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Legal Protection for Consumers of Refilled Gallon Water Contaminated with Bisphenol A (BPA) in the Perspective of Law Number 8 of 1999 concerning Consumer Protection in Indonesia

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Abstract
The demand for safe and reliable drinking water for daily consumption is on the rise in Indonesia. However, groundwater sources, a primary source of drinking water, are becoming increasingly scarce. Additionally, the risk of contamination is growing, and consumer knowledge about their rights to accurate, clear, and honest information regarding the goods and/or services they consume remains low, putting consumers at a disadvantage. Consumer protection in relation to drinking water hygiene and sanitation is based on the Consumer Protection Law and Regulation No. 43 of 2014 concerning Hygiene and Sanitation of Drinking Water Depots. The implementation of legal protection for consumers of refillable drinking water depots does not comply with the regulations outlined in the Consumer Protection Law No. 8 of 1999, leading to further problems upon closer examination. This research employs a library research approach, analyzing various documents related to the study. The author utilizes a normative legal research method employing a statutory approach and a case approach, along with empirical legal research involving field research. The findings indicate that consumer protection for refillable drinking water is not adequately implemented. Consumers continue to suffer at the hands of business actors in terms of service and the quality standards of refillable drinking water. This lack of effective protection stems from several factors: Low consumer awareness of legal protection. Business actors' lack of understanding of legal protection and the absence of business licenses and drinking water quality permits from the Health Office.

Keywords: Consumer protection, bhispenol a, refillable drinking water

Introduction

Water is a fundamental necessity for human life. It plays a vital role in our daily activities, including washing, bathing, cooking, and drinking. Given that the human body is largely composed of water, it serves as an essential and irreplaceable element for maintaining human health and well-being. Our bodies require sufficient fluid intake each day to support the proper functioning of organs, maintain metabolism, and strengthen the immune system [1].

Over the past few decades, there has been a notable shift in water consumption patterns among the Indonesian population. Whereas drinking water was once predominantly sourced from wells, groundwater, or piped water boiled at home, many people have now turned to Bottled Drinking Water (AMDK) as their primary option—largely due to its convenience and time-saving benefits.

The majority of Indonesians rely on packaged drinking water as their main source of drinking water. Mineral water is widely consumed across various segments of society and has become a primary means of meeting daily drinking water needs. According to data from Statistics Indonesia (Badan Pusat Statistik), 53.32% of households in the country use branded bottled water and refilled water as their main source of drinking water [2].

Bottled Drinking Water (hereafter referred to as AMDK) has come to dominate the drinking water market. AMDK is available in a variety of types, sizes, and packaging materials, ranging from plastic cups to refillable gallon containers. The domestic AMDK industry was pioneered by Aqua in 1975, effectively introducing a new form of consumer demand—namely, the convenience of drinking water directly from a bottle. Prior to this, consuming bottled water was not part of the typical habits of Indonesian society. However, following Aqua's emergence, it seemed as though everyone suddenly needed it, thereby giving rise to the AMDK market [3].

One of the most popular forms of bottled drinking water (AMDK) today is the refillable gallon container. This product is considered more economical and widely accessible to people from all walks of life. It is not only used in households but is also commonly found in offices, schools, restaurants, and various other public facilities.

This market has expanded in line with shifts in lifestyle, as modern consumers increasingly demand convenience and simplicity in their daily routines. It is therefore unsurprising that Aqua was soon followed by numerous other AMDK brands. By 2016, the industry had grown to include around 700 companies producing approximately 2,000 different brands. These figures were revealed by Rahmat Hidayat, Chairman of ASPADIN (the Indonesian Bottled Drinking Water Companies Association).

According to research conducted by Goldman Sachs, in 2016 Aqua held a 46.7% share of Indonesia's bottled water market—a significant decline compared to its 92.7% market share in 2006. By 2017, the presence of new competitors had further fragmented the market, with several emerging brands capturing their own niches. These included Le Minerale with 3.5%, Club at 4%, 2 Tang with 2.8%, Oasis at 1.8%, Super Utuh with 1.7%, and Prima at 1.4%. The remaining 38.1% of the market was contested by various other brands [4].

This indicates that consumers now have a wide range of choices when it comes to products, goods, and/or services they consume. Bottled drinking water is produced by large-scale manufacturers and marketed under specific brand names. There are two main types of packaging used for

bottled water: glass and plastic. The plastics commonly used include polyethylene, polypropylene, polyethylene terephthalate, polyvinyl chloride, and polycarbonate. Among these, polycarbonate is typically used for gallon-sized containers, which are designed for repeated use.

However, behind the rising consumption of refillable gallon water, there are several concerns that warrant attention—particularly regarding the safety of the packaging materials used. Reusable plastic gallons are at risk of material degradation over time, which may lead to the release of certain chemical compounds into the water, one of which is Bisphenol A (BPA).

As reported by Kompas, an investigation by the National Agency of Drug and Food Control (hereafter referred to as BPOM) revealed the migration of Bisphenol A (BPA) in reused gallon containers across six regions: Medan, Bandung, Manado, Jakarta, Banda Aceh, and North Aceh. These findings were recorded during the period of 2021 to 2022. In Banda Aceh, BPA exposure levels exceeded the permitted threshold of 0.6 parts per million (ppm) per litre during that time [5].

Although not intentionally added to drinking water products themselves, Bisphenol A (BPA) present in packaging materials can contaminate the water through a process known as migration. Migration refers to the transfer of substances from food packaging into the food or beverage it contains [6]. Laboratory tests conducted by the National Agency of Drug and Food Control (hereafter referred to as BPOM) in 2021 on samples of polycarbonate gallon containers revealed an average BPA migration level of 0.033 parts per million (ppm) from the packaging into the drinking water [7].

Therefore, it is essential to ensure that drinking water is not only readily accessible but also meets health and safety standards, in order to safeguard the fundamental right of the public to safe and clean water. Companies providing bottled drinking water (AMDK) must supply water that is fit for consumption and complies with health standards, in accordance with the legal requirements set out in Law No. 8 of 1999 concerning Consumer Protection.

Based on the analysis of the issues outlined above, the problem formulation for this Community Service Activity (PKM) is as follows: (1) What form of legal protection is afforded to consumers regarding BPA exposure in refillable gallon water products, in light of Law No. 8 of 1999 on Consumer Protection? (2) What measures have been taken by the government to address BPA contamination in refillable gallon water products?

Research Method

Research serves as a means to understand, resolve, and anticipate problems. Understanding refers to clarifying an issue or information that was previously unknown, thereby turning ignorance into knowledge. Resolving involves reducing or eliminating the problem, while anticipating refers to taking proactive measures to prevent the issue from arising [8].

This study employs a normative-empirical approach. According to Abdulkadir Muhammad [9], normative-empirical legal research (applied law research) refers to research that examines legal behaviour as a product, through the study of normative-empirical legal cases. Normative-empirical (applied) legal research begins with written positive legal provisions and proceeds to examine in concreto legal events within society. As such, this type of research always involves a combination of two stages of analysis, namely [10]:

The first stage involves examining the applicable normative legal provisions; The second stage concerns their application to in concreto events with the aim of achieving pre-established objectives. This application may be reflected through concrete actions or legal documents. The outcome of such application provides an understanding of whether the normative legal provisions under review have been properly implemented in practice.

This dual-stage approach requires both secondary and primary data. The purpose of this study is to provide a systematic and objective overview of the realities surrounding the research subject. The emphasis of the author's research lies in a single variable—namely, to formulate recommendations concerning legal protection for consumers. The chosen research method focuses on objectively measuring social phenomena. To enable such measurement, each social phenomenon is broken down into several components: problems, variables, and indicators, with particular focus on consumer legal protection and governmental efforts in addressing and resolving the relevant issues.

Result and Discussion

Legal Protection for Consumers Regarding BPA Exposure in Refillable Gallon Water Products in Light of Law No. 8 of 1999 on Consumer Protection

Consumer protection is not merely about physical safety; rather, it concerns the safeguarding of abstract rights. In essence, consumer protection is closely linked to the legal recognition and enforcement of consumers' rights as stipulated in Article 4 of Law No. 8 of 1999 on Consumer Protection, which outlines the following consumer rights [11]:

a. Consumer rights include:

1. The right to comfort, security, and safety in consuming goods and/or services;
2. The right to choose goods and/or services and to obtain such goods and/or services in accordance with the exchange value, agreed conditions, and guarantees;
3. The right to accurate, clear, and honest information regarding the condition and guarantees of the goods and/or services;
4. The right to express opinions and lodge complaints regarding the goods and/or services used;
5. The right to advocacy, protection, and appropriate dispute resolution concerning consumer protection;
6. The right to receive consumer education and guidance;
7. The right to be treated or served properly, honestly, and without discrimination;
8. The right to receive compensation, reimbursement and/or replacement if the goods and/or services received do not comply with the agreement or are not provided as they should be;

The recognition of consumer rights as part of consumer protection regulations is expected, on the one hand, to prevent consumers from suffering harm, and on the other hand, to support the activities of producers.

Rights and obligations form the very structure of legal systems, wherein the obligations of business actors are inherently reflected as the rights of consumers. Consumers are also entitled to protection from the negative impacts of

unfair competition, as business activities are often conducted dishonestly by certain entrepreneurs. Among the key obligations of business actors are the following:

b. The obligations of business actors include:

1. Acting in good faith in the conduct of their business activities;
2. Providing accurate, clear, and honest information regarding the condition and guarantees of goods and/or services, as well as offering explanations on their use, repair, and maintenance;
3. Treating and serving consumers properly, honestly, and without discrimination;
4. Ensuring the quality of goods and/or services produced and/or traded in accordance with applicable quality standards;
5. Allowing consumers, the opportunity to test and/or try specific goods and/or services, and providing guarantees and/or warranties for the goods produced and/or traded;
6. Providing compensation, indemnification, and/or replacement for losses incurred from the use, application, or benefit of the goods and/or services traded;
7. Providing compensation, indemnification, and/or replacement if the goods and/or services received or used are not in accordance with the agreement.

The public's limited awareness regarding the health risks associated with bottled drinking water products is a major factor contributing to the continued use of hazardous chemical substances by producers, which in turn leads to the presence of microplastics in the packaging. This issue is further exacerbated by consumer behaviour that tends to prioritise low prices over quality, thereby normalising the use of harmful chemicals among manufacturers.

Several entrepreneurs offer bottled drinking water to meet the public's need for safe and ready-to-drink water. In the Bottled Drinking Water (AMDK) industry, ensuring that water is of high quality and safe for consumption requires careful attention to certain key aspects, particularly the water source and treatment process. According to Said Sutomo, at least two main factors must be considered to ensure drinking water is of acceptable quality: (1) Water Source. This refers to how the water is obtained and the origin of the source itself. A clean and reliable water source is one of the primary conditions for producing potable water—for example, natural mountain springs. In the past, water could be made drinkable simply by boiling, as contamination was generally limited to basic organic pollutants such as light microorganisms, animal waste, and faecal matter, all of which could be neutralised by heat treatment. (2) Water Treatment. The method used to process the water is equally crucial in determining its quality. Especially when a proper water source is unavailable, the treatment process becomes vital. Water contaminated with industrial toxins, heavy metals, and other inorganic pollutants cannot be made safe through boiling alone. In such cases, advanced purification technologies are necessary, such as Reverse Osmosis, to ensure the water is truly safe for consumption [12].

The Dangers of Bisphenol A (BPA) Contamination. Bottled drinking water is undeniably convenient and generally considered safe for consumption. However, it is not without drawbacks—one of the most pressing concerns being that nearly all AMDK packaging is made of plastic. Plastic containers may contain microscopic chemical particles (microplastics), such as Bisphenol A (BPA) and phthalates, which pose potential health risks.

Several animal studies have indicated that the ingestion of microplastics can disrupt the endocrine system and trigger inflammatory responses. When exposure occurs over an extended period, it may interfere with the functioning of various vital organs, including the liver and kidneys.

It is therefore essential to pay attention to the plastic identification codes on bottled water containers. These codes, usually found on the bottom of the packaging, indicate the type of raw material used in the bottle's production and can help consumers make more informed choices.

Health Risks of Refillable Polycarbonate Gallons Containing BPA. Muhammad Ghozali, a macromolecular chemistry expert at the National Research and Innovation Agency (BRIN), has asserted that refillable water gallons made from polycarbonate materials may pose serious health risks, particularly when exposed to heat. This is due to the presence of Bisphenol A (BPA) in polycarbonate, a compound suspected of contributing to reproductive dysfunction and obesity [13].

Significant exposure to BPA is highly toxic to both humans and animals. Over the past decade, growing evidence has indicated the potentially harmful effects of BPA, especially regarding its ability to disrupt oestrogen activity, impair reproductive function, and interfere with developmental processes.

The health implications of BPA exposure have sparked increasing concern and global debate, with research linking the chemical to a wide range of health issues, including obesity, diabetes, neurobehavioural disorders, hypersensitivity, carcinogenic risks, and reproductive disturbances.

The Interdependence between Producers and Consumers. Producers are highly dependent on and in need of consumer support as customers. Without such support, the sustainability of a producer's business would be virtually impossible. Conversely, consumers rely heavily on the goods and services produced by producers to meet their needs [14].

This mutual dependence, rooted in necessity, creates a continuous relationship that may persist over time, depending on the ongoing nature of consumer demand. The enduring interdependence reflects the essential roles both parties play in the economic cycle—producers by supplying, and consumers by sustaining demand.

The Safety Standards of Bottled Drinking Water Products. Drinking water products sold to consumers must be suitable for consumption, meaning they must meet the criteria of potable water—clean, healthy, hygienic, and in accordance with the health standards set by the government.

However, in practice, bottled drinking water (AMDK) products often fail to meet these established health standards or do not comply with them at all.

From the perspective of prevailing Indonesian law, the use of goods and/or services circulating in society relates to the rights and obligations of individuals as consumers. This is clarified in Article 1 paragraph (2) of Law Number 8 of 1999 concerning Consumer Protection, which defines a consumer as any person who uses goods and/or services available in the community for the benefit of themselves,

their family, others, or other living beings, and not for commercial purposes.

As a further form of consumer protection, Law Number 18 of 2012 concerning Food stipulates that the establishment of food packaging standards is one of the implementations of Food Safety. Article 82 paragraph (2) states: "Any person who produces packaged food is obliged to use food packaging materials that do not endanger human health."

These provisions should be of particular concern for business actors and producers, as their obligations correspond to the rights of consumers. In light of the increasing reliance on plastic packaging, providing warnings regarding the presence of Bisphenol A (BPA) in packaging could serve as an alternative step for business actors to ensure that consumers are aware of such content and can exercise greater caution.

For consumers who suffer losses due to business actors, the Consumer Protection Act (UUPK) provides a legal remedy, as stipulated in Article 45, which states:

1. Every consumer who suffers a loss may file a lawsuit against the business actor through an institution authorised to resolve disputes between consumers and business actors or through the courts within the general judiciary.
2. Consumer dispute resolution may be pursued through the courts or by out-of-court settlement based on the voluntary agreement of the disputing parties.
3. Out-of-court dispute resolution, as referred to in paragraph (2), does not eliminate criminal liability as regulated in this Law.
4. If the consumer dispute resolution process outside the court has been chosen, a lawsuit through the court may only be pursued if such process is declared unsuccessful by one of the parties or by both disputing parties.

Consumer dispute resolution may be pursued through one of the following methods:

1. Amicable settlement between the disputing parties (the business actor and the consumer) without involving the court or a neutral third party.
2. Litigation, whereby the dispute is resolved through the courts, in accordance with the provisions of the general judiciary.
3. Alternative dispute resolution outside the court through the Consumer Dispute Settlement Agency (Badan Penyelesaian Sengketa Konsumen – BPSK).

Forms of Sanctions for Violations of Consumer Protection by Business Actors:

a. Administrative sanctions may be imposed on business actors who fail to fulfil their obligations to consumers, as stipulated in Article 60 of Law Number 8 of 1999 concerning Consumer Protection, which states:

1. The Consumer Dispute Settlement Agency (BPSK) is authorised to impose administrative sanctions on business actors who violate Article 19 paragraphs (2) and (3), Article 20, Article 25, and Article 26.
2. The administrative sanction shall be in the form of compensation determination up to a maximum amount of IDR 200,000,000.00 (two hundred million rupiah).
3. The procedures for determining the administrative sanctions as referred to in paragraph (1) shall be further regulated by statutory regulations.

b. Criminal Sanctions, if it is proven that the business actor has committed acts prohibited for business operators, as stipulated in Article 62 of Law Number 8 of 1999 concerning Consumer Protection, namely:

1. Business actors who violate the provisions as referred to in Articles 8, 9, 10, 13 paragraphs (2), 15, 17 paragraph (1) letters a, b, c, e, paragraph (2), and Article 18 shall be subject to a maximum imprisonment of 5 (five) years or a maximum fine of IDR 2,000,000,000.00 (two billion rupiah).
2. Business actors who violate the provisions as referred to in Articles 11, 12, 13 paragraphs (1), 14, 16, and 17 paragraph (1) letters d and f shall be subject to a maximum imprisonment of 2 (two) years or a maximum fine of IDR 500,000,000.00 (five hundred million rupiah).
3. In the case of violations resulting in serious injury, severe illness, permanent disability, or death, the relevant criminal provisions shall apply.

The Government's Measures in Mitigating BPA Contamination in Reusable Gallon Bottled Water Products

The issue of Bisphenol A (BPA) contamination in refillable water gallon containers has emerged as a strategic concern directly related to consumers' rights to product safety, particularly in relation to bottled drinking water widely consumed by the public. BPA is a synthetic chemical compound commonly used in the production of polycarbonate plastics, including those used in refillable gallon containers. This substance can potentially leach into the water when the containers are reused, exposed to heat, or experience material degradation. Over the long term, exposure to BPA has been scientifically proven to cause hormonal disruption, reproductive disorders, obesity, and even an increased risk of cancer, as evidenced by numerous international scientific studies [15].

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The Indonesian Government, through various ministries and technical agencies, has undertaken a range of regulatory, supervisory, and educational efforts to address the potential dangers associated with BPA contamination. Nevertheless, the effectiveness of these measures continues to face several challenges that require comprehensive reform, particularly in the following areas [16]:

1. Implementation of Legal Regulations and Technical Standards for Food Packaging. The regulation of Bisphenol A usage in bottled drinking water packaging refers generally to the broader rules on food packaging as stipulated in the National Food and Drug Authority

Regulation No. 20 of 2019 concerning Food Packaging (hereafter referred to as BPOM Regulation No. 20/2019). Refillable water gallon containers are typically made from polycarbonate plastic. This type of plastic falls under the category of monolayer plastics, the use of which is permitted provided it adheres to migration limit requirements. The specified migration limit for polycarbonate resin packaging includes both the resin and the articles produced from it. The relevant monomer in polycarbonate resin is Bisphenol A, which is subject to a maximum migration limit of 0.6 parts per million (ppm). The enforcement of this migration limit for Bisphenol A in drinking water packaging is followed up by inspections and monitoring conducted by the relevant government agencies. This regulation serves as a legal instrument to ensure that manufacturers comply with safety standards in the use of packaging materials. In addition, Law No. 18 of 2012 on Food and Law No. 8 of 1999 on Consumer Protection also act as the overarching legal frameworks that guarantee the public's right to safe and consumable food, including proper product packaging.

2. Pre-Market and Post-Market Monitoring by the National Food and Drug Authority (BPOM). Another key measure involves regulatory monitoring both prior to and following the distribution of products to the public. Pre-market surveillance includes the evaluation of packaging materials, laboratory testing, and the issuance of distribution permits. Meanwhile, post-market surveillance is carried out through field inspections, random product sampling, and laboratory testing of refillable gallon water available on the market. While enhancing food packaging safety monitoring, it is also necessary to foster compliance among businesses, including small and micro-scale enterprises, to ensure the production of consumer-safe food and packaging. The National Food and Drug Authority (BPOM), as the primary agency responsible for processed food distribution—including bottled drinking water—implements oversight through two main mechanisms: pre-market control (before circulation) and post-market control (after the product is on the market).

3. Community Education, Training, and Awareness Campaigns. In addition to regulatory and monitoring approaches, the government has launched educational and awareness programmes to inform both the public and small business operators about the dangers of BPA exposure. This is particularly important as many consumers remain unaware of the long-term health risks associated with the prolonged use of BPA-based gallon packaging. Dissemination efforts are commonly delivered through mass media, on-site outreach in local areas, and the provision of information via official websites managed by BPOM and the Ministry of Health. These initiatives aim to raise consumer awareness so that individuals can make more informed choices, such as checking the physical condition, lifespan, and material type of refillable containers before use. Nevertheless, public literacy concerning health risks from chemical exposure in packaging remains relatively low, indicating the need to further enhance both the reach and communication strategies of these educational efforts.

4. Labelling Requirements for BPA Content in Packaging. One of the policies currently under government consideration is the mandatory labelling of BPA content on refillable water gallon packaging. This move is essential to ensure transparency and empower consumers with the information needed to make informed choices. Although Indonesia has not yet formally implemented a BPA labelling requirement, several developed countries—such as Canada, Japan, and members of the European Union—have already adopted such measures, with some even imposing complete bans on the use of BPA in food packaging for infants and children. Indonesia could draw on these international practices to refine its own domestic policies by introducing mandatory BPA labelling or even restricting its use in certain food packaging applications. Labelling plays a vital role in ensuring consumers are aware of potential risks and can make health-conscious consumption decisions.

5. Capacity Building for Business Operators. Another vital aspect is capacity building for business actors, particularly in the small and medium enterprise (SME) sector. The government, through relevant regional agencies, is encouraged to provide technical assistance and training on packaging safety standards, hygienic drinking water production processes, and the importance of securing distribution permits and health certification. However, implementation of these capacity-building efforts remains suboptimal and does not yet cover all regions due to limited funding and the scarcity of field supervisors. These efforts are intended not only to promote profit-driven entrepreneurship but also to instil a sense of responsibility for consumer health and safety. In practice, many refillable water depots still operate without proper business licences or hygiene certification from local health authorities. This represents a significant challenge for regional governments to enforce regulations and provide continuous support and supervision.

Conclusion

Based on the previous discussions regarding the core issues, the following conclusions can be drawn:

Law No. 8 of 1999 clearly guarantees consumer rights, including the right to safety, comfort, and protection when consuming goods and/or services. In this context, refillable water gallons that are repeatedly used and potentially release BPA into drinking water represent products that pose a health risk to consumers. Therefore, business operators are legally obliged to ensure that the products they market comply with safety standards, provide transparent information, and do not endanger consumer well-being. Although the National Food and Drug Authority (BPOM) has issued technical regulations regarding the maximum permissible BPA migration in food packaging, the absence of a mandatory BPA labelling requirement on refillable gallons weakens consumers' ability to make well-informed and safe purchasing decisions.

The government's efforts to address BPA contamination in refillable water gallons encompass regulatory measures, monitoring, public education, and business guidance.

However, challenges in policy implementation indicate that consumer legal protection remains suboptimal. As such, it is essential to strengthen existing regulations, enhance cross-sectoral coordination, and raise legal awareness among both business operators and consumers.

Suggestion

1. The government needs to strengthen regulations and oversight concerning the safety of refillable gallon water containers by implementing BPA content labelling policies, harmonising regulations across agencies, and enhancing supervisory coordination between BPOM, the Ministry of Health, and local governments. Law enforcement and administrative sanctions for violations must also be applied consistently to ensure effective consumer protection.
2. Public education and guidance for businesses and consumers must be continuously improved by promoting awareness of the dangers of BPA and the importance of using safe packaging. Comprehensive information campaigns and technical guidance programmes will enhance consumer awareness and foster business responsibility in providing safe and consumable products.

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