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'Grass, rice, and aubergine': a case study of an Islamic eco-*pesantren* in Indonesia

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ABSTRACT

Twenty-first-century environmental movements and education have been criticised as predominantly secular, middle-class and Western-originated. As such, their ability to generate momentum and increase uptake can be limited to individuals and groups who identify with these traits. In order to widen the scope of environmental education (EE), this study considers the ways in which an Indonesian ecological *pesantren* (traditional boarding school) may complement the dominant Western-originated approaches by offering a religious and grassroots take. The site for this research is Ath-Thaariq eco-*pesantren* in Indonesia, which hosts students aged 12–17. Qualitative data were generated, including interviews with the founder of the *pesantren* and two alumni, a site visit and document analysis of the *pesantren*'s official weblog, alongside existing media outputs. In contrast to the dominant secular, middle-class and Western-originated versions of environmental education, our findings demonstrate how environmental education praxis can be closely connected to local grassroots struggles, grounded in culturally relevant discursive resources, and based on Islamic spirituality. Including approaches to EE such as this one may offer valuable opportunities to upscale the benefits of EE to broader sections of the population in non-WEIRD (Western, Educated, Industrialized, Rich, and Democratic) contexts.

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Introduction

Twenty-first-century environmental movements and environmental education (EE) theories, research and practices mainly originate from Western, educated, industrialised, rich, and democratic (WEIRD) countries (Brissett 2022; De Angelis 2022; Kopnina 2016). Consequently, scientific rationalism, modern individualism and secular democratic approaches to socio-ecological transformation underpin the available EE educational materials and pedagogical methods; from scientific facts about environmental degradation delivered in the classroom, encouragement of individual lifestyle change, to collective climate actions through democratic participation (Bell 2021; Gibson-Wood and Wakefield 2013; Hickcox 2018; Negev and Garb 2014). Whilst conducive to embedding the environment within educational practices, these approaches remain problematic as

they lack diversity and inclusiveness vis-à-vis contextuality, class and religion. With a view to diversify EE, this article considers the case of a religious, lower-class and non-Western context, namely, an Islamic-based education that embraced environmentalism in the contemporary Indonesian agrarian context. The case presented is Ath-Thaariq *eco-pesantren* (traditional Islamic boarding school) in West Java, Indonesia, whose EE foundations and practices are closely connected to local grassroot farmers' struggles, Southeast Asian agro-ecological contexts and Islamic discourses. The main research question this study pursues is: In what ways can an Indonesian ecological *pesantren* offer new understandings of environmental education beyond the dominant Western-originated approaches?

The article begins with a review of relevant contemporary EE scholarship; this identifies the gaps that inspired us to pursue our line of inquiry. We then briefly describe the Indonesian contemporary contexts where Ath-Thaariq *eco-pesantren* exists and introduce the *pesantren* itself. After clarifying our methodology, we discuss findings by using three metaphors: grass, rice and aubergine. These are plants grown in the *pesantren* which we connect to key themes. Grass represents an EE which is closely connected to local grassroot socio-ecological-class struggle: in this case, farmers' struggle. Rice represents an EE which is rooted in local culture, traditions and philosophies: in this case, a Southeast Asian agricultural context. Finally, aubergine represents an EE which is associated to spiritual philosophies and traditional religious educational practice: in this case, Islamic *pesantren* education (aubergine, a popular food eaten in *pesantrens* in Indonesia, will be explained more in the Findings section). This linguistic device is our way of paying tribute to indigenous EE research (Kimmerer 2013; Lowan-Trudeau 2019), which inspired us to write this paper.

Environmental education: Western, secular and middle class?

From the early 1900s endeavours to preserve natural parks and the wilderness to modern attempts of pursuing sustainable development through green technology and eco-taxes (Martinez-Alier 2012), environmentalism has been linked to rich societies' post-materialist values (Inglehart 1981) where freedom, participation, self-expression and care for the planet replace material survival and financial ambitions. This traditionally middle-class approach tends to manifest in green consumerism (buying organic products), green modernisation (e.g., replacing fossil fuels with renewable energy sources) and climate activism (e.g., taking time off from work/school to join climate strikes). This middle-upper class approach to resources, consumption and lifestyles is often associated with twenty-first-century environmental activism, leading to substantial changes globally in terms of greener policies and practices.

Mirroring these wider environmental movements, contemporary EE resources are mainly oriented towards ecological efficiency, biodiversity knowledge, green technological transformation and climate actions (Brissett 2022; De Angelis 2022). In this guise, they have been criticised as being overly scientific, decontextualised, technical and intellectual (Gibson-Wood and Wakefield 2013). For example, mainstream EE often teaches students distant facts about climate change – increasing global temperature, melting glaciers, rising sea level, declining biodiversity – which might not necessarily have immediate connection with students' day-to-day lives, thereby fomenting the belief that climate change happens elsewhere. This approach underplays pedagogical approaches to nature

and education that are contextual, embodied, intersectional, communal and metaphysical. Moreover, those inhabiting non-WEIRD contexts have often been positioned as having low environmental awareness (Gibson-Wood and Wakefield 2013; Hickcox 2018; Negev and Garb 2014). Unsurprisingly, mainstream scholarship does not necessarily speak about contextual cultural discursive resources useful for EE (e.g., see Hussein 2018; Noor et al. 2022; Nzeadibe, Uchem, and Nzeadibe 2018; Pan and Hsu 2022), such as how local wisdom, cultural practices or readily available materials can provide more sustainable alternatives.

Environmental justice – the consideration of how environmental hazards may put at risk already disadvantaged sections of the population – has driven scholarly attention to engage with alternative approaches. Since the 1990s, for example, terms such as environmentalism of the poor (Martinez-Alier 2012), grassroot environmentalism (Epstein 1995), subaltern environmentalism (Egan 2002) or working-class environmentalism (Bell 2021) have started to come to the fore, thereby pushing the concept of environmentalism to include struggles for ecological democracy. Some of the works of these movements are starting to yield visibility and impact. For instance, COP27 in Egypt in 2022 saw countries agree to a hard-fought deal to support the recovery of poor countries battered by climate disasters (Volcovici, Evans, and James 2022). Yet, these debates about loss and damage compensations from wealthier to poorer countries affected the most by the climate crisis have rarely entered mainstream EE classroom conversations. Mainstream EE has still not managed to become culturally inclusive and socially-just in terms of philosophies, praxes and theorisations, remaining largely silent on global inequality, class consciousness or neoliberal capitalism (Brissett 2022; De Angelis 2022).

In response to this, scholars have called for locally relevant, place-based, multicultural, indigenous and decolonial alternatives to the dominant Western-originated EE (Greenwood 2019; Kopnina 2016; Lowan-Trudeau 2019; Negev and Garb 2014; Ovid and Phaka 2022). Some of these alternatives have been documented: *uMunthu*-based environmental education in Malawi (Anderson et al. 2016), *soka* environmental education in Japan (Heffron 2022), agroecology programme for rural women in Guatemala (Briggs, Krasny, and Stedman 2019) and religious- and ethnic-relevant environmental education in Israel (Negev and Garb 2014). These studies showed how youth and educators in the Global South negotiated tensions between Western secular, scientific rationalism and local indigenous contexts, knowledges and philosophies, such as interconnected of beings (Anderson et al. 2016), sympathetic interaction of self and the environment (Heffron 2022) and traditional gender roles (Briggs, Krasny, and Stedman 2019; Negev and Garb 2014). Yet, this discourse has not led to an opening of mainstream EE to accommodate alternative approaches and narratives. More studies are needed to explore and advance these alternative environmental educational philosophies and praxes from various local contexts, as well as overlapping with cultural and religious frameworks. The interconnections between environmentalism and Islam, for example, remain a gap, which the current study seeks to fill.

Alongside cultural univocality, mainstream EE theories and practices are hitherto secular and have not yet sufficiently included religions as viable ontological foundations for environmentalism (Radkau 2012). The secular ontology of the mechanical universe often manifests in environmental educational materials (Bai 2022), such as scientific facts about global climate crisis, deforestation, pollution or micro-plastics; and how humans

can and should stop environmental degradation through scientifically proven methods and collective action. In the relatively secular context of modern WEIRD countries, religions are more relevant for ethnic minority groups, and some environmentalists have capitalised on this, for example, by partnering with religious leaders to deliver educational programmes (e.g., Lakhan 2018). At a deeper level, religions can offer valuable ontological resources pertinent to environmentalism and EE. Some examples include the eco-theology of St Francis of Assisi (Cholil and Parker 2021), the concept of interbeing in Zen Buddhism (Bai 2022) or Buddhist spiritualities more generally (De Angelis 2018), Jamaican Rastafari's conception of expanded and interdependent self as an eco-post-colonial approach (De Angelis 2022) and Judaism's notions of *Bal Tashchit* ('not to destroy'), *L'ovda v'leshomra* ('to work and preserve') and *Tu-B'shvat* ('the holiday of the trees') (Goldman, Pe'er, and Yavetz 2020). Responding to Michael Bonnett's (2019) call to 'ecologise education', or even further, Misawa's (2022) call to ecologise rationality, we consider that religions might offer key resources to societies (including beyond immediate communities), as they often function as an overarching ontological narrative in their believers' lives – which can be a holistic and powerful way for advancing ecological transformation.

To sum up, the current study is built on and contributes to at least three specific areas of inquiry within the field of EE, namely, (1) environmental justice or grassroots environmentalism in EE, (2) critiques of the dominant Western worldview in EE and the (3) role of religion in EE. Joining previous scholars who have begun to critique, identify and advance the role of class, culture and religion in environmental education, we explore how Islam has been drawn upon as the ontological foundation and pedagogical approach in an environmental education context in Indonesia, namely, *Ath-Thaariq eco-pesantren* in West Java (Indonesia). The next section briefly introduces this *pesantren* and socio-political background of its geographical and historical location, that is, contemporary Indonesia.

A brief introduction to Indonesia and Ath-Thaariq eco-pesantren

Indonesia is the world's fourth most populous country (approx. 275 million people) and the home to the world's largest Muslim population (88% of Indonesia population are Muslims). While Indonesia is officially not an Islamic country, Islam is a key socio-cultural-political force in Indonesia's history and contemporary society. This is evidenced by the role of Islamic organisations during the fights for independence in the 1940s, the existence of Islamic political parties in Indonesia's contemporary politics, the absence of pork and alcohol in most Indonesian cuisines, Indonesian cityscapes decorated with mosques, minarets and the sounds of call for prayer. Contemporary Indonesia is generally considered by historians as the period after 1998, that is, the end of Suharto's 32-year authoritarian regime and the beginning of democratic reformation. With steady economic growth since recovering from a major monetary crisis around that same time, some of Indonesia's major port cities such as Jakarta, Surabaya, Medan and Makassar have now become increasingly cosmopolitan; however, most other Indonesian regions remain traditionally agricultural. Farming – particularly cultivating rice, the current staple food of Indonesians – has not only been an important part of Indonesia's socio-cultural milieu but also a part of its political dynamics. During election times, for example, farmers have

often been targeted by political party campaigners because a large proportion of voters are farmers – promises of improving farmers welfare were typical (e.g., Solihat 2020).

Historically, driven by the popular agenda of rice self-sufficiency (*swasembada beras*), Suharto's authoritarian regime (1966–1998) introduced the Green Revolution in the 1970s by imposing *Panca Usaha Tani* (five farming efforts). These refer to the use of high-productivity seeds, chemical fertilisers, synthetic pesticides, intensive rice planting methods and good irrigation (Hansen 1972). Indonesia's rice self-sufficiency goal was finally achieved in 1984–1988, and Suharto was invited to speak about it at the FAO's 40th anniversary conference in 1985 (Raditya 2018). Fast forward four decades: in 2022 Indonesia once again received an international award for rice self-sufficiency from 2019 to 2021, this time from the International Rice Research Institute ('Penghargaan swasembada beras' 2022). Maintaining food security as a key political agenda, President Jokowi (2014–2024) launched Food Estate megaprojects in 2020 as one of his national strategic programmes (Shalihah 2020). Since then, these integrated farming enterprise projects have cleared new areas for rice farming and other plantations in various parts of Indonesia, and then been promoted as strategic responses to food security concerns caused by both the COVID-19 pandemic and the Russian invasion of Ukraine. In the contexts of historical and contemporary Indonesia, rice is not just a plant, it is a key element of the national political economy.

Nevertheless, the long-standing political ambition for food security was not pursued without a price. These continuing efforts from Suharto to Jokowi's presidencies have been criticised by scholars and activists alike for ignoring farmers' welfare, as well as environmental sustainability (Adristy 2022; Hidayat et al. 2020; 'Penghargaan swasembada beras' 2022). As a consequence, environmental NGOs and farmer unions have protested Food Estate megaprojects (Pranita 2022), arguing that deforestation to open up extensive monocultural farming industries is not environmentally sustainable because it intensifies short-term productivity while damaging the soil in the long run. They demanded the government develop strategic policies of food security in support of sustainable agriculture, which should be achieved through organic, cyclical, family or community-based farming. Moreover, the modern industrial approach to food security in those megaprojects, together with other capitalist strategies, tends to profit business actors and landowners rather than improve farmers' welfare.

Economic stability, political security and developmentalism (at the expense of environmentalism) have characterised Suharto's political rhetoric; and these were translated effectively into his educational policies and practices for many decades. Even years after the 1998 democratic reformation, legacies of his educational trajectories in Indonesian schooling cultures remain. Consequently, environmental education in official Indonesian K-12 curricula is hitherto virtually non-existent. For instance, Parker (2017, 1261) meticulously traced environmentally oriented content in the 2013 national curriculum and concluded that 'EE carries very little weight in the Curriculum'. While there are mentions about being a part of the solution to problems around the natural environment in core competencies for all grades and subjects, these mentions were not operationalised into core and specific competencies, which could be used by teachers in lesson plans. Natural sciences subjects do include content about natural cycles and the impacts of human activities, but the underlying approach is broadly scientific, naturalist, apolitical, and based on the assumption that earth's resources are there for humans to use. Parker

(2017) also identified how the 2013 National Curriculum was strongly framed within religion, encouraging students to be thankful that God created the universe for humans to live, and that God created Indonesia as plentiful of different resources. Parker (2017) also suggested that – while it is not completely unproblematic, such as how it might exclude non-religious students – an EE based on religious cosmology could be an effective and strategic way to support Indonesia to mitigate and adapt to climate change.

It is against these contemporary socio-political-religious-ecological-educational backdrops in Indonesia that Ath-Thaariq eco-*pesantren* was founded in 2008 by Nyai Nissa Wargadipura in West Java (Nyai is the term used to address the wife of a Kyai or *pesantren* leader). Growing up in a farmer's family, Nyai Nissa Wargadipura had been an activist advocating farmers' rights since she was a college student in the 1990s. She continued to be an activist after graduating, and in 1999, she co-founded a regional farmers' union *Serikat Petani Pasundan*. Embodying the suffering of local farmers and the years of hardship in farmer activism, one night in 2008 Nyai Nissa prayed to Allah (*salat tahajud*) and in her tears, she begged Allah to show her the way (pers. comm., August 16, 2022). An epiphany came, and Nyai Nissa started Ath-Thaariq eco-*pesantren*.

Pesantren is a form of Islamic education in Indonesia dating back few hundred years. In a *pesantren*, students live in and learn Islam through daily religious practice and family-like relationships with the leaders (Wijaya Mulya et al. 2022). In this setting, the persona and religious interpretations of the *pesantren* founder/leader traditionally become the major educational framework, replacing national curriculum and educational policies. This leader/*kyai*-centric condition might be slightly different across *pesantrens*, for example, Nyai Nissa established less hierarchical and more democratic decision-making practices in Ath-Thaariq *pesantren* (Sulistiyati 2023). Historically considered as non-formal education, *pesantrens* are now formally recognised by the Indonesian education system if they follow a structured curriculum (Ministry of Religious Affairs 2022). Mostly located in rural areas, *pesantrens* function as an alternative education especially for poor rural families because they offer food and lodging on top of education. Today, some urban *pesantrens* provide formal education and modern residential services, including laundry, catering and cleaning services for Indonesia's growing middle class; but the majority of the *pesantrens* are still traditional and maintain their humble historical origins and non-formal approach to education.

Ath-Thaariq *pesantren* is unique because it is committed to both ecological and traditional Islamic education. Located on the outskirts of Garut, a small town in West Java province, the physical building of this *pesantren* is a humble 2-storey house in the midst of a farming village. The *pesantren* premises include open green spaces that include vegetable gardens, a paddy field, fishpond, chicken pens and a composting area. In alignment with her background as an activist, Nyai Nissa wanted the *pesantren* to be 'a living proof, a laboratory, or an example of sustainable farming' (pers. comm., August 16, 2017) that is rooted in locality and Islamic spirituality. She wanted to show local farmers and teach students how farming can be done without chemical fertilisers and synthetic pesticides. The reason for advocating sustainable practices in this *pesantren* was the spiritual understanding of the interconnectedness between God, human and natural worlds from an Islamic perspective (see Findings). The plan was not an immediate success – crops failed, and pests attacked – but after a few years of learning and consistent commitment, the organic farming ecosystem started to thrive. Because of the limited

financial resources and building capacity, only a maximum of 30 secondary students (called *santri* for boys, *santriwati* for girls) aged 12–17 can live in the *pesantren*; these students do not pay any fee. The activities of the students are quite similar to other *pesantrens*: they pray five times a day (*salat*), recite the Holy Quran, learn Islamic teachings and do house chores. In addition to these, students are expected to integrate ecological learning into their daily activities, such as composting, foraging and taking care of the garden, the farm and the animals. Nyai Nissa also emphasises gender equality: both male and female students must be able to clean, wash clothes and cook simple healthy dishes for themselves. In 2015, the *pesantren* caught media attention because of its unique approach and it was featured in multiple news reports. Since then, Ath-Thaariq *eco-pesantren* was visited by researchers, university students, environmental NGOs and even interfaith eco-groups. Currently, Ath-Thaariq *pesantren* is also the Food and Agricultural Organisation's (FAO) official learning centre for the United Nation's decade of family farming (2018–2028) in Indonesia.

The Ath-Thaariq *eco-pesantren* has received scholarly attention in the past, mostly from Islamic scholarship proposing new theological possibilities from the eco-praxis of Ath-Thaariq *pesantren*, such as Islamic eco-theology (Herdiansyah, Sukmana, and Lestari 2019), Green Islam (A. S. Millah 2021), eco-sufism (Irawan 2022) and ecological *da'wah*/invitation (Fitriani and Aliyudin 2021). Some highlighted the eco-feminist dimensions of the *pesantren* (e.g., Millah, Suharko, and Ikhwan 2020; Qoria'ah 2018; Sulistyati 2023); others described the conservation efforts (Muhardi, Nurdin, and Irfani 2020) and the interfaith openness of Ath-Thaariq *eco-pesantren* (Fahrurrazi 2019). There is a dearth of research connecting international EE literature and the local practice of this *pesantren*, particularly how it can enrich the available discourses, philosophical foundations, and pedagogies of contemporary international EE in order to develop various contextually relevant EE approaches – which is a gap the current study sought to fill.

Methodology

In order to explore environmental education at Ath-Thaariq *pesantren*, qualitative data were generated through a site visit, interviews with the founder and two alumni, analyses of articles in the *pesantren's* official weblog and of existing media documentations of the *pesantren*. These methods were chosen because they complemented each other in focusing on a particularistic case study, enabling us to develop a comprehensive understanding of the discursive, historical and philosophical foundations of the *pesantren's* approach to environmental education. After being cleared by the University of Surabaya's ethics committee, the first author visited the *pesantren* in August 2022 to interview the founder Nyai Nissa Wargadipura and create a field note by observing the physical conditions and spatial arrangements of the *pesantren*. The interview was audio-taped and lasted approximately 90 minutes. The conversation revolved around the history, the philosophical foundations and the pedagogical activities of the *pesantren*. The founder also showed the researcher around the premises after the interview. We sought to explore the perspectives and experience of students, but securing parental consent presented an issue, as most of the parents lived in rural areas without Internet connection. As an alternative, two adult alumni – who had access to Internet from their hometowns – were interviewed via audio-recorded video call. Relevant articles on the *pesantren's* official

weblog (<https://pesantreneкологи.blogspot.com>) were also downloaded and analysed because, as suggested by the founder, the weblog documents the *pesantren's* values, principles and activities over the last decade. In addition to field notes, interview transcripts and weblog entries as main data sources, media documentations of the *pesantren* featured in the *pesantren's* weblog were also used as additional/complementary data, that is, five audio-visual media documentations of the *pesantren* in major national media platforms (e.g., Metro TV, Kompas TV, MNC TV, NET TV and DAAI TV). These publicly available materials, together with the interview transcript and field notes, were thematically analysed following Braun and Clarke (2006): we first familiarised ourselves with the data by reading it repeatedly before inductively generating codes from the data, and finally, patterns or categories in these codes were identified, specified and named as themes. The key themes identified will be discussed in the next section.

Findings

The analysis led us to identify three key themes which complement existing – mainly WEIRD-originated – approaches to EE with more particularistic, place-based and Islam-informed views. As indicated in the Introduction section, we discuss these by using three metaphors, namely, grass, rice, and aubergine.

Grass: environmental education as a part of grassroots struggles

The first theme identified in the data was the practice of EE as closely connected to local grassroots ecological struggles, and therefore contributing to environmental justice movements. In this subsection, we argue how EE at the Ath-Thaariq eco-*pesantren* was connected to grassroots struggles, particularly farmers' struggles. Our analysis reveals that the boarding school settings of the *pesantren* stretched learning practices beyond the classroom: these were ecologically involved and connected to the farming context and its struggles. Different from mainstream EE in WEIRD contexts that tends to be scientific, intellectual and middle-class, EE in this *pesantren* was relatively more experiential, embodied and down-to-earth – just like the feeling of touching green grass with our bare feet when we visited this *pesantren*.

As the founder of Ath-Thaariq eco-*pesantren*, Nyai Nissa Wargadipura, did not have any experience as an educator, but rather, she was an activist advocating for farmers welfare, she realised that oppression of poor farmers goes together with environmental destruction:

Our survey (with local farmers' union) shows that most farmers in this region are casual labourers working for landowners. These landowners are rich local families owning most of the land in each village. Landowners want productivity, so their ways of cultivating the land destroy the ecology, the soil, and biodiversity. But there are bigger actors here, namely, the Food Estate megaprojects and mining permit holders who control thousands to millions of hectares of land in Indonesia. ... The main concept (of Food Estate) is production and development that are exploitative and only for short-term profit. Paddy fields were forced to produce three times per year. Farmers had to use more and more chemical fertilisers. Seeds were supplied by large companies; farmers became dependent on them. ... It is out of these economic and ecological conditions of injustice that Ath-Thaariq eco-*pesantren* was established. (interview with Nyai Nissa, the founder)

Based on her years of involvement in local farmer communities, Nyai Nissa believes that farmers' immediate welfare is inextricably intertwined with local natural resources, particularly the land; they and future generations of farmers can only thrive when the ecology thrives too. Yet, years of government- and wealth-led economic development translated into damage to the land for short-term profit through unsustainable farming and mining. Farmers do not necessarily enjoy a fair share of their profits and still have to endure the long-term consequences of environmental damage. Nyai Nissa saw all these as systemic, orchestrated schemes to pursue modernisation at the expense of the poor who remained bound to an even more deplete locality, thereby perpetuating cycles of poverty and injustice. For her, EE at Ath-Thaariq represents an intentional attempt to break this cycle. Data from Taiwan (Li and Shein 2023) similarly argue that place-based and culturally indigenous education is instrumental in the development of a sense of place, which in turn grounds individuals physically and emotionally, influencing their decision-making in real-life situations. For Nyai Nissa, this meant that education needs to be grounded in locality to work towards a more equal and just world. Witnessing ever-present poverty, poor health, malnutrition and continuing ecological destruction, Nyai Nissa believes in the power of knowledge and education to transform people's lives in the long run. For example, she was once deeply disturbed by the fact that pregnant women in rural villages prefer to eat instant noodles and cheap snacks in plastic packages while there are nutritious wild plants freely available around them. For her, this boiled down to individuals having lost their connection with their environments, possibly as a consequence of the top-down requirements for increased production. She articulated this around the notion of cleverness:

If the children are not clever, how can they defeat poverty? In Ath-Thaariq *eco-pesantren*, we want future generations to be able to defeat poverty and injustices. To do this, we do not just bring students closer to nature, but also help them to be independent. Sovereignty begins from oneself. . . . We want students to know the farming processes, from sowing to harvesting to food on their plates. We introduced these all to them. (interview)

The concept of cleverness as the ability to find adaptive solutions to problems of survival (Hallam 2022) inherently connects the individual to their environment. It is in relation to this that Nyai Nissa explained how the *pesantren* encourages independent, self-sustained and healthy lifestyle, for example, by only providing cooked rice for lunch. In a very much Dewey-inspired take around experiential learning (Dewey 1938), students were taught to forage and cook from resources available around *pesantren* premises themselves every day. Students were also taught about sustainable farming through hands-on experience, from making compost-based fertilisers, sowing, harvesting, foraging, to simple everyday skills enhancing their ability to live independently and responsibly – like cooking, washing and cleaning up after themselves. This embodied take on 'cleverness' identifies a disconnect between these learning experiences and those of the so-called modern *pesantren*, where students are provided with laundry, catering and cleaning services so that they can focus on in-class learning. Although effective in enabling focus, this separation between the training of students and their environment is at odds with the concept of cleverness as connection with the environment. In the long run, this approach is more likely to produce students as consumers – a concept that chimes with Western approaches to sustainability – rather than stewards of the earth which is rooted in Qu'ranic teaching around the role of humankind

(further discussed in the next section). While the students in Ath-Thaariq eco-*pesantren* did not necessarily participate in climate strikes or farmers' protests, Nyai Nissa explained that they were introduced to the understanding of social injustices pertinent to farming and farmers through religious sermons and, more importantly, everyday informal conversations with the *pesantren* leaders within the contexts of a small, close-knit and family-like *pesantren* setting (see the Aubergine subsection below). Importantly, this combination of experiential learning and religiosity responds well to Somerville's (2011) warning that *doing* without reflecting – or tapping into students' beliefs – does not necessarily lead to learning but may remain, alas, 'doing'. Nyai Nissa concluded, 'In short, our education is about sustainable farming knowledge, sustainable farming practice, and social movements'.

This aligns with alumni's experiences, which connected with farmers' struggles organically, not in a structured way. One of the alumni interviewed in this study, Anggi (pseudonym), recalled:

When Nyai Nissa and I did garden work together at the *pesantren*, she told me about her past involvements with the farmer union and what their struggles were. One day, some of the leaders from the regional farmer union visited the *pesantren*. We talked among ourselves (students) about who the guests were, why they came, what the contents of their meeting with Nyai Nissa were, and then conversations about farmers' struggles were recurring in the following days at the *pesantren*. I also remember during my time in Ath-Thaariq *pesantren*, some students from another farming village that was struggling against gold mining projects were hosted there. Through everyday interactions with these students from that village, I understood day-to-day struggles of farmers and their families in the context of mining industry expansion.

Through these organic, informal and family-like experiences and conversations, students were connected with the dire realities of local farmers' lives. The encounter was powerful for Anggi, because it gave her memorable interactions with the real victims of injustices as well as the activists fighting for them. This educational practice and its socio-political underpinnings at Ath-Thaariq eco-*pesantren* demonstrate the possibility for an EE that is different from the mainstream, where classroom-based activities, abstract knowledge and middle-class relevance are more pronounced. In contrast, such experiential, place-based and everyday forms of EE in this *pesantren* are a far cry from the middle-class green consumerism often espoused by Western-originated environmental movements (Bell 2021; Martinez-Alier 2012). In this way, Ath-Thaariq eco-*pesantren* evidences an alternative EE driven by and integrated into the local, grassroots struggles of the poor.

Rice: environmental education as embedded in the local culture and conditions

The second key theme we discuss revolves around the notion that EE is embedded within local culture. While not rejecting Western scientific approaches, Ath-Thaariq's EE stems from and emphasises traditional ecological knowledge (TEK), native herbal medicine, indigenous farming practices and local educational dynamics. We represent this theme using rice as a metaphor. Rice is the world's most popular food staple: around 3.5 billion people – mostly in non-WEIRD countries – consume rice daily. For us, it symbolises an EE that is deeply connected to rice farming (agri)culture, thereby representing a local, non-Western alternative way of thinking about sustainability, locality, (agro)ecology and environmental education.

One example of local-groundedness of Ath-Thaariq eco-*pesantren* is the effort to preserve traditional rice farming practice, local wild plants and local wisdoms. This is evidenced by the official weblog of the *pesantren* (<https://pesantrenekologi.blogspot.com>), which displays entries of various local wild plants and includes both their local and scientific names, their medicinal qualities and their growing guidelines. This focus on the local is at odds with modern knowledges and productivity-oriented farming practice, as Nyai Nissa explained:

A small example is how some plants are often considered weed (in modern monocultural farming) but actually, they are medicinal plants according to our local wisdom. When students in this *pesantren* suffered from *sariawan* (mild mouth ulcers), we picked betel leaves and used them to treat it. When students grazed their skin, we used what we called betadine leaves. This way, we can lead more organic and independent lives, not depending on money too much.

One of the alumni interviewed in this study, Puteri (pseudonym), explained how Ath-Thaariq *pesantren* sustained the development of local knowledge, such as to treat health problems. Puteri also remembers how local wild plants were cooked into traditional meals for students, particularly plants that are not commonly consumed anymore:

Some students had skin problems, and we were taught to apply fresh aloe vera to heal our skin. . . . All those green leaves I never heard of and never seen in the market were cooked and eaten together at the *pesantren*.

These edible plants became unpopular because they were unable to compete with common vegetables found at the local market – often imported from other parts of the country or from abroad. This evidences the disconnect between local farming and the global market: the strengths of the latter inevitably impact on local knowledge, distancing individuals from their immediate environments. In this respect, Ath-Thaariq *pesantren* pursued locality through their educational practices, emphasising the connection between people and the environment. This approach is reminiscent of Lynch and Mannion's (2021) concept of attunement, which calls on us to respond through our actions *with* the world (866). Attuning to – or responding to – the environment positions this not only as a context to human actions but as a more agentic entity, which we engage with interactively in negotiating aims and identities.

In order to teach students about indigenous farming, the traditionally organic, cyclical and polycultural methods are used to reproduce everyday rice farming practices. These build on the structure of local society, and include *buruan bumi*, or edible home garden, which enables families to grow and eat food from plants in their back/front yard; and *kebun talun*, a community garden and/or social forestry, where a piece of land is cultivated and managed together by a local community. The differences between family and community dissipated in this *pesantren* where the same practices are used reflectively to create a community. This element is key as it suggests that pedagogical practices aligning with students' experiences and mirroring broader society may reproduce elements of said society. Farming, so practiced, is not only conducive to produce and sustainment but also to community building. In Anggi's (an alumna) words:

In this *pesantren* we share seeds with other villagers during planting season, and fresh produce during harvest season, like coconut fruit. During events in the community, we provide manual labour for them, and they reciprocate when we had events. It's called *gotong royong*.

Moreover, by re-introducing indigenous health knowledges, EE in this *pesantren* not only connects organic, sustainable ways of living with local knowledge and resources in an embodied and everyday manner, but also simultaneously teaches how to reduce students' future dependence on money and pharmaceutical industries. In the increasingly neoliberal Indonesia where consumption defines selfhood and meaningfulness (Wijaya Mulya 2016), disrupting the perceived 'need' for more money and consumerism is a crucial pedagogical step towards a more self-contained and sustainable future.

Similarly, locally rooted EE is not just about inclusion of traditional ecological knowledge (TEK) and practices into the pedagogy, but also about contextual educational philosophy that addresses local conditions which have enabled environmental destruction. In the Indonesian agricultural context, these include (capitalism-driven) urbanisation and consumption and the forms of education that encourage them. Nyai Nissa explains:

I refer to modern education practiced in the current Indonesian education system as *ilmu pergi* (the knowledge of leaving) because the better a student's academic achievement, the more likely it is they will leave the village for a higher-paying job in the city. Consequently, farming communities are left with the less capable human resources, making it more difficult for them to fight for social and environmental justice. In contrast, education in Ath-Thaariq is *ilmu pulang dan menetap* (knowledge of returning and staying), where students are encouraged to return home and do something for the local community.

This explanation is also stated in the *pesantren's* official weblog homepage: 'Ath-Thaariq eco-*pesantren* answers the need of rural communities for capable young leaders who are able to stay in the community, live from farming, and organise movements without moving to the city'. Similarly, Puteri (an alumna) shared a story of another alumna she knows who returned home after completing her time in Ath-Thaariq and then initiated a community-based small business promoting traditional food and snacks, as well as traditional games/social play (*dolanan*). This indicates the resistant posture against the capitalist pressures to move to modern urban settings in preference for a more organic, traditional, communal and sustainable lifestyle. It evidences how a localised approach to EE may offer viable alternatives to urban migration without frustrating individual aspirations.

This subsection has argued how EE at Ath-Thaariq eco-*pesantren* has locality at its heart. Complementing mainstream Western-originated EE that commonly encourages students to cycle, recycle, plant trees, avoid plastic bags, write submissions to MPs or other relatively universal sustainability efforts, it might also be beneficial for EE in specific contexts to encourage students to think and address underpinning issues embedded in local environmental issues, such as – in this context of contemporary Indonesia – urbanisation and the marginalisation of traditional knowledge and practices.

Aubergine: environmental education as a religious-spiritual endeavour

This final key theme refers to EE as a manifestation of religiosity which connects humans and the natural world with the Divine. We argue that the Indonesian Islamic ontology underpinning EE at Ath-Thaariq eco-*pesantren* not only offers a more contextual

alternative to the mainstream EE approach but also provides an example of what the more holistic notion of 'ecologisation of education' (Bonnnett 2019) might look like in practice. This subsection argues this by discussing the religious resources underpinning EE at Ath-Thaariq eco-*pesantren* and how the unique pedagogical settings of Indonesian *pesantren* might enable a potentially more holistic approach to EE. The metaphor used to represent this theme is the aubergine, a popular food associated with humble Indonesian *pesantren* communal life more generally.

Different from relatively secular contexts of EE in WEIRD countries, the data in this study show that EE in Ath-Thaariq eco-*pesantren* is underpinned by Islamic philosophies. During the interview, Nyai Nissa explained:

The foundation of our approach to education is Islam as *rahmatan lil alamin* (blessings for the universe). This means that human religious endeavours are supposed to bring blessings to the universe, such as care for the earth and its natural world – including animals – and love, justice, and equality among humans. It is stated in the letter of Al Qashash in the Holy Quran that there are four missions for humans: (1) to worship God, or spiritual mission, (2) to enjoy the portion given to us when living on earth, or material mission, (3) to love one another, or social mission, and (4) to be a steward who take care of the planet, or ecological mission.

This interpretation of *rahmatan lil alamin* foregrounds more general moral qualities such as love, care, modesty and gratitude and, therefore, is not religiously exclusionary. In fact, interfaith groups have visited and learned from Ath-Thaariq eco-*pesantren* in recent years (Fahrurrazi 2019). What this suggests is that enabling the possibility for a localised and religious approach to EE could complement other approaches in mobilising extended communities – rather than excluding them.

Nyai Nissa asserted that *rahmatan lil alamin* is the educational vision of the Ath-Thaariq eco-*pesantren*. This vision manifested their educational practice, for example, in relation to how students were taught to observe religious rituals like praying five times a day (spiritual mission), be grateful of whatever they have and not indulging in over-consumption (material mission), develop a sense of brotherhood/sisterhood with the religious other (social mission) and care for their immediate environment around the village (ecological mission). The pedagogical approach of the *pesantren* entails various other Islamic eco-theological resources (which were also uploaded in the *pesantren's* weblog entries), such as the letter of Al Baqoroh 11 that says (in Bahasa Indonesian) '*Janganlah berbuat kerusakan di bumi*' (literally, 'do not do destruction on earth'). Conceptually, the interconnectedness of ecology and religion enabled new vocabularies to emerge and circulate, as well as new emotions, such as feelings of reverence and worshipfulness. Planting – connected to the environment in ways that are respectful of its nature – is not just a strategy to produce food and sustainment but it is a form of worship. As Puteri (alumna) put it, 'Planting as worship, not just for getting food', or in Anggi's (alumna) words, 'to see praying using a planting lens and planting using a praying lens'. This connects with the concept of ecological piety (Szczesny 1997), where religious believers are called to be pious not only in terms of observing religious rituals but also by engaging in the act of environmental care. Through this concept of ecological piety, environmental struggles, care and education are positioned as God-pleasing acts, and thus, enable a feeling of devotion and reverence in practicing

sustainability, despite setbacks and slow eco-socio-political transformations (Nilan 2021). These educational examples of EE at Ath-Thaariq eco-*pesantren* show that drawing upon Islamic theo-ontologies and religious traditions and interpretations can develop EE philosophies beyond the secular ontology of the mechanical universe predominant in WEIRD contexts.

Islam-inspired EE in Ath-Thaariq *pesantren* also presents another locally relevant feature, namely, the communal nature of *pesantren* education. A *pesantren* in Indonesia is generally a close-knit community living together in a humble shared space. Intense and memorable spatial, educational and religious experiences often made *pesantren's* alumni friends for life. For instance, a common experience shared widely among *pesantren* students is preparing and eating aubergine sambal (hot relish) together. Due to generally limited kitchen space, students often pick, burn (in open fire) and mash aubergines with tomatoes and chillies from the garden into warm sambal to be eaten with rice. Aubergine sambal has become a symbol of humble *pesantren* life (Staquf 2011). *Pesantren* education presents as a schoolhouse where educational relationships are family-like (Wijaya Mulya et al. 2022). In its hundred years of educational tradition, a *pesantren* is commonly characterised by the persona of the leader, recognised by the leader's name and the forms of Islamic interpretations articulated by the leader. In this context, structured curricula – which are often positioned as central in Western-originated education – are not as important as everyday interactions and life values practiced in its community.

This personal, flexible, non-formal and communal nature of *pesantren* education enabled EE in Ath-Thaariq eco-*pesantren* to be more holistic, coherent and powerful for the students. Nyai Nissa as the leader designed the whole education in this *pesantren* herself inscribing it within her history of activism, rather than a context of formal education. This is different from Western-originated, modern, individualistic and professionalised education where curricula are developed around contents, socio-political interests and audit regimes. Ath-Thaariq eco-*pesantren* based their education on (certain interpretations of) Islam and ecology as the overarching grand narrative, which then manifested in various dimensions of their pedagogical approach: from the philosophical foundation, the educational vision, the design of the space, the assumptions about the nature of children, to the educational relationship. As a result, students enjoyed a holistic and coherent educational microcosm where complex and intricate knowledges and wisdoms of the *pesantren* leaders about Islam and ecology supported students' learning journeys beyond mechanistic or classroom-based processes. For instance, Puteri (alumna) informally learned during her time in this *pesantren* that: 'Nyai Nissa avoids modern cleansing agents and personal care products, and only uses homemade alternatives, such as a certain kind of local salt to replace soap, and uncooked rice and turmeric for body scrubs'. Another alumna, Anggi, said: 'Students are taught by real examples such as when Nyai Nissa gently taking and returning a caterpillar that fell upon *sajadah* (prayer rug) to a nearby tree when praying at our outdoor prayer space'. In this condition, Ath-Thaariq eco-*pesantren* might have embodied Michael Bonnett's (2019) wish for 'the ecologisation of education' where the whole educational context and community are deeply and holistically ecological.

Conclusion

At the beginning of this article, we asked: how may an Indonesian ecological *pesantren* offer new understandings of EE beyond the dominant Western-originated approaches? We have articulated our response by engaging with the Ath-Thaariq *eco-pesantren* in West Java, to offer an example of EE that is locally grounded, religious and connected with grassroots struggles. We contrasted EE in this *pesantren* with the currently dominant theorisations and practices of EE which originate from secular, scientific, middle-class, individualist, post-materialist and democratically mature Western contexts. Firstly, in contrast with EE in WEIRD contexts (that tend to be scientific, intellectual, classroom-based and middle-class), EE in this *pesantren* was more experiential, down-to-earth and organically connected to local farmers' struggles. Secondly, while mainstream EE in WEIRD contexts often encourages broadly deterritorialised solutions such as cycling, recycling, planting trees, avoiding plastic bags or writing submissions to MPs, EE in this study engaged with local issues (i.e., urbanisation, capitalist ambitions, consumption, collective society) and locally relevant solutions (e.g., traditional ecological knowledges and cultural practices). We do not see these two approaches as mutually exclusive but recognise that the first has significantly overshadowed the latter, an imbalance we contribute to addressing with this paper. Thirdly, the communal, leader-centric, spiritual and less formal contexts of *pesantren* education – which are different from modern, individualistic, secular and heavily audited education in WEIRD contexts – enable a glimpse into a version of what a place-based ecologisation of education might look like.

Certainly, the case we present here has its limitations. The COVID-19 pandemic severely affected the *pesantren's* ability to host students, while migration to online learning proved to be almost impossible for this kind of EE. Another limitation is that the insight we discuss here might not be applicable to other contexts, such as EE in urban settings or modern formal schooling. Although an important limitation, our focus on an approach to EE that is politically informed (grass), locally relevant (rice) and culturally inclusive (aubergine) offers insight that – we hope – can inspire other educational institutions to develop their own approaches to EE, in ways that are aligned to their institutional identity and ethos. Further, the kind of organic, traditional, community-based farming advocated by Ath-Thaariq *pesantren* might not be able to feed the entire Indonesian population, especially when lifestyles and consumption are becoming increasingly defined by neoliberal consumerist values. The long-term development of a *pesantren* generally depends on personal leadership and might not always go beyond the life of the charismatic leader(s). We encourage readers to reflexively consider the transferability of the findings of this study into their own contexts. We are also cognisant that the scope of the analysis in this study has not reached discussions on educational policy implications, which could be complex because of the locally focused nature of the EE, while policy entails wide-reaching application. This is definitely an avenue for research that we identify as a next step. Nevertheless, the fact that this kind of EE exists in Ath-Thaariq *pesantren* might give us a glimpse of hope that a philosophically holistic, locally relevant, experientially embodied, politically engaged and ontologically spiritual EE is possible.

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Ethics approval

The methodology for this study was approved by the Research Ethics committee of the University of Surabaya (Ethics approval number: 97/KE/VII/2022).

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