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## Promoting *nasi goreng* as Indonesian cultural heritage: Harmony in taste, history and tourism aspects

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### Abstract

Culinary diversity, such as *nasi goreng*, which is easily found both at street food to luxury restaurants in Indonesia, is the most popular thing for foreign tourists. The development of *nasi goreng* over time has solidified its status as a globally recognized cultural and national identity of Indonesia. Recently, *nasi goreng* stands as a national dish, rivaling and surpassing other international delicacies in popularity and flavor. However, there is a pressing need to promote the unique characteristics of Indonesian *nasi goreng* globally to enhance the international appeal and boost regional tourism potential. This review aims to delve into the history, diversity and uniqueness of Indonesian *nasi goreng*, examining the role in enhancing local tourism and promoting Indonesia's cultural heritage. Our study showed that although *nasi goreng* is served in the same way, each *nasi goreng* in Indonesia has unique characteristics depending on the characteristics of the region. The variation in complementary ingredients across different regions contributes to Indonesia's rich diversity of *nasi goreng* types. The beauty of tourism is also present in all regions of Indonesia. Promoting Indonesian culinary tourism should expose various traditional Indonesian foods and promote the beauty of tourism from the origin of the food itself. Therefore, exploring the rich history and unique flavors of Indonesian *nasi goreng* not only highlights the essence of the nation's culinary heritage but also serves as a gateway to promoting Indonesia as a vibrant and enticing tourist destination on the global stage.

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### 1. Introduction

The rich flavors of Indonesian spices, which are renowned for their potent flavors and culinary versatility, lured colonists to collect a variety of spices from various regions in Indonesia in the distant past (1). Given the country's archipelagic nature, each island boasts distinct traditional dishes that reflect the local culture and features of the surrounding area (2). A prime example is fried rice, also known as *nasi goreng*, a tourist favorite for its

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ubiquitous presence, from street carts to upscale restaurants, and its suitability for any mealtime. Recognizing cultural significance, the Minister of Tourism and Creative Economy announced in late 2012 that the traditional recipe *nasi goreng* would represent the national cuisine of Indonesia. This decision underscores a commitment to preserving the nation's culinary heritage and marks the beginning of introducing Indonesian fare globally (1,3,4).

Indonesia boasts at least 104 types of *nasi goreng*, with the origins of 36 types traceable (5). These variations highlight the culinary diversity across the region, with each area offering a distinctive *nasi goreng* version characterized by unique sizes, colors, flavors, and toppings (6). Java alone presents twenty varieties from west to east, including well-known types of Semarangan, Javanese, Betawi, and Sundanese. Sunda leads with four distinct *nasi goreng* types, while North Sumatra, Bali, and Yogyakarta each offer three types of *nasi goreng*. Sulawesi Island serves *nasi goreng merah* (7), while Sumatra Island serves *nasi goreng Padang*, which contains mixed *rendang* (8). The extensive assortment of *nasi goreng* reflects Indonesia's rich culinary heritage and stimulates curiosity and a desire to explore these varied flavors.

The preparation of *nasi goreng* primarily involves rice, complemented by ingredients such as garlic, onion, leek, shallots, spices, chili, and soy sauce, which vary across Indonesia, enhance flavor and offer health benefits. Key components such as garlic and onions are noted for their high polyphenolic content and antioxidant capacity, with potential antidiabetic and antibacterial effects (9,10). These ingredients contribute significantly to the health of the dish (11). Moreover, the bioactive compounds in herbs and spices have positive health impacts, such as antioxidant properties that may help prevent atherosclerosis development (12). Specifically, *nasi goreng teri Medan* or anchovy Medan fried rice incorporates dried anchovies as a key ingredient, prized for their high calcium and iron content, which is beneficial to health (13). Indonesian *nasi goreng* embodies a culinary heritage that marries rich flavors with health benefits, showcasing Indonesia's gastronomic and nutritional richness in a single dish.

The diversity of Indonesian *nasi goreng* can also encourage an increase in a region's tourism potential. Previous research underscores how Western tourism thrives by showcasing culinary diversity as a tourist lure, preserving dish authenticity, and offering varied gastronomic experiences (14). The link between food and tourism also provides a platform for local economic development, which can be strengthened using culinary experiences for destination branding and marketing (15). Authenticity in food, reflecting cultural heritage, is crucial because it shapes a destination's culinary identity and plays a significant role in tourism through diverse forms and interactions (16).

*Nasi goreng*, with essential main components and seasonings, is popular among locals and tourists (17). To the best of our knowledge, there is a lack of information regarding the history, uniqueness, and promotion to enhance local tourism. Therefore, there is a pressing need to promote the unique characteristics of Indonesian *nasi goreng* globally to strengthen its international appeal and boost regional tourism potential. However, most variations of Indonesian fried rice share similar core components, and the distinctive ingredients of each region are deeply rooted in Indonesia's cultural diversity. This connection imbues each *nasi goreng* with a unique identity by incorporating locally sourced ingredients, thereby serving as a potential catalyst for promoting regional tourism. Building on this premise, this review delves into the historical evolution, regional diversity, and unique characteristics of Indonesian fried rice, emphasizing its role in enhancing local tourism and showcasing Indonesia's rich cultural heritage.

## 2. History of Nasi goreng

*Nasi goreng*, a staple cooked in a wok or frying pan, gains a unique taste from a blend of seasonings, including salt, garlic, shallots, pepper, and spices, further enriched by additions such as eggs, vegetables, seafood, or meat. Despite being a gastronomic tradition in Indonesia, *nasi goreng* is not considered an indigenous delicacy. Fried rice has been a staple dish for the Chinese people for at least 4,000 years BC (18). Historically, to avoid consuming cold rice, Chinese people recook it with various spices and herbs, discovering that the resulting fried rice was delicious. This practice has led to the widespread popularity (18). Besides its delightful taste, fried rice is popular because it reduces rice waste. Most fried rice is made from cold rice or even leftover rice.

In addition to the Chinese influence, there is another theory that *nasi goreng* was inspired by a Middle Eastern dish called Pilaf, which is rice cooked in a spiced broth (19). This statement is entirely plausible concerning a particular variant, namely Betawi goat fried rice, that uses mutton, rich spices, and Samin oil, indicating a Middle Eastern influence. Another statement is that *nasi goreng* was considered part of Dutch East Indies culture during the colonial period (20). *Nasi goreng* was mentioned in Dutch East Indies colonial literature, a serialized story published in the newspaper Sinar Hindia in 1918. During that time, trade between the Netherlands and the Dutch East Indies increased the popularity of Indonesian-style fried rice worldwide. Fried rice is also documented in "The Flavor of Holland" by Hillary Keatinge and Anneke Pieters (1995) as an Indonesian-origin dish, described as repurposed leftover rice recooked and typically served with omelets for breakfast. This historical perspective is further supported by Beb Vuyk's "Groot Indonesisch Kookboek" (1992) and J.M.J. Catenius-Van Der Meijen's "Groot Nieuw Vollidig: Oost-Indisch Kookboek" (1925), underscoring the long-standing place in culinary tradition (5).

*Nasi goreng* also appears in one of the historical episodes of Indonesia, notably consumed by Indonesian founding fathers, Bung Karno and Bung Hatta, during the preparation of the proclamation of independence at Admiral Maeda's house on August 17, 1945 (21). *Nasi goreng* and eggs were prepared for the *sahur* meal and breakfast during Ramadhan. In 1964, *nasi goreng* was on the menu of the Indonesian Theatre Restaurant, which later served in the Indonesian pavilion of the New York World's Fair Howard Palfrey Jones, the US ambassador to Indonesia during the last years of Sukarno's rule in the mid-1960s. In his memoir "Indonesia: The Possible Dream", said that he loved *nasi goreng* (22). He recounted his fondness for *nasi goreng* cooked by Hartini, one of Sukarno's wives, and praised it as the most delicious *nasi goreng* he had ever tasted. In 2018, the Indonesian government acknowledged *nasi goreng* as one of the country's five main cuisines, alongside *soto*, *sate*, *rendang*, and *gado-gado*.

## 3. Nasi goreng as an Integral Part of Indonesian Culture

*Nasi goreng* is a dish that can be consumed at any time. According to Santoso et al. (23), *nasi goreng* dishes may be presented warmly in the morning, afternoon, or midnight. In addition, *nasi goreng* is a cuisine that is well-liked across all segments of society due to its ease of preparation and short preparation time.

As a country with various ethnicities, Indonesia is rich in culture and societal characteristics rooted in each ethnicity and region. The ethnic diversity of Indonesia

contributes to a wide range of culinary preferences among its people. The multitude of tastes ultimately gives rise to a wide range of *nasi goreng* varieties (Table 1), contributing to the abundant culinary diversity in Indonesia. Based on the seasonings and basic materials used, each *nasi goreng* in Indonesia is quite similar. The uniqueness of *nasi goreng* in different regions stems from incorporating local spices and complementary ingredients, which align with each area's regional wisdom and culinary traditions. For instance, *nasi goreng*, symbolic of the Padang region, can be identified by incorporating rendang slices and a modest amount of rendang seasoning (23). The incorporation of rendang seasoning serves as a distinctive characteristic of Minangkabau cuisine. According to a CNN survey (23), *nasi goreng* was ranked as the second most delectable cuisine globally, following *rendang*. The coronation occurred after the completion of an online survey conducted by many individuals across the globe. Moreover, the inclusion of *nasi goreng* contributes to the roster of Indonesian cuisines, which rank among the most popular products globally (24).

Table 1. The *nasi goreng* type is based on region and tourism attraction place.

Region	Local/English Name	Tourism Attraction Place
Aceh	<i>Nasi goreng Aceh</i> /Aceh Fried Rice	<ul style="list-style-type: none"> <li>• Baiturrahman Mosque</li> <li>• Tugu KM 0 Sabang</li> <li>• Cut Nyak Dhien House Museum</li> </ul>
North Sumatra	<i>Nasi goreng Teri Medan</i> /Medan Anchovy Fried Rice	Toba Lake
Minangkabau	<ul style="list-style-type: none"> <li>• <i>Nasi goreng Khas Minang</i>/Minang Fried Rice</li> <li>• <i>Nasi goreng Padang</i>/Padang Fried Rice</li> </ul>	<ul style="list-style-type: none"> <li>• Pagaruyung Palace</li> <li>• Maninjau Lake</li> </ul>
Riau	<i>Nasi goreng Selais</i> /Selais Fried Rice	Muara Takus Temple
Bangka Belitung	<i>Nasi goreng Belacan</i> /Belacan Fried Rice	<ul style="list-style-type: none"> <li>• Laskar Pelangi Beach</li> <li>• Leebong Island</li> <li>• Lengkuas Island</li> <li>• Ruma Adat Belitung</li> </ul>
Jakarta/Betawi	<ul style="list-style-type: none"> <li>• <i>Nasi goreng Gila</i>/Crazy Fried Rice</li> <li>• <i>Nasi goreng Jakarta</i>/Jakarta Fried Rice</li> <li>• <i>Nasi goreng Kambing</i>/Lamb Fried Rice</li> </ul>	<ul style="list-style-type: none"> <li>• Setu Babakan Betawi Cultural Village</li> <li>• Old City Batavia</li> <li>• National Monument</li> <li>• Formulation of Proclamation Text Museum</li> </ul>
Sunda	<ul style="list-style-type: none"> <li>• <i>Nasi goreng Cibitung</i>/Cibitung Fried Rice</li> <li>• <i>Nasi goreng Kunyit</i>/Tumeric Fried Rice</li> <li>• <i>Nasi goreng Sunda</i>/Sunda Fried Rice</li> </ul>	<ul style="list-style-type: none"> <li>• Tangkuban Perahu</li> <li>• Kawah Putih Lake</li> <li>• Asian-African Conference Museum</li> </ul>
Semarang	<ul style="list-style-type: none"> <li>• <i>Nasi goreng Babat</i>/Tripe Fried Rice</li> <li>• <i>Nasi goreng Jeroan</i>/Jeroan Fried Rice</li> <li>• <i>Nasi goreng Semarang</i>/Semarang Fried Rice</li> </ul>	<ul style="list-style-type: none"> <li>• The Historical Lawang Sewu</li> <li>• Gedong Batu</li> <li>• Sam Poo Kong Temple Complex</li> </ul>
Yogyakarta	<ul style="list-style-type: none"> <li>• <i>Nasi goreng Jawa</i>/Javanese Fried Rice</li> <li>• <i>Nasi goreng Jogja</i>/Jogja Fried Rice</li> <li>• <i>Nasi goreng Sapi</i>/Beef Fried Rice</li> </ul>	<ul style="list-style-type: none"> <li>• Prambanan Temple</li> <li>• Ratu Boko Temple</li> <li>• Merapi Volcano Mountain</li> <li>• Tamansari Water Castle</li> <li>• Sonobudoyo Museum</li> </ul>

North Coast of East Java	<ul style="list-style-type: none"> <li>• <i>Nasi goreng Jawa Timur</i>/East Java Fried Rice</li> <li>• <i>Nasi goreng Jancuk</i>/Jancuk Fried Rice</li> <li>• <i>Nasi goreng Surabaya</i>/Surabaya Fried Rice</li> </ul>	<ul style="list-style-type: none"> <li>• Mount Bromo</li> <li>• Ijen Crater</li> <li>• Jodipan Rainbow Village</li> </ul>
Southern Part of East Java	<i>Nasi goreng Sosis</i> /Sausage Fried Rice	<ul style="list-style-type: none"> <li>• Penataran Temple</li> <li>• Bung Karno Museum and Library</li> </ul>
Singkawang	<i>Nasi goreng Pontianak</i> /Pontianak Fried Rice	<ul style="list-style-type: none"> <li>• Tri Dharma Bumi Raya Temple</li> <li>• Pasar Terapung Kalimantan</li> </ul>
Bali	<i>Nasi goreng Bali</i> /Bali Fried Rice	<ul style="list-style-type: none"> <li>• Tirta Empul Temple</li> <li>• Elephant Cave Ubud</li> <li>• Uluwatu Temple</li> <li>• Tanah Lot Tabanan</li> <li>• Tirta Gangga</li> </ul>
East Nusa Tenggara (NTT)	<i>Nasi goreng Jagung</i> /Corn Fried Rice	<ul style="list-style-type: none"> <li>• Komodo National Park</li> <li>• Wae Rebo Village</li> <li>• Kelimutu Lake</li> <li>• Labuan Bajo</li> <li>• Cecer Village</li> <li>• Sikka Village</li> </ul>
Bugis	<ul style="list-style-type: none"> <li>• <i>Nasi goreng Ikan Asin</i>/Salted Fish Fried Rice</li> <li>• <i>Nasi goreng merah</i>/Red Fried Rice</li> </ul>	<ul style="list-style-type: none"> <li>• Rumah Tongkonan Toraja</li> <li>• Kete Kesu Village</li> </ul>
Minahasa	<i>Nasi goreng Cakalang</i> /Skipjack Tuna Fried Rice	<ul style="list-style-type: none"> <li>• Tuanku Imam Bonjol Gravesite</li> <li>• Bukit Kasih Kanonang</li> <li>• Fort Moraya Tondano</li> </ul>

*Nasi goreng*, universally cherished across all demographics, is omnipresent and is served not only in homes but also in restaurants and hotels, particularly as a breakfast item (23). This widespread popularity underscores its viability as a profitable business venture. Recently, the evolving culinary preferences of consumers have spurred *nasi goreng* vendors to innovate, leading to the creation of new varieties such as sticky rice, rainbow, and cheese fried rice, which cater to contemporary tastes while retaining the traditional essence of the dish. Furthermore, as a national dish, *nasi goreng* has become a staple at Indonesian social events, such as weddings, where it is frequently featured as a main or buffet menu item (18).

*Nasi goreng* now symbolizes Indonesia's cultural identity globally, transcending national banquet events to feature prominently at international gatherings. It serves as a culinary ambassador in cultural diplomacy and is consistently showcased at culinary festivals (25) and international cultural introductions facilitated by the Indonesian Ministry of Foreign Affairs (26). The evolution of *nasi goreng* from its origins to its current status has embedded it deeply within the fabric of Indonesian culture, making it an integral part of the nation's identity domestically and abroad.

#### 4. The Uniqueness of Making Indonesian Nasi Goreng

*Nasi goreng* is a delectable culinary creation that enjoys broad popularity across Indonesia (27). Various places to eat, including street sellers, food stands, and star hotel

restaurants, offer *nasi goreng* menus and variations. The fundamental process of preparing *nasi goreng* is consistent across various locations and involves the stir-frying of rice with basic seasonings such as garlic, shallots, salt, pepper, and chili in a wok or frying pan, which enhances its flavor (5,28). Gardjito et al. (5) highlighted that the uniqueness of Indonesian *nasi goreng* lies in its customary garnish of crackers and pickles, which are noted for their ability to stimulate appetite. Additionally, traditional Indonesian *nasi goreng* often uses conventional equipment such as charcoal to heat the pan (Fig. 1). Charcoal, a traditional heat source, is generated through the incomplete combustion of a wide range of carbonaceous substances, such as peat, lignite, timber, nutshells, bones, and vegetables. Charcoal is used as a heating medium because it can provide an additional smokey flavor to dishes (29). The smoky aroma produced by charcoal during cooking increases the aroma of *nasi goreng* and increases consumer appetite. In addition, charcoal generates a higher temperature of dry heat than gas. Consequently, this characteristic of charcoal can preserve moisture in food (30). Furthermore, the ingredients and toppings used in making *nasi goreng* are unique features of Indonesian *nasi goreng* (Table 2).

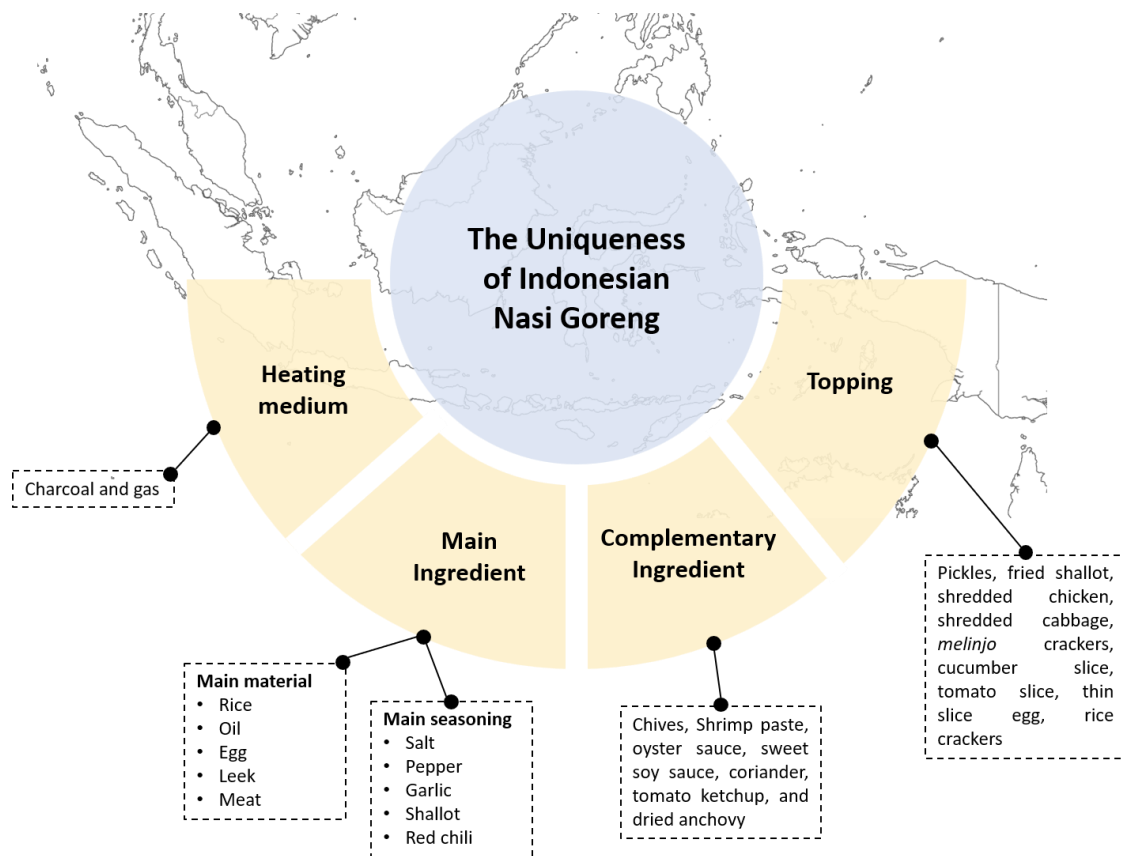


Figure 1. The Uniqueness of Indonesia *nasi goreng* is based on the process and ingredients.

Table 2. Ingredients of various Indonesian *Nasi goreng* [24]

		Types of <i>nasi goreng</i>				
		<i>Nasi goreng Teri Medan</i>	<i>Nasi goreng Jawa</i>	<i>Nasi goreng Singkawang</i>	<i>Nasi goreng merah</i>	
Ingredient	Main	Rice	✓	✓	✓	✓
		Oil	✓	✓	✓	✓
		Egg	✓	✓	✓	✓
		Leek	✓	✓	✓	✓
		Salt	✓	✓	✓	✓
		Pepper	✓	✓	✓	✓
		Garlic	✓	✓	✓	✓
		Shallots	✓	✓	✓	✓
		Red chili	✓	✓	✓	✓
		Meat (chicken/shrimp/beef)	✓	✓	✓	✓
		Complementary	Chives	✓		
	Shrimp paste			✓		
	Oyster sauce				✓	
	Sweet soy sauce			✓	✓	
	Coriander			✓		
	Tomato ketchup					✓
	Dried anchovy	✓				
	Topping	Pickles		✓		
		Fried shallot		✓		
		Shredded chicken				✓
		Shredded cabbage		✓		
		<i>Melinjo</i> crackers		✓		
		Cucumber slice		✓		
		Tomato slice		✓		
		Thin slice egg	✓	✓		✓
		Rice crackers			✓	

#### 4.1. Main Ingredients of Nasi Goreng

*Nasi goreng* recipes across Indonesia share common main ingredients, yet they feature a variety of complementing elements and toppings that reflect the unique culinary practices of each region. Rice, the main ingredient in *nasi goreng* (Fig. 1), is a fundamental part of the Indonesian diet. As a staple, white rice not only is a source of essential macronutrients such as carbohydrates, protein, and fat but also provides vital micronutrients such as vitamins, minerals, and fiber, supporting healthy digestion (31).

*Nasi goreng* is distinctively made with leftover rather than fresh rice. According to Santoso et al. (23), this preference is based on the fact that freshly cooked rice tends to produce lower quality *nasi goreng*, as it leads to grains that break, crumble, and stick to the pan, resulting in a texture that falls short of the ideal consistency for *nasi goreng*. Furthermore, the texture of *nasi goreng* in Indonesia is influenced by the taste preferences specific to each region, leading to different rice cultivars reflecting local culinary traditions and ingredient availability. For example, *nasi goreng Padang* often has a firm, dry, and easily separating rice (*pera*) due to the use of local rice cultivars known for their long grains (32). Conversely, *nasi goreng Jawa* is known for its softer and stickier texture (*pulen*) due to the local rice cultivars grown in Java (33).

In the preparation of *nasi goreng*, aside from rice, the primary components include cooking oil, which is used for frying and combining the ingredients evenly; chicken eggs, often scrambled or used as a topping to add richness; and green onions, which provide a fresh, herb flavor. *Nasi goreng* is also seasoned with fundamental spices such as garlic and shallots, which form aromatic bases. At the same time, salt and pepper enhance the overall taste, bringing out the flavors of the other ingredients and adding depth to the dish's profile (5).

#### 4.2. Complement Ingredients of Nasi Goreng

Indonesia's varied geography and cultural and social diversity have led to various culinary preferences. Each region boasts its version of *nasi goreng*, reflecting local tastes and ingredients. In Padang (Minangkabau) region, *nasi goreng* is distinctively served with slices of beef *rendang*. *Rendang* is a traditional Indonesian dish renowned for its rich flavors and aromatic complexity. Slow-cooked beef melds with a coconut milk-enriched sauce, spiced with cinnamon, cardamom, and star anise, and infused with a fresh zest of lemongrass, garlic, ginger, and galangal, creating a profoundly satisfying and multifaceted taste experience (34). Therefore, incorporating *rendang* into *nasi goreng* produces rich local cuisine flavors.

In contrast, Balinese fried rice stands out for the use of traditional Balinese spices, which offer a different taste profile. Balinese spice mix, which is centered on galangal, combines black pepper, coriander, cloves, nutmeg, candlenut, and other spices with aromatic herbs such as lemongrass and kaffir lime, creating a complex, flavorful blend with potential medicinal benefits (35). In NTT (Nusa Tenggara Timur), *nasi goreng* rice uniquely includes boiled corn shells, demonstrating the region's specific culinary approach and the adaptability of *nasi goreng* to various local ingredients and traditions.

Variations in *nasi goreng* across Indonesia are shaped by the ingredients prevalent in each locality, even on one island. For instance, Javanese fried rice is known for its unique blend of ground spices. On Java Island alone, regional differences emerge, such as Semarang's fried rice, which is typically browner and served with tripe, while Central Java's version has a reddish color and comes with cabbage and shredded free-range chicken. In Surabaya, *nasi goreng* is often brownish red, garnished with slices of omelet and shredded chicken. The variation in color in dishes such as *nasi goreng* can often be attributed to the use of sauces, such as sweet soy sauce, which impart a darker color to the food. Indonesian fried rice is distinctively characterized by sweet soy sauce, a component not commonly found in fried rice varieties from other countries. This ingredient lends a unique flavor profile to the dish, setting it apart in the global culinary landscape.

Madura salted dry fish fried rice, Riau village fried rice, and Medan anchovy fried rice are some examples of fried rice with traditional salted dry fish toppings (5,23). The use of traditional salted dry fish, known locally as *ikan asin*, is a common technique in Indonesia for drying fish using sunlight and salting with coarse salt (36). The unique aspect of these three fried rice varieties lies in their flavor profile, which emphasizes the savory, salty, and spicy notes from the salted dry fish and chilies, distinguishing them from other *nasi goreng* recipes that typically rely on sweet soy sauce or different sauces for taste.

Shrimp paste, known as *terasi*, a fermented product integral to Indonesian cuisine, is especially prevalent in the fried rice dishes of Java. *Nasi goreng*, such as Javanese, Jakarta, Cibitung, Sundanese, and Surabaya often features this ingredient. *Terasi*, made from fish or shrimp fermented by specific bacteria, is predominantly produced along the northern coast



of Java, explaining the frequent use of this region compared to other regions. Outside Java, it is produced in limited areas like Belitung and Toboali (37,38).

#### 4.3. Toppings of Nasi Goreng

*Nasi goreng* is often enriched with various ingredients or toppings to enhance the nutritional content and flavor. Proteins such as shredded chicken and eggs are commonly added, augmenting the dish's protein level and balancing the carbohydrates in *nasi goreng*. These protein sources are vital for a nutritious diet, making them excellent choices (39) for inclusion in *nasi goreng*. Additionally, vegetables such as cucumbers, tomatoes, and cabbage are commonly incorporated, providing essential vitamins and minerals. Tomatoes are rich in vitamin C, potassium, and vitamin K (40), whereas cucumbers supply vitamin A. Additionally, cabbage is a nutrient-dense vegetable rich in vitamin C, polyphenols, flavonoids, and minerals, contributing to its health benefits and nutritional value (41). For textural contrast, *nasi goreng* is typically accompanied by crispy elements such as fried *emping* (*melinjo* crackers), rice crackers, or fried shallots. These components elevate the eating experience and enhance the nutritional value of the dish, rendering *nasi goreng* a deliciously comprehensive meal.

### 5. Exploring The Link Between Nasi Goreng Diversity and Tourism in Indonesia

Indonesia, an archipelago encompassing five major islands—Sumatra, Java, Sulawesi, Kalimantan, and Papua—and numerous smaller islands, features 104 varieties of *nasi goreng* across 38 provinces (5,42). Half of these varieties are predominantly found in Java and Sumatra, within the country's culinary regions. Our study selected four representative *nasi goreng* from the major islands, highlighting the ethnic diversity and regional culinary traditions. This diversity in recipes across the regions underscores the potential for culinary tourism, appealing to both local and international travelers.

Indonesian food culture is shaped by several factors, such as culture, history, and natural environment (1). As shown in Fig. 2, Java has the most varieties of *nasi goreng* in Indonesia, with 20 varieties across the Sunda, Betawi, *Semarangan*, Yogyakarta, Surakarta, northern East Java, and southern East Java. Java's dense population plays a crucial role in the diversity of *nasi goreng*, as three-fifths of the population concentrated in Java resides there, influencing the variety and richness of the dish's regional flavors (43). In contrast, islands such as Sulawesi, known for its fish production, incorporate seafood into their *nasi goreng*. The rich marine life and coastal of Sulawesi shape the culinary offerings (44). In Aceh, which is located at the northern end of Sumatra Island, the local fried rice stands out for the bold taste caused by the abundance of spices.

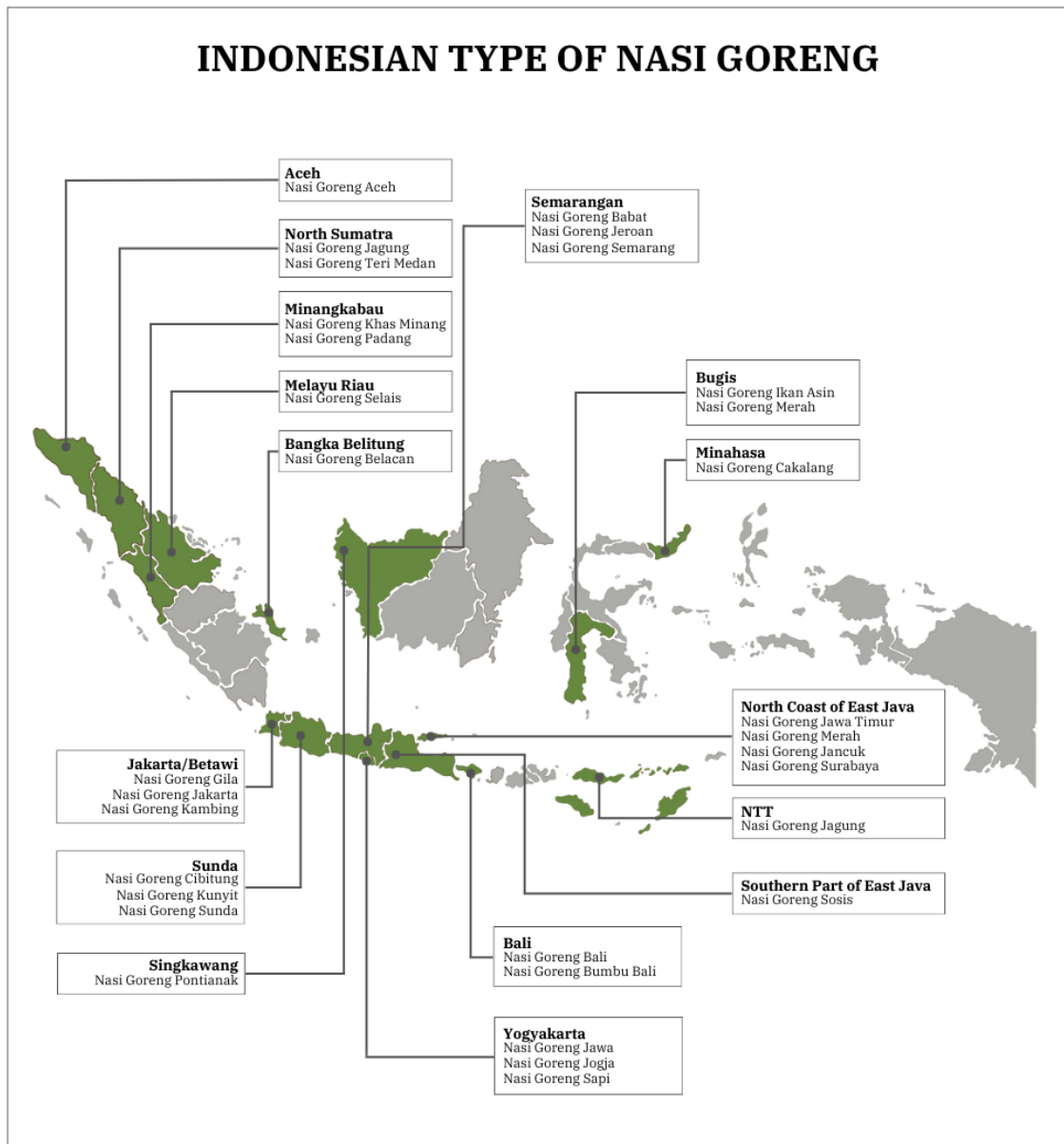


Figure 2. Regional map of nasi goreng varieties in Indonesia.

### 5.1. Sumatra Island

The variety of Indonesian cuisine, such as *nasi goreng*, throughout the archipelago offers unique experiences for local and international tourists. Despite similarities in preparation methods, each region's *nasi goreng* has distinctive features in appearance, taste, and presentation. This culinary diversity not only enriches the gastronomic experience but also paves the way for broader tourism opportunities, including natural and cultural attractions. A notable example is Lake Toba in North Sumatra, a renowned natural tourist destination. On 7 July 2020, UNESCO's Executive Board in Paris recognized the Toba Caldera in the Lake Toba region as a UNESCO Global Geopark, citing its geological significance and deep cultural and biodiversity ties with the local community (45,46).

Lake Toba (Fig. 3a), a spectacular natural phenomenon, is believed to have been created by the cataclysmic eruption of Mount Toba approximately 74,000 years ago, making it the world's largest volcanic lake (47). Spanning over 1,145 square kilometers and reaching depths

of 450 meters, its vastness rivals that of an ocean, with the sizable Samosir Island nestled in the center. The lake offers a serene retreat, characterized by the cool climate and tranquil ambiance, complemented by breathtaking views of surrounding mountains and verdant forests.



Figure 3. (a) Lake Toba (48) and (b) *Nasi goreng Teri Medan* (49).

Visitors to Lake Toba can also indulge in the local culinary delight, Medan anchovy fried rice, a Sumatran specialty (Fig. 3b). This dish combines white rice with aromatic spices and crispy, savory anchovies, creating a flavor-rich experience. The unique taste of Medan anchovy fried rice is achieved by moderating salt use and leveraging the natural saltiness of anchovies, which are a staple in Sumatran cuisine, including the traditional dish *Bekasam* (37). These anchovies are widely obtained and produced in the Lampung area, namely on Pasaran Island (50).

## 5.2. Java Island

Java, which accounts for 56.10% of Indonesia's population, is the most densely populated island in the country (51). Renowned globally as a tourism hotspot, Java attracts numerous visitors annually, drawn by its rich natural landscapes, diverse customs, vibrant culture, and modern attractions (52–54). Globally, the island of Java is famous as a tourist destination because of the uniqueness of the various cultural arts. Java Island has enormous tourism potential, as evidenced by the continued increase in the number of tourists who visit it each year (52). The island's unique cultural arts and continuously increasing number of tourists highlight the significant tourism potential, making it a preferred destination for both local and international travelers.

One of the most famous tourist destinations in Java is the Borobudur temple (Fig. 4a), located in Magelang, Central Java Province, and is known as the largest Buddhist temple in Indonesia and globally (55). According to historians (56), Borobudur is not only a religious monument for contemplation and a depiction of Buddha's journey but also a symbol of the bond between the king and his subjects. The concept of sustainable tourism has been identified as a fitting approach to preserving and promoting this significant religious and cultural site (57).

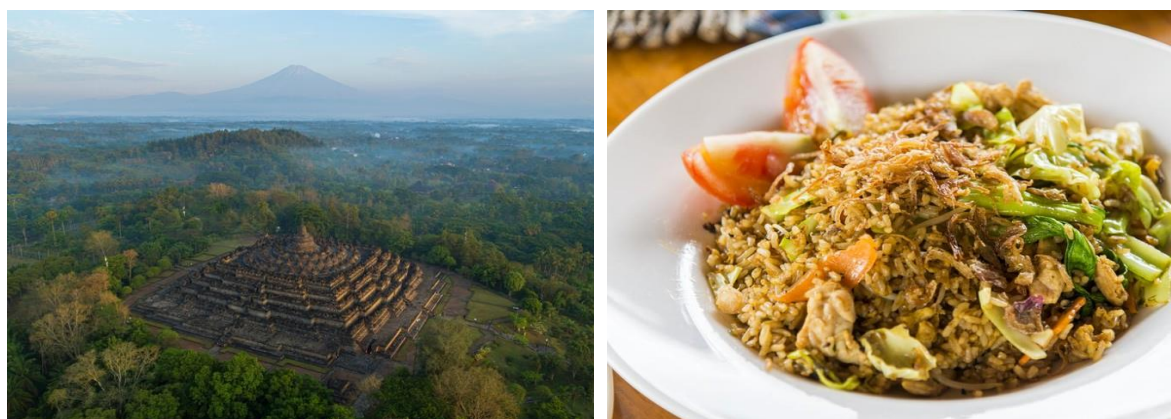


Figure 4. (a) Candi Borobudur (58) and (b) nasi goreng Jawa (59).

In the realm of culinary tourism, Javanese fried rice (Fig. 4b) stands out as a quintessential Indonesian dish that has gained popularity internationally. As the name implies, this fried rice originated from the Java region, where rice is the staple food of Javanese culture (60). Characterized by a sweet-savory taste due to the main ingredient, which is sweet soy sauce, Javanese fried rice is typically accompanied by scrambled eggs, shredded chicken, vegetables, fried onions, and sometimes additional eggs, creating a rich and satisfying meal.

### 5.3. Kalimantan Island

The island of Kalimantan is famous for its abundant natural resources, ranging from forest products and plantations to mining products (61,62). The strategic location enhances its accessibility to trade routes. With an area of 743,330 square kilometers, Kalimantan is the largest island in Southeast Asia (63). It is blessed with beautiful rivers that connect one region to another. The existence of these rivers affects the activities of the population. One of them is the emergence of many traditional markets on the river, known as floating markets.

The floating market is a local wisdom of the Kalimantan that considers river ecology as a medium of transport and social interaction (64). Traders use boats to carry their merchandise and sell it to every house on the riverbank until they reach the estuary (65). Merchandise is usually their own produce or that of their neighbors. Floating markets (Fig. 5a) in South Kalimantan can still be found on the Barito River, at the mouth of the Kuin River and Lokbaintan River. The uniqueness of this market is that barter transactions often take place between traders on boats.



(a)



(b)

Figure 5. (a) Floating Market Kalimantan (66) and (b) nasi goreng Singkawang (67).

Culinary scenes in Kalimantan are closely influenced by Chinese culture such as that of *Choi Pan*, *Che Hun Tiau*, and *Kiam Ko Kwe*. Singkawang is the largest residence of ethnic Chinese people on the island of Kalimantan. Chinese influence also affects Singkawang's cuisine. Singkawang fried rice (Fig. 5b) is an iconic dish in the region, that is famous for its thick soy sauce seasoning, and the rice is dry with a characteristic garlic fragrance.

#### 5.4. Sulawesi Island

The name Sulawesi is thought to be derived from the local language, with Sula meaning island and Mesi meaning iron. This name was used because of the trade in iron ore, produced by mines around Lake Matano, East Luwu. Sulawesi is also one of the most popular tourist destinations in Indonesia. The uniqueness of Sulawesi Island lies in its beautiful coastline, charming mountainous regions, beautiful national parks, the habitat of many endemic animals, the diversity of traditions and culture, and the beauty of its marine parks. In fact, the sea is one of the best marine parks in the world. The provincial capitals on the island of Sulawesi are all located near the sea, so the production of marine products is easily obtained and characterized from culinary to tourism (68).

The Tana Toraja Regency is a place of interest for foreign tourists visiting Sulawesi Island. It is called the land of heavenly kings because according to myths that have been told for generations (69,70). According to the research of Yusriadi et al. (71), the people of Tana Toraja still strongly believe in the value of ancestral heritage, such as the *Lemo* cemetery, where bodies can be seen in the open, in the middle of steep rocks. This burial complex is a combination of death, art, and ritual. At certain times, the clothes worn by the deceased will be changed in the *Ma' Nene* ceremony. The *Tongkonan* house (Fig. 6a), where Puang Sangalla (King of Sangalla') rests, is also the palace where the Sangalla kingdom was governed at that time (72). Many researchers and international tourists have come to see the various traditional ceremonies performed in the Tana Toraja Regency.

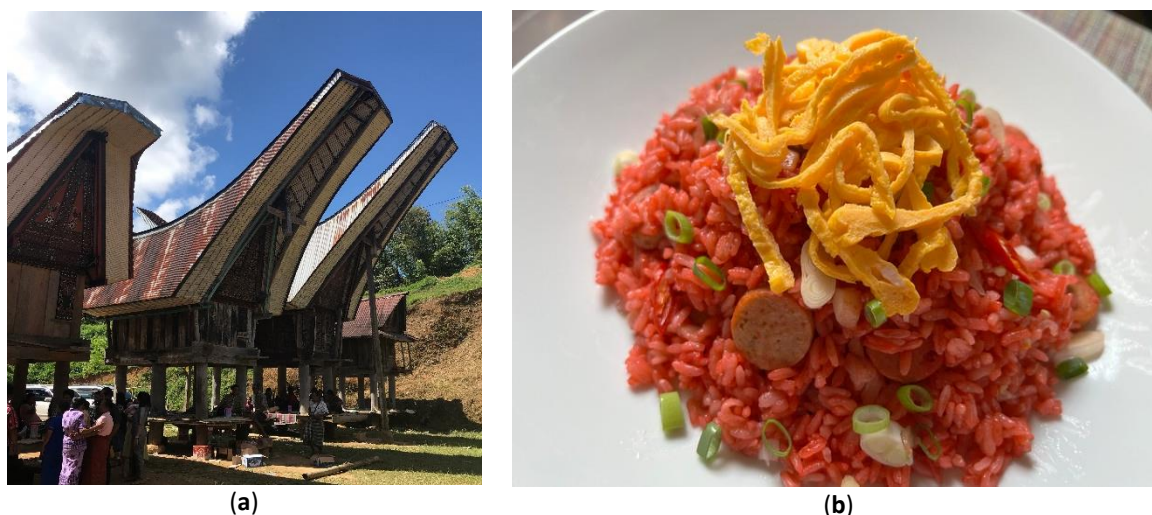


Figure 6. (a) Rumah Tongkonan and (b) nasi goreng merah (73)

A culinary specialty in Sulawesi that is famous throughout Indonesia is red fried rice, also known locally as *nasi goreng merah* (Fig. 6b). As the name suggests, this fried rice is characterized by its red color. The red color is not due to the red rice or from the coloring agent. The rice used is still white rice, the red color comes from the tomato sauce made with a typical Makassar recipe passed down directly by the ancestors.

According to the above explanation, the variety of *nasi goreng*, each with its own unique blend of flavors and ingredients, reflects the cultural richness of Indonesia's various areas. Each regional variation in *nasi goreng* offers a tale about its location, providing insights into the region's history, traditions, and culinary practices. This rich tapestry of flavors appeals not only to foodies but also to travelers looking for authentic cultural experiences. This chapter places significant emphasis on the role of *nasi goreng* in attracting visitors and cultivating a more profound appreciation for the cultural and culinary diversity of Indonesia through its examination of its distinctive characteristics in various regions. Our investigation highlights the mutually beneficial correlation between the expansion of tourism in Indonesia and the culinary heritage embodied in *nasi goreng*. It exemplifies how cuisine can serve as a potent instrument for advancing cultural diplomacy and promoting tourism.

## 6. Conclusion

*Nasi goreng* in Indonesia is strongly influenced by the sociocultural values of local communities, resulting in a diversity of flavors and appearances of *nasi goreng* from all regions. The medium of cooking, ingredients, and toppings used in making *nasi goreng* are unique features of Indonesian fried rice. The ingredients in *nasi goreng* not only elevate the culinary experience but also boost the nutritional profile of the dish, making it a flavorful and well-rounded meal. Promoting Indonesian culinary tourism should involve showcasing the diversity of traditional Indonesian foods and highlighting the scenic beauty and cultural richness of their places of origin. This study contributes to the literature on Indonesia's culinary and tourism richness. Further investigations will inevitably ensue in the future regarding fried rice from culinary science, social science, and cultural perspectives, with the ultimate goal of designating it as a worldwide intangible cultural heritage.

## Author Contributions

**A.A., P.A., R.M.** Conceptualization; Writing-review and editing; Investigation; Supervision; Data curation. **C-M.H.** Writing-review & editing; Supervision. **S.H.H.** Writing-review and editing; Data curation. **A.A., P.A., and R.M.** contributed equally as the main contributors to this paper.

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## Data Availability Statement

All the data are presented in the manuscript.

## Competing Interest

The authors declare that they have no competing interests.

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