten *lakh* [1 million] in North India.
- Daniel: Would you say that *Bos indicus* is the only useful cow?
- Palekar: Only *Bos indicus* is a cow.
- Daniel: But in other regions there may be other native cows, the *Bos taurus* may be native to ... [interrupts my question, raises his voice]
- Palekar: ... the *Bos taurus* is *not a cow*! It is another animal, totally useless!
- Daniel: Not a cow? Not even in other countries, not even for Europe?
- Palekar: Totally useless, not in Europe also, totally useless for Zero Budget Farming.
- Daniel: So it is not that other places have other native cows? There is no native European cow that would...
- Palekar: [even louder now] No native European cow! No European technology! Indian cow! Indian technology only!

Subhash Palekar, born in 1948, holds a BSc in agronomy and is a farmer himself. According to his scattered autobiographical statements, he developed his system

of ZBNF in the years 1989 to 1995 on his farm in his native Maharashtra. He spent these years studying the Vedas, Western sciences, and organic farming methods. Most importantly, he conducted experiments on his farm until he found his system of natural farming and the recipes for his central “miracle preparation,” which he calls *jīvāmṛta* (Sanskrit: nectar of life) and *bijāmṛta* (seed nectar) (Münster 2021). On his father’s traditionally managed farm, he began introducing new, improved cultivars, fertilizers, and pesticides. After a decade of chemical farming, however, he noticed declining yields. At this point, he realized that his education was a “fraud” and that he would have to do his own research. Remembering his college-year encounters with Adivasi cultivators in the Satpuda Mountains of Maharashtra, Palekar had an epiphany of forests as model nature, or, in his words, as “the totality of nature” that would inspire Natural Farming. “What I saw in the forest [was] a totality of the nature [formed] in my mind. I decided to search and search the totality of nature and get it in the form of Zero Budget Spiritual Farming techniques for every crop” (Palekar 2012, 70). Palekar’s narrative is remarkably similar to Fukuoka’s epiphany of “nothingness” and an “undivided nature.” Other elements of ZBNF equally derivative of the Japanese teacher’s method are: no tilling, no chemicals, no human interventions, anti-anthropocentrism, and a propagation of lifestyle changes. However, Palekar departs from or further develops Fukuoka in significant ways. Among these, I will focus first on nativism and second on the relationship of science and spirituality.

As the short exchange between the guru and myself above illustrates, Palekar claims both universality and nativism. His system of natural farming is supposed to have universal validity across climatic zones and country borders. He based this claim on the idea of a unity of a metaphysical “Nature,” which operates according to the same agency across the world. In Palekar’s words, this Nature is self-developing, self-sufficient, and self-nourishing. The aim of spiritual farming is to activate what is “natural”: “That, which is in existence in the Nature and which is activated by Nature is Natural. That which is not in existence in Nature and is activated by human mentality or human intelligence is Unnatural.” (Punctuation modified with no change in meaning; Palekar 2011, 114)

Spiritual farmers get “permission” from Nature, to use what is natural, or in “existence in nature.” Here he refers mostly to droppings of animals (dung, urine), the activity of insects, worms, and microbes, all of which work together to make his technology, his “miracle preparation” *jīvāmṛta*, effective. Fermenting cow dung, cow urine, and soil microbes produces a concoction that is sanctioned by nature and works on vitalizing soil via the activation of earthworms and other mesofauna as well as soil microorganism, which in turn will be beneficial to soil health and plant growth (Münster 2018). However, when it comes to specifying the “Nature” of natural farming, universality ends. Valid natures need to be native to India. Hence

Palekar's insistence in our dialogue that only *Bos indicus*, the Indian variant of the cow species can be used. In fact, he goes so far as to claim that they are two different species—*Bos taurus* and *Bos indicus*—whereas a biologist would recognize two branches within the same *Bos* species (which is supported by the ease with which they can be crossbred). *Bos taurus*, the Western or European branch of the cow is rejected as foreign first and as useless second. I conceptualize nativism as type of xenophobia (Hervik 2015) that pits the native against the (devalued) foreign. In Palekar's case this nativism extends to biology and the rejection to nonnative species. My critique of nativism does not deny the possibility of problematic biologies, such as invasive, maladapted, hybridized, or gene modified species, but points to nativism's structural similarity to ideologies of xenophobia, nationalism, and religious chauvinism (Coates 2006). This was the puzzle for me in my above conversation with Palekar, the blend of particularity and universality in declaring the native Indian cow superior over other native cows, even in other countries and that in fact no other native cows exist (or should be called cows), only the Indian ones. This nativism also spills over in the religious or spiritual elements of his teachings: Only Indian philosophy provides the perfect blend of science and spirituality.

In relationship to science, Palekar's spiritual farming offers an ambivalent blend of stark critiques of science, even mockery of the Indian agronomy, and frequent references to advances in ecology, soil science and microbiology in support of his methods. An example of his former approach would be his mocking remarks for agricultural science in India: "We feel great pity with the agricultural science for their great defeat," (2013, 224) referring to resistances developed by insects and fungi to the pesticides and fungicides. Another example would be his renaming of Justus von Liebig, the founder of soil chemistry (see above) as "Mr. Lie Big" who provided the world with what we might call a false ontology of soil and plant growth as largely based on chemical processes. This critique of science establishes an analogy: agronomy to natural farming is like biomedicine "Allopathic medical science" to naturopathy and Ayurveda. Both agronomy and biomedicine are rendered "Western," foreign, and created to exploit Indian farmers. But most foundationally it is a critique of relying on specific measures and indicators of soil health, where a holistic and spiritual approach would be needed. Consider the case of pH value, which determines relative acidity of soil. Palekar explains his discontent with soil sample tests and the scientific reports farmers receive:

What is that report? In that report, the first line is written that the PH value of your soil is 8.5 or 7.6. What is the meaning of this sentence? What is this PH value? After reading this sentence what instructions or perceptions have you received? Have you experienced about the thirst of the soil, about the pain of the soil, about the hunger of the soil, about the happiness of the soil, about the needs of the soil, wishes of the soil? Nothing! Only one

word “PH” has been known by you, which has no meaning in the spiritual language. Is this PH a body language of the soil? No. (Palekar 2011, 99)

This is an example of Palekar polemically dismissing basic uncontroversial science with pseudoscientific talk about an anthropomorphized soil that feels pain, experiences thirst and can even be happy or unhappy, and which can be understood only by learning a spiritual language. A more generous reading of Palekar’s approach would suggest that he is rejecting reductive applied agronomy and embraces what authors have called the “promicrobial turn” in health and ecology, which have opened the field for ecological conceptions of soil as a composite organism. When it comes to explaining the workings of microbes, symbiosis, rhizospheres he never tires of saying that these principles are scientific and that “we have so much evidence.”

The quote above also demonstrates how critique of science is connected to Nature spirituality. Soil (and other non-humans) is rendered a living being with “wishes,” “needs,” “happiness,” and “hunger.” In order to live inside what we might call an ontology of living soils, it is necessary, according to Palekar, for farmers to transform their subjectivity. In his call for appreciation of the “body language of the soil,” he is not too far from recent methodological innovations in the environmental humanities that call for “attentive interaction” (van Dooren, Kirksey, and Münster 2016, 6) with multispecies worlds. Similar to Fukuoka, Palekar teaches a spirituality of what he calls a simple, natural lifestyle, brought about by a transformation of the self. As the following quote shows, this transformation, which comes about by practicing natural farming, is largely based on yogic traditions of self-transformation through renunciation:

You will be internally changed. Automatically your six enemies or passions or rascals (Shad Ripues) will be controlled systematically. Your bad habits i.e., drinking the liquor, gambling, eating non vegetarian, waist [sic], falsehood, defilement also will be continuously run away from you. Absolute cultivation of mind. Spiritual farming means to overall change you yourself. The internal change and external change simultaneously. (Palekar 2011, 186)

Palekar is referring here to the six enemies of the mind [*shadripu*] found in Hindu scriptures and usually translated as lust, anger, greed, attachment, ego, and envy. Of note here is that spirituality is the outcome of natural farming practice and not vice versa.

In contrast to Palekar, who is an agricultural teacher and farmer first and spiritual guru second, I will next turn to the opposite case: yogic gurus, who have made the environment, sustainable agriculture, and soil care their outreach mission. As my main example I will use Sadhguru, the controversial guru who launched the “Save Soil” campaign in 2022.

The Yoga of Soil: Sadhguru's "Save Soil" Campaign and Raising Planetary Consciousness

Gurus of yoga and meditation play a major role modern and postmodern Indian spirituality and religious practice. While the term "guru" simply denotes teacher who has a long tradition in transmitting Vedic and other religious knowledge in Hinduism, Buddhism, and Sikhism, I want to focus in this section on yogic gurus with transnational followership and their own techniques of meditation and spiritual growth. I want to mention only two of those gurus, Sri Sri Ravi Shankar (born in 1956), and Sadhguru (born in 1957), because both have been active in promoting agroecology and spirituality-based soil care. I will briefly introduce their commonalities and then focus on Sadhguru's "Save Soil" campaign.

One commonality among yogic gurus is that they each have developed (and trademarked) their own technique for meditation which they have taught to followers across the world. Sri Sri Ravi Shankar's method is called Sudarsha Kriya Yoga (SKY) and Sadhguru's is called Inner Engineering. These techniques can be, and have been, learned by devotees in courses and workshops across the world. Usually based on meditation and breathing techniques, they share a focus on raising the "consciousness" of their practitioners and so-called mindfulness training. These two gurus also have a transnational organizational structure in common, including a conglomerate of ashrams, training centers, schools, universities, charitable organizations, for-profit businesses, media organizations, non-governmental organizations, health supplement brands, clinics, old age homes and many more. The value of their respective organizations is estimated at several hundred million euros. Sri Sri Ravi Shankar runs the Art of Living (AOL) Foundation, founded in 1981, with headquarters in Bangalore, while Sadhguru is head of the Isha Foundation, founded in 1992, with its headquarters near Coimbatore. These two places are quite different in appearance and function.

The AOL International Center, also called the Art of Living Ashram, is a city within a city, extending over more than one hundred hectares, featuring housing complexes, bookstores, administrative buildings, headquarters for the AOL enterprises, a yoga school, a travel agency, a central meditation building (called Vishalakshi Mantap), a farm and a cattle-breeding compound. According to one resident, roughly sixty thousand people reside there permanently (Plessy 2019, 5). The roads of the Ashram are filled with colorful billboards announcing the "150 scientific reasons for Sudarsha Kriya Yoga" provided by the "Sri Sri Institute for Advanced Research." They are illustrated with drawn pictograms like test tubes, light bulbs, gears, computer screens, happy office workers, upward pointing arrows, and brains. They announce in bold letters, supported by precise numbers, the benefits of SKY for health, mental health and an edge in focus and competitiveness: reduced

menstrual pain (38 percent), reduced stress (28 percent), improved attention span (27 percent), reduced depression (46.75 percent) increased optimism (6.9 times), and a sweeping 69 percent reduction in adult work exhaustion, to name just a few. It is not hard to imagine how this program appeals to upwardly mobile chronically exhausted workers in Bengaluru's IT industry and beyond. Only one billboard is dedicated to "Care for the Environment with SKY." It is illustrated with drawings of wind turbines, solar panels, bicycles, happy people planting trees and recycling waste. It claims precisely 426 percent "increased connectivity with nature," 107 percent "increased concern about the environment," and 111.5 percent "increase in pro-environment choices." I do not have insight into the validity of the data behind these claims. I present them here as a shortcut to put forward a hypothesis about the relationship of gurus to the environment, which certainly requires more research beyond the scope of this chapter. First, environmental campaigns seamlessly fit into corporate greenwashing that is ubiquitous in neoliberal India. Secondly, the connection of yoga and the environment serves to depoliticize ecology by making it a question of attitude and lifestyle choices. In this instance, care for the environment is quite generic and caters to urban consumers. This middle-class environmentalism is easily compatible with a glorification of the Indian past, a feature most visible at the ashram's cattle farm, which is dedicated to the preservation and promotion of native Indian cattle breeds.

Approximately three hundred kilometers south of Sri Sri Ravi Shankar's Ashram, a gigantic Shiva bust greets visitors at Sadhguru's Isha Center. The 34-meter-high *Adiyogi* Shiva Statue has become a major tourist attraction in the region. It faces a large field, several hundred meters long, which is used for mass gatherings. The most important of these gatherings happens during Mahashivanratri [lit. great Shiva night], a yearly celebration of Lord Shiva, during which devotees stay wake through the night hoping to gain spiritual and health benefits. This is one of the major events organized for paying devotees in the large space in front of the *Adiyogi* statue, and is a major spectacle with music, performances, a full moon, guided meditation, and inspirational talks that draws crowds from dusk till dawn. Walking several hundred meters beyond the Shiva statue, one reaches the actual buildings of Sadhguru's ashram, which is entered through a large gate that leads to a kind of spiritual theme park in which a bath in swimming-hall sized "energy pools" (*theerthakunds*) and a ten-minute meditation in front of a large Shiva *linga* (*dhyanalinga*) draw the largest crowds of mostly Indian visitors on any given day. The entire tour takes two to three hours, depending on how many activities a visitor books, and at the end the visitors exit through the gift shop.

The entire premises of ashram and statue have been built up over the last decades with money from devotees across the globe. It is situated at the edges of a protected forest, with strong evidence indicating a land grab from the local

Adivasis and ruthless placement onto an elephant corridor essential for wildlife protection. Allegations of dispossession and ecological harm have contributed to Sadhguru's controversial image in India.

In 2022 Sadhguru launched a global "Save Soil" campaign for which he pledged to travel thirty-thousand kilometers, through twenty-six countries alone on a motorcycle. A pedestal in front of *Adiyogi* displays one of his motorcycle helmets and behind it there is a large round cardboard poster with the green Save Soil logo as a reminder of his one-hundred-day journey. In a staff meeting at the beginning of the campaign in 2022, Sadhguru made it clear that most of all he wanted this campaign to be massive in scale, spreading the message of soil health to as many media outlets as possible.

During one of his speeches at the 2024 Mahashivanratri event he claimed to have made three to 3.5 billion people "conscious that there is a threat to the soil and that something has to be done" (Isha Yoga Center 2024). Despite the repeated use of the word "consciousness" in the Save Soil campaign, I could find very little connection to consciousness raising resulting directly from Sadhguru's brand of yoga and meditation program, Inner Engineering. The only connection I found was a ten-minute video clip of guided meditation called "Powerful Meditation to Connect with Soil," (Sadhguru 2022) that features the guru sitting in the dark of night on a chair placed in the open air with trees in the background. He has his eyes closed, chants mantras, and hums a tune. Unfortunately, the video is without explanation, making it difficult to understand how, for Sadhguru, soil health and inner engineering are relevant to each other.

During the Save Soil campaign, consciousness raising seemed to contain little more than repeating to shifting audiences the fact that the soil is endangered and that the world urgently needs to do something about it. The promotional material produced by Sadhguru at the time, while raising the real problem of soil degradation, is full of platitudes such as "The word human comes from the word humus"; "Food doesn't come from Uber Eats, it comes from the soil"; "The healthier your soil, the healthier your food," and of course, the simple repetition of the empty slogan "Save Soil" itself. To be fair, Sadhguru has delivered one high-level policy recommendation suggesting that all countries should commit to preserving 3 to 6 percent of the soil organic matter. However, such a global target seems overly simplistic and does not even require an agroecological transition that would allow for continued agro-industrial extraction (Sharma 2022). The SOM target is, however, indicative of a relationship between science and religion in which a scientized target, a percentage of SOM, is adopted and amplified by a spiritual leader, leaving both spheres, (science or science policy and spirituality) intact, unaffected by each other, and ontologically unchallenged.

For his followers, Save Soil seems first and foremost to be a feel-good campaign. During the 2024 Mahashivanratri mega event, just a few weeks after his return,

standing on the main stage in front of Adiyogi, he asked the thousands of attendees: “Are you a friend of the earth?” to which they replied shouting: “Yeah!”—an answer that seemed to satisfy both the guru and his audience (Isha Yoga Center 2024).

In the outreach material produced by the campaign two aspects of the soil health problematic remain unmentioned. First, we find no allocation of responsibility for the global crisis of soil. There is no mention of land relations, industrial agriculture, the global circulation of food, feed and fuel, or even chemical fertilizers and pesticides. It might even be fair to argue that these gurus do not even speak to actual soil care workers. Hardly any farmers actually battling soil degradation would feel “increased connectivity with nature” by being told: “Get your hands in the soil—not in the dirt as is commonly said, as soil is not dirty” (Sadhguru in IUCN 2022). This messaging is largely aimed at urban elites.

In contrast to Fukuoka and Palekar who arrived at spirituality through farming, for yoga gurus the coming together of spirituality and environmentalism seems to be about influencing and mobilizing people for a good cause. The topics of farming and soil care are arbitrary choices for social outreach and public social messaging. Both the Art of Living Foundation and the Isha Foundation were previously engaged in tree planting activities, also based on quantified targets and a large pool of volunteer workers. These campaigns drew criticism from ecologists for actually doing more harm than good to the environment by planting the wrong trees in the wrong places. Planting trees is arguably another easy to scale-up, feel-good activity that requires neither structural reflection nor spiritual attunement to nature care. This brand of ecological mobilization benefits from the gurus’ access to volunteer labor and a global presence of devotees as amplifiers of simple messages. Sadhguru gives the image of his devotees as dormant cicadas that he awoke during his hundred-day trip:

So by thirteen to fourteen days [into the Save Soil campaign], all these millions of volunteers and supporters who are all over the place, who [were] like cicadas sleeping, by thirteenth or fourteenth day slowly all the cicada woke up, [he raises his hands finger tips touching] and they made the noise [he spreads his fingers], and managed to touch 3.91 billion people in 100 days. (Sadhguru 2024)

While it remains to be seen what topic Sadhguru might put on the future agenda of his spiritual organization for doing good in the world and saving the planet, it seems fair to assume that a good number of dormant donors to his organization may also have been reawakened as a side effect of this campaign to save soil. The Save Soil campaign followed the logic of most types of charitable environmentalism. It had the dual goal of raising awareness about soil among urban consumers and global policy makers, as well as raising activity within the organization and capital for the organization.

Conclusion

In this chapter I have presented five short portraits of scientists, farmers and spiritual leaders who have brought science and spirituality into the conversation about the agroecological renewal of soil care practices in India and beyond. Taken together this group stages a large range of possible science-spirituality encounters in agro-environmentalism. The relationship between spirituality, science, and pseudoscience is not straightforward and evades easy generalizations. The British scientist Howard, while rejecting the explicitly “spiritual” biodynamic agriculture as pseudoscientific, recognizes the effect of reductive science on what he calls the “NPK mentality,” thus making extractive agriculture more than a technoscientific mistake, and a problem of the mind, if not of spirituality. Unsustainable agriculture is produced in a negative feedback loop of bad data and misguided mindsets. The farmers-turned-movement-leaders Fukuoka and Palekar propose natural farming as an antidote to soil loss. They introduce spirituality as a means of connecting with nature. This nature spirituality is Buddhist-inspired in Fukuoka’s teaching of the unity of humans and nature, of matter and mind. Fukuoka makes “nature” the farmers’ teacher, allowing the farmer to replace a reliance on scientific agronomy with natural farming. Palekar builds on Fukuoka’s nature spirituality, but adds an element of nativism and Hindu belonging by connecting natural farming with native Indian cows as a necessary requirement for spiritual soil care. Nature remains the teacher, but it is a situated nature, Indian nature. Spiritual farming here is supposed to draw inspiration from the Vedas and other Indian traditions. Scientific agronomy becomes marked as Western and rendered part of a colonial project that includes also biological and epistemic colonization. In this version the spiritual renewal of agriculture requires a renaissance of ancient Indian knowledge, skills, and spiritualities well as of Indian animal and plant species. Sri Sri Ravi Shankar and Sadhguru, finally, represent a case of successful spiritual leaders discovering soil and agriculture as their cause for social outreach. Sadhguru, who is most explicit about soil health amplifies a simplified message about global targets in healthy soil as measured in percentage of soil organic matter. This message is easy to communicate, success is theoretically measurable, and it emulated the logic of climate and other environmental goals negotiated in the global arena. It is a scientized, simplified message spread through existing, yet dormant, networks of devotee-volunteers. Spirituality, however, is not part of the messaging—it is a spiritual organization working for an environmental cause.

I hope to show by this pastiche of ethnographic, literary, and historical instances how the blend of agroecology and spirituality might have the potential to challenge the ontological foundations of extractivist human-environmental relationships. Spiritually informed natural farming, for instance, aims at enacting soil-centric

multispecies agrarian worlds. However, as the material presented here indicates, not all blends of agroecology and spirituality have the same potential impact on soil care practices. Farmers and scientists turning to spirituality or discovering spiritual aspects in their work with soils, plants, and animals (Howard, Fukuoka, Palekar) have to do a much more ontological work at the intersection of science and spirituality with the potential outcome of generating more sustainable practices from the ground up. Spiritual leaders who take on issues of the environment and soil care as part of their social outreach programs have hardly any impact on the ground and may, in fact, contribute to greenwashing in the agricultural sector. Raising awareness for soil, or, in the language of these gurus, raising consciousness about soil, is being translated into a language of policy targets and awareness for middle-class consumers that food grows in the soil. These are low hanging fruits that neither challenge agro-industrial structures because there are any number of ways of increasing soil organic matter, nor does the flashlight of hyped-up attention offer any long-term perspective (spiritual or technical) to small-scale farmers struggling with maintaining soil health in a capitalist food regime.

Notes

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