

Reduce or Refuse Plastic?

The Contribution of *Pesantren* in Pasuruan

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In 2012, researchers at Radboud University co-founded the Alliance for Water, Health and Development, including scholars from a variety of disciplines such as cultural anthropology, development studies, international economy, medical sciences and religious studies. In 2018, this Alliance merged with Living Lab Indonesia, a network of entrepreneurs, government officials, civil society groups and knowledge institutes from The Netherlands and Indonesia collaborating in co-creation of knowledge (Wijsen, 2021). The living lab in which some of my PhD candidates and I are involved deals with water and waste management. People in the past depended on natural water sources (in rural areas) or metered piped water (in urban areas), whereas they now tend to go for bottled water. An example of this is Surabaya City where the use of (branded and refillable) bottled water increased from 6.4% in 1998 to 79.3% in 2014, whereas the consumption of piped water as main source of drinking water reduced from 90.7% to 20.5% in the same period (Komaruzamen 2017: 30–31). The main reason for this is that bottled water is considered to be healthier.

While quality control of piped water might be poorer than that of bottled water, and bottled water healthier than piped water, there is another issue related to bottled water: plastic waste. The use of plastic in Indonesia has increased enormously, making it the second biggest contributor to plastic waste in the world (World Bank 2021). The Indonesian government promised to reduce plastic waste by 70% by 2025, and asked civil society organisations, including faith-based organisations, to help reach the goal. The major faith-based organisations have committed themselves to do so, and have issued fatwas that discourage the use and littering of plastic. On the one hand, these organisations can mobilise masses

as their leaders are trusted, more than those of the government. On the other hand, there are various constraints, such as the gap between norms and practices in Islam (Bagir and Martiam 2016), and bureaucracy and legalism in Islamic organisations (Fikri and Colombijn 2021).

As a case study, our living lab studies the production of mineral water and its distribution in plastic bottles and cups by Islamic boarding schools (*pesantren*) in Pasuruan Regency, East Java. Together these *pesantren* produce and sell almost a million plastic bottles and cups containing mineral water per day. On the one hand, the production and distribution of mineral water is their income-generating project, necessary to sustain themselves. On the other hand, it goes against their commitment to reduce plastic waste.

The Issue

Indonesia has a population growth of 1.5%, an urbanization growth of 4.1% and an economic growth of 6% annually, making it Asia's 'third Giant' (Jotzo 2012). Sixty percent of Indonesia's population now lives in cities. Indonesia produces 200,000 tons of waste per day, and urban solid waste per person per day grew from 0.8 kg to 2.1 kg over the past ten years, but waste management did not grow accordingly (Setianto 2021; Sidabalok 2023). Indonesia's main rivers are heavily polluted by micro-plastics, chemicals, metals, and anti-biotics, creating health problems. Indonesia lost 80% of its rain forests (Badan Pusat Statistik 2017).

To make the issue of water and waste management more concrete, we focus on plastic. Seventeen percent of Indonesia's waste is plastic, making Indonesia the second largest producer of plastic waste after China (World Bank 2021). Moreover, Indonesia imports plastic waste from European countries. Seventy percent of its plastic waste, an estimated 4.8 million tons per year, is openly burned or dumped causing floods and diseases. Plastic bags and bottles pile up and clog the watercourses. The water fills up the drains and spills over onto the streets thereby causing floods. Burning plastic releases toxic gases that threaten health. It also releases black carbon, which contributes to air pollution and climate change. Decomposition of plastic takes twenty to five hundred years, depending on its type, but micro-plastics remain in the water and the soil.

At the United Nations Ocean Conference in New York in 2017, the Indonesian government promised to reduce plastic waste by 70% by the year 2025, and it asked faith-based organisations such as Nadhlatul Ulama and Muhammadiyah to mobilize its members in order to reach the target. These organisations committed

themselves to do so. They considered plastic waste to be undesirable (*makruh*) and committed themselves to reducing plastic waste.

During the Nadhlatul Ulama's National Conference of Religious Scholars in Banjar, 2019, one of the committees, namely the committee that discusses actual religious issues, addressed topics related to the ecological crisis triggered by the irresponsible disposal of plastic waste in Indonesian rivers, which is a major factor contributing to the pollution of the world's oceans; the environmental impact of the bottled water industry, and especially the depletion of neighbouring wells and fresh springs. It condemned plastic waste littering in rivers.

In line with Islamic jurisprudence, the committee distinguished different attitudes towards plastic waste. First, plastic waste is prohibited (*haram*) if its impact is harmful to health or the environment. Second, the use of plastic is not prohibited, but discouraged (*makruh*) when the impact on health and environment is small or not visible. Third, it is obligatory (*fardhu*) to obey the ban on plastic if the government has published a law on this. As a result of their deliberations, the religious leaders recommend the second attitude. The use of plastic is to be discouraged (*makruh*).

The fact is, however, that many Islamic organisations, such as schools, produce mineral water and distribute it in plastic bottles and cups as an income generating project. Drinking water is a daily need of the 280 million people in Indonesia and selling it is profitable. Islamic organisations make use of this market opportunity by selling their own brands of mineral water. Thus, in terms of Bagir and Martiam (2016), there is a clear inconsistency between norms and practices in Indonesian Muslims' attitudes towards environmental issues.

Being concerned about environmental degradation and identifying ourselves as engaged scholars of religion, our questions are: how do religious leaders come to the conclusion that plastic is not really harmful to the environment and to health? Are they aware of the fact that there are microplastics in the water that may endanger our health, and that 70% of the plastic waste in Indonesia is burned, which releases toxic gases that cause climate change? Are industrial designers able to develop eco-friendly bottles that are completely degradable in a relatively short time? Would the religious leaders propagate the use of these alternatives, even if it makes the distribution of the water slightly more expensive? Would the chief executive officers be able and willing to compete with the commercial water companies, because the water coming from an Islamic boarding school brings more blessing than that from a commercial company?

The Approach

On an explorative list of 58 Islamic organizations that have their own brand of mineral water in Indonesia, there are 7 Islamic boarding schools (*pesantren*) that are located in Pasuruan Regency in East Java (Hilya 2020). We focus our study on this regency. On 9 March 2020, during the state visit by Dutch King Willem-Alexander and Queen Máxima, the Netherlands Minister of Infrastructure and Water Management and the Indonesian Minister of Environment signed a Memorandum of Understanding to strengthen collaboration in waste management, circular economy, water quality and climate change. One of the projects agreed on was a project conducted by the East Java Provincial Water Resources Agency on the reduction of plastic waste. Our living lab was invited to study if and under what conditions *pesantren* could be involved in this. We investigated the research questions by conducting a comparative case-study in two Islamic boarding schools (*pesantren*) that are on the list. Pasuruan Regency (Kabupaten Pasuruan) has many water springs, mainly located on the slopes of Mount Arjuna and other mountains. The water there is of superior quality and is among the best in the world. The population in this regency consists of pious Muslims (*santri*), many of whom studied in Islamic boarding schools. They prefer buying mineral water that comes from the Islamic boarding school (*pesantren*) and has the blessing (*berkah*) of its religious leader (*kyai*).

The Islamic boarding schools that we selected for a comparative case-study are Pondok Pesantren Sidogiri and Pondok Pesantren Al-Yasini. The former is considered a traditional *pesantren* and operates relatively independently from the government. The latter is considered to be a modern *pesantren* and has a close relationship to the government, its religious leader (*kyai*) being the vice-regent of the regency. We expected that the modern *pesantren* would be open to green and clean technologies that could reduce plastic waste, and that the traditional *pesantren* would be reluctant to change.

Santri mineral water brand is the pioneer of *pesantren*-based mineral water. The company that produces Santri mineral water is one of the strategic business units established by Pondok Pesantren Sidogiri in 2007. The success of this *pesantren* was then followed by other *pesantren* in Pasuruan, such as Pondok Pesantren Darullughah Wadda'wah (its brand of mineral water is called Dalwa) and Pondok Pesantren Al-Yasini (its brand of mineral water is called Al-Yasini), because it was considered successful in generating income to make the *pesantren* self-reliant. *Pesantren* want to prove that they can be financially independent and compete with well-known brands, such as Aqua, owned by the Danone company.

Moreover, most of the consumers of mineral water in Pasuruan and its surroundings are devout Muslims with Nadhlatul Ulama and 'santri' backgrounds. They are traditional Muslims who tend to be obedient to religious figures such as *kyai*. This has contributed to a huge market for *pesantren*-based mineral water brands. Of course, in comparison to market leaders, such as Danone and Coca-Cola, the market share of *pesantren*-based mineral water brands is small percentage-wise, but it is growing. For traditional consumers affiliated with Nadhlatul Ulama, using 'Islamic' brands of mineral water is better because they are blessed (*berkah*) by prayers (*doa*) of the clerics (*kyai*).

During the year 2022, two doctoral candidates and I conducted (group) interviews in January and July with the leaders of the Islamic boarding schools and the chief executive officers of the cooperatives that sell *pesantren*-based mineral water. In each of the *pesantren* we spoke to about ten teachers and clerics, using open (group) interviews. Basically we discussed two questions: why is plastic not forbidden (*haram*) but discouraged (*makruh*), and if littering and the use of plastic is discouraged, why don't they opt for bio-degradable bottles for their mineral water?

Pondok Pesantren Al Yasini

Pondok Pesantren Al-Yasini is relatively young. It started in 1940. It has about 6000 students. Its religious leader is the vice-regent of Pasuruan Regency, thus religious and political authority are united. The mineral water Al Yasini is produced by Kooperasi Konsumen Pondok Pesantren Al-Yasini. It produces an estimated 3,000 bottles and some 300,000 cups of mineral water per day.

Asked why plastic is not forbidden but discouraged, the religious leaders said that the government has no law against plastic. If the government would have a ban on plastic it would be obligatory (*fardhu*) for Muslims to obey the law. Elaborating on this, we asked if the government does not take action, why do not religious leaders take the lead? The answer was that the religious leaders only have a moral authority, but no legal authority. A fatwa is an advisory, not a law. And *haram* is the strongest advice. Religious leaders cannot use it too often otherwise it becomes diluted. Moreover, there is no scientific evidence that plastic waste is harmful for health or nature. This is required for making something *haram*.

Asked why they do not go for bio-degradable bottles, if the use of plastic is discouraged, they said that the price of bio-degradable bottles is higher and that they are too small to take the lead. At least, they cannot do it alone. Asked if the fact that most bio-degradable bottles are not transparent is an obstacle, because

consumers cannot see if the water is clear, as is requested by Islamic jurisprudence, the religious leaders said that it is not. If the biodegradable bottles are halal, it is okay. They made a distinction between *Halalan* and *Toyyiban*. Not only the product itself must be *halal*, but also its conditions, such as transportation and packaging. For example, a hamburger is halal if the beef that is used is slaughtered in a ritual way. But, fast food is not healthy, thus discouraged. The same could apply to plastic packaging (bottles, cups) of mineral water. But the mindset of the consumers may be a reason for them not to buy water in packages that are not transparent. The Islamic rule that water must be clear applies only to ablution water, but maybe people think that this applies to all water. This could be a reason why the consumers prefer transparent bottles.

Last but not least they said that poor people collect plastic bottles for recycling as source of income. Thus, if the *pesantren* do away with plastic bottles, they must find a another source of income for these people.

Pondok Pesantren Sidogiri

Out of the list of brands of mineral water produced by Islamic organisations, three are produced by the Pondok Pesantren Sidogiri (Santri, Sidogiri, Giri Way). This is the oldest *pesantren* in East Java, established in 1745, and is located in the Kraton Subdistrict of Pasuruan Regency. With 20,000 students it is the largest Islamic Boarding School in East Java Province, and it is relatively rich. For its income generating projects it has the Kooperasi Pondok Pesantren which has three companies. The Santri mineral water is produced and distributed by one of them, PT. Main Mandiri Sidogiri. It produces around 360,000 bottles per day.

Asked why plastic is discouraged (*makruh*) but not forbidden (*haram*) the religious leaders said that for making plastic forbidden (*haram*) they need scientific evidence that plastic is harmful for health or environment, and this evidence is lacking. They made a distinction between essentially *haram*, and *haram* by analogy. The result is the same (*haram*), but the procedure is different. Something is essentially forbidden if it is literally mentioned in the Koran or Hadith. For example, smoking is not mentioned in the Koran nor the Hadith. It is forbidden (in Muhammadiyah) or discouraged (in Nadhlatul Ulama) by analogy. The same reasoning could apply to plastic. But, the risks must be real and visible (*dhororun bayyin*). The argument that health risks are expected or at least cannot be excluded is not enough to make plastic *haram*. The leader of the cooperative said that he personally

was convinced that plastic harms people's health, but without scientific proof there is little he could do to change the policy of the cooperative.

Asked why they do not go for biodegradable bottles, if plastic is discouraged (*makruh*), the chief executive officer of the cooperative said that they already shifted their packaging from single-use bottles to bottles that can be re-used. The cooperative has 250 supermarkets (called *Basmalah*). Some of them are in Bali, and the regional government of Bali already banned single-use plastic. Re-usable bottles are 30% more expensive than the single use ones, but marketability is not the main issue. People in Indonesia are very concerned about their health, and if they know that the presence of micro-plastics in water is unhealthy, they change their consumer behavior and pay a higher price.

Discussion and Conclusions

The case-studies confirm that there is a gap between theory and practice of plastic waste management in Islam, and that closing the gap requires complicated jurisprudence and re-interpretation. Contrary to our expectation that the modern boarding school would be open to new technologies and that the traditional boarding school would be reluctant to change, we found the opposite. The traditional *pesantren* was open to innovation, and the modern one was reluctant. An explanation could be that the traditional *pesantren* is much bigger and much richer, thus changing the packaging of mineral water is less risky for them. The large scale reduces the price. Another explanation could be that the religious leader of the modern *pesantren* was close to the political power, being the vice-regent and potential candidate to be elected as regent. Raising the price of bottled water would make him unpopular.

What the *pesantren* are waiting for is scientific evidence that plastic is harmful, and government laws that ban plastic. Although the Indonesian Government and the East Java Provincial Water Resources Agency attempt to involve Islamic organisations in integrated waste management, and they themselves want to be involved, our study confirms this is not so easy, due to various constraints.

As an engaged scholar of religion, I wish to collaborate with the religious leaders to close the gap between theory and practice of waste management, based on the principle of co-creation of knowledge. Purity is a core value of Islam, and purification not only concerns faith, but also the environment. Based on the mission and vision of Islam, I expect religious leaders to take the lead in this, and even go a step further: not to reduce, but refuse plastic.

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