

Nusantara on the Plate: Biosphere, Mobility, Trade and the Archipelagic Social Landscape of Food

Ahmad Najib Ariffin

Researcher, Nusantara Academy of Development, Geocultures & Ethnolinguistics (NADGE)
najib@nadge.org

Abstract: Southeast Asia's culinary landscape is an ancient, yet vibrantly living social archive shaped by shared biospheres, maritime mobility, and layered trade histories. This paper argues that the region's common food heritage — from agricultural systems and cooking practices to spice blends and street-food ecologies — should form a practical basis for cross-border social cohesion. By reframing cuisine as a transnational social landscape rather than a set of national possessions, policy and community initiatives can leverage food heritage to strengthen regional solidarity, cultural diplomacy, and inclusive local and regional development. This study draws upon extensive fieldwork through personal travels, lived experiences, and direct interactions across the Malay Archipelago and beyond, complemented by systematic reviews of historical texts, scholarly literature, and archival sources, thereby integrating ethnographic observation with documentary analysis. Shared ecological endowments and centuries of regional trade and migration have produced overlapping culinary repertoires that can be mobilised as instruments of social unity and regional cooperation across the vast Nusantara.

Keywords : biosphere; culinary; cuisine; food; gastronomy; heritage; history; Malay Archipelago, Nusantara, Southeast Asia

INTRODUCTION

Southeast Asia's food history and culinary heritage present a complex interplay of ecology, migration, trade, cultural exchange and also colonisation. Scholars have examined Southeast Asiatic cuisines through lenses of trade, colonial encounters, and localised traditions, offering valuable insights into how foodways evolve across maritime corridors. Existing studies, however, often emphasise national or regional narratives, leaving less attention to the shared biospheric and cross-migratory dimensions that bind communities together. While ethnographic approaches (Spradley, 1979; Emerson, Fretz & Shaw, 1995) and historical analyses have generally documented specific practices, few scholars or ethnographers from within the region have synthesised embodied experience with comparative archival review to highlight the archipelago's layered culinary relationships and continuities.

This research addresses that gap by situating food heritage within a shared ecological and migratory framework, drawing on both experiential fieldwork and scholarly sources. The urgency lies in recognising food as a unifying cultural landscape, and the study's objective is to examine how overlapping culinary traditions (can) articulate collective identity across especially Southeast Asia's maritime Malay Archipelago.

METHODS / METHODOLOGY

This study, while presenting conceptual ideas, adopts a methodological framework that integrates embodied experience with systematic scholarly review. The author's paternal Javanese ancestry and maternal Singaporean upbringing provide an intimate cultural grounding, while extensive travels and sustained interactions across Indonesia, Malaysia, Singapore, southern Thailand and the Philippines have afforded direct engagement with food heritage, practices, rituals and community life. These personal qualifications are reinforced by professional work in heritage studies and cultural documentation, which sharpen the ethnographic lens through which observations are made. Methodologically, the research draws upon:

- **Ethnographic fieldwork** guided by participant observation and interviews, following the practical approaches outlined by Spradley (1979) and the interpretive strategies of Emerson, Fretz, and Shaw (1995).

- **Experiential insights** derived from lived encounters with culinary traditions, markets, and communal foodways across diverse archipelagic settings.
- **Documentary and archival research**, including critical reviews of historical texts, scholarly literature, and published works on food history and cultural heritage.
- **Comparative analysis**, situating local practices within broader regional and cross-migratory contexts to highlight shared biospheric and culinary continuities.

By weaving together personal heritage, embodied experience, and ethnographic practices (Spradley, 1979; Emerson, Fretz & Shaw, 1995) with rigorous documentary analysis, the methodology ensures that the study is both academically robust and culturally attuned, reflecting the layered realities of the Malay Archipelago's food history and culinary heritage.

1. Re-introduction – A Shared Archipelagic Tapestry

Dawn breaks over a maritime world of braided waterways and lush lands: mist lifts from rain-slick river valleys as coconut palms bend to the same monsoon breaths that guide fishermen home. Wet paddies catch the shifting light; ships slide along routes navigated for generations, cooking smoke and the sharp tang of fermenting shrimp paste mark familiar harbours. Along these water-borne corridors people have moved steadily — voyagers, traders, migrants and pilgrims — carrying seeds, recipes and techniques as readily as cargo. Over centuries of exchange from village jetties to great entrepôts, those movements wove local ecologies with global tastes, producing cuisines that are not isolated national trophies but a layered tapestry of shared practices: in rice fields, coconut products, fermented pastes and woven *ketupat* all testify to a common culinary biosphere shaped by mobility, contact and continual invention.

In this environment—at once aqueous and terrestrial, forested and cultivated—food is never merely sustenance. It is memory sedimented in tastes, ecology translated into technique, and mobility rendered edible. The foods of the Malay Archipelago emerge not from a single source but from temporal confluence: a meeting of biosphere, migration, exchange and ritual across deep time and vast space.

This study paints a broad but layered proposition: the foodways of the Malay Archipelago are best understood as a tapestry shaped by ecological continuities and historical intricacies. Rather than treating cuisine as a static heritage or distinct national narrative, it is approached as a living archive in which each era or taste embodies a discernible, overlapping trace. Time and trade do not replace what came before; they inscribe upon it. The *longue durée* — from Austronesian seafaring migrations to contemporary gastronomy of nations — reveals patterns of adaptation and invention rooted in environmental realities, intensified by global maritime exchanges.



Figure 1. Map of the countries of Southeast Asia; the Malay Archipelago covers the maritime archipelagic nations namely Indonesia, Malaysia, Singapore, Brunei, the Philippines and Timor-Leste.

Geography and its Biosphere - “The Realm in Between”

The moniker “Malay Archipelago” is used here in both its geographical and civilisational senses, referring broadly to the island world stretching from the Malay Peninsula through Sumatra, Java, Borneo, Sulawesi, the Philippine isles and surroundings. Popularised in English in the 19th century by Alfred Russel Wallace, the name-phrase denotes much less a political unit, but a wide ecological and cultural zone defined by the intimacy between land and water, monsoon systems, maritime corridors and dazzling diversity of nature and people.¹

Long before modern nation-states demarcated boundaries, this region functioned as a collective biospheric crossroads: an equatorial belt straddling the Pacific and Indian Oceans, thus one of the origins of the name “Nusantara” – *nusa* meaning island(s) especially in Old Javanese (in which the name is also rendered as “Nuswantara”), but in Malay *nusa* extends as ‘realm’, and *antara* is ‘between’. Hence here is where the two great oceans converge, where remarkable flora and fauna emerge, where farming and trading communities organised their lives by predictable weather patterns, and rivers were highways linking coasts and hinterlands.²

Within this zone, the native inhabitants included ancient and diverse Malayo-Polynesian or Austronesian communities whose maritime expertise and navigational technologies enabled prehistoric expansive settlement across far-flung islands and littorals. These populations inter-mixed with earlier groups, resulting in complex patterns of inter-mingling, adaptation and continuity. Descendants of the early groups exist among present-day Orang Asli communities in Peninsular Malaysia and various aboriginal-indigene peoples across Indonesia and the Philippines.³

Ancient subsistence strategies — forest gathering, riverine fishing, sago extracting, tuber harvesting and hill rice cultivating — formed the ecological substratum upon which later agricultural systems developed. The rise of wet paddy farming raised not only rice as a staple food but even a cosmology that embedded agricultural rhythms within socio-spiritual life.⁴

Ecology, as in the biosphere, thus provided the grammar of archipelagic sustenance and cuisine. Coconut palms, fruits and stalks, pandanus, turmeric, ginger, galangal and more, in a profusion of land and marine life, which structured cooking methods and flavour logics. Preservation such as fermentation, drying and salting techniques emerged as adaptive responses to humidity and abundance. In this sense, cuisine reflects what anthropologists and gastropologists describe as embedded sustainability: a reciprocal relationship between environment and practice in which knowledge accumulates through observation and experimentation, gathered and tethered over time.⁵

Nourishment as Civilisation

Nonetheless, native ecology alone does not reign solo over a region’s culinary complexity. The archipelago’s position along maritime trade routes transformed it into a nodal exchange zone even before the early centuries of the Common Era. Politics such as the Srivijaya empire mediated commerce between India and China, while its successor Melaka raised a trading empire that became a cosmopolitan entrepôt where Southeast Asian, Indian, Chinese and Arab traders, and later European colonisers encountered one another.

The Portuguese writer Tomé Pires’ early 16th century account of Melaka describes markets dense with spices, grains and other foods — testimony to an already layered culinary culture.¹² Through such encounters came new ingredients (including the ubiquitous post-Columbian chilli, locally called *cabai*, or *lada cili*), techniques (inter-spice blending, wok frying), and alimentary stocks that got absorbed into local matrices rather than displacing them.⁶

The metaphor of a palimpsest captures this cumulative layering. Each historical phase — Austronesian settlement, immigrant influences, Islamisation with sultanates, European colonialisation, industrial urbanisation — inscribed new tastes and meanings onto existing substrates. Fermented shrimp paste did not vanish with the arrival of curry spices; nor did rice lose primacy when wheat entered colonial ports⁷. Instead, gastronomic repertoires expanded. The result is not hybridity in the sense of dilution but layering and ‘plattering’ in the geo-cultural sense: strata and miscellanea visible to those who look carefully.

In the modern era, nationalism introduced new dynamics into this already heady platter. Now, dishes that evolved across porous maritime networks are increasingly codified as national symbols. Scholars relate how foods are assembled as symbols of national identity, with cultural discourses, foodies and even governments mobilising particular foods to galvanise the spirit and unity of a country.⁸

Yet such claims, and any arguments therefrom, rest upon ecological and historical continuities that both precede and exceed modern borders. Culinary politics therefore reveals the tension between biospheric inheritance and territorial definition — between the sea's fluidity and the map's fixity.

Situated within this study's thematic intersection of time, nature and culture, the thesis foregrounds food as the medium through which these domains converge. Nature provides ingredients and inspiration; culture interprets and ritualises them; time accumulates transformations, submerging but not erasing origins.

The *longue durée* perspective adopted here resists fragmenting culinary history into isolated pots and epochs²⁰. Instead, it traces food continuities across prehistoric subsistence, classical trade networks, colonial reorganisations, and post-colonial identity formations.

The centre-staged point here is that the culinary heritage of the Malay Archipelago exemplifies temporal confluence: a sustained interaction between ecological endowment and human mobility that produces enduring yet adaptive forms.

To read local dishes such as *nasi goreng*, *rendang* or *satay* is to encounter layers of rainforest abundance, monsoon navigation, mercantile cosmopolitanism, even religious transition, and modern nation-making.

Food, in this context, is not peripheral to history and place but constitutive of it. As embodied in this grand culinary story of the Malay Archipelago, food is the most intimate register of how societies imbibe nature and nurture across time.



Figure 2. *Nasi lemak* coconut milk rice on banana leaf (photo by author)

2. Geography, Climate and Early Settlement of the Malay Archipelago

Geography and Equatorial Climes

The Malay Archipelago occupies one of the most ecologically dynamic zones on earth. Stretching from the southern-most strip of Asia - the Malay Peninsula - through the isles of Sumatra, Java, Borneo, and points east with the Philippines, Sulawesi and into the eastern Indonesian island chains, it encompasses a mind-boggling 25,000 islands across approximately 5,000,000 square kilometres of land and sea.¹ In this equatorial corner of the earth, a staggering over 15% of the world's entire species biodiversity can be found.

The region's present insularity, however, is geologically recent. During the Pleistocene epoch, lower sea levels exposed the "Sunda Shelf", linking mainland Southeast Asia to Sumatra, Java, Borneo, the

Philippines and beyond in a contiguous continental landmass.² Rising seas at the end of the last Ice Age (c. 12,000–8,000 BCE) inundated the plains, fragmenting settlements across islands, and compelling adaptation to increasingly maritime conditions. This environmental transformation fundamentally shaped the region's subsequent cultural and culinary trajectories.

Topographically, the archipelago is marked by riverine arteries, fertile valleys, forest-clad uplands, and in most of the Philippines and Indonesia, well over 100 highly active volcanoes. This volcanic belt, connected along the Pacific 'Ring of Fire', provides volcanic soils of exceptional fertility, supporting intensive wet-rice agriculture and dense populations from early historical periods. In contrast, the Malay Peninsula and Borneo lack volcano-led fertilising; their agricultural development relying more heavily on riverine and flood plain alluvium, and later irrigation or fertilisation systems rather than volcanic renewal.⁴ These geological differences contributed to varied agricultural intensities and demographic densities across the archipelago, subtly influencing regional culinary patterns.

Equally formative were the monsoon systems. The alternating northeast and southwest monsoon winds structured seasonal rainfall, agricultural cycles, and maritime navigation. The predictability of monsoon winds enabled regularised trade circuits between the Indian Ocean and the *Laut Melayu* or South China Sea and points east even centuries before the Common Era. For agrarian communities, monsoonal rainfall determined planting and harvest schedules, embedding seasonal rhythms within ritual calendars and food preparation practices. Climatic regularity thus provided a temporal scaffold upon which social and economic systems developed.⁹

The archipelago's geography also privileged coastal corridors. Navigable rivers penetrated deep inland, linking forest resources to maritime routes. Estuaries and confluences became nodal settlements where inland produce met seaborne trade, of which Kuala Lumpur 'the muddy confluence' is one of the most famous. Such ecological connectivity facilitated not only the diffusion of goods but also of ideas, religious systems, technologies, and culinary techniques. Rather than isolated islands, the region functioned as a braided network — aqueous highway interconnections in which methods of food producing, cooking and preserving plus recipes circulated alongside people.

Geography and climate, therefore, were not passive backdrops but active agents. The transformation from contiguous sub-continent to maritime constellation intensified sea-going adaptation, ecological specialisation, and exchange. Austronesians became the greatest ancient seafarers, colonising all corners of the huge Polynesian Pacific to the east, and distant Madagascar off Africa to the west, with the central Malayic *Nusantara* in between. The cuisine that emerged from this core environment reflects these structural conditions: sago where the palms thrived, rice where irrigation was possible, marine protein along coasts, and preservation strategies adapted to tropical humidity.⁹

Early Subsistence and Austronesian Expansion

Long before written records, human communities inhabited this evolving sub-continental archipelagic landscape. Archaeological evidence indicates the presence of anatomically modern *Homo sapiens* humans in Southeast Asia by at least 60,000 years ago. These early populations, often associated with Australo-Melanesian ancestry, practised hunting, foraging, and riverine fishing in forested and coastal environments. Descendants of the early inhabitants exist today among the aboriginal communities of the Malay Peninsula, collectively known as Orang Asli; among Indonesia's Masyarakat Adat (customary indigenous communities) such as the Mentawai and Papuans; and in the Philippines among Negrito groups such as the Aeta/Agta, Ati and Mamanwa.

The next, and vast majority, are the Austronesian-speaking Malayic populations, with multiple theories of their appearance in Southeast Asia, whether from within the subcontinent to a more recent 5,000-6000 years ago advancing from Taiwan through the Philippines and onward into the broader Malay Archipelago. The exact actuality may be somewhere in between, a combination or waves of Austronesian co-groups, known as Proto-Malay and Deutro-Malay waves.

Equipped with advanced maritime technologies for the time — outrigger canoes, navigational knowledge, and horticultural repertoires — these communities established settlements across coastal and riverine zones. The Austronesian expansion was not a replacement but a process of interaction, intermarriage and synthesis with earlier inhabitants, and it shows in DNA and linguistics analyses and even in food habits.^{2 3}

Subsistence strategies blended continuity and innovation. Communities relied on forest gathering, fishing, tubers, and sago extraction — the last one a resilient staple still popular in parts of Borneo and eastern Indonesia. Taro, yam, banana, and breadfruit formed a horticultural complex adapted from tropical ecologies. Rice cultivation marked a turning point: dry rice preceded irrigated systems, which in Java, Sumatra, and the Malay Peninsula enabled surplus and demographic growth.¹⁰

Wet-rice agriculture demanded communal organisation, embedding cultivation within social and ritual structures, as seen in Bali's *subak* water management system. Rice became not just a staple but a cosmological symbol of fertility and spirituality.¹¹

Protein sources expanded from rivers and seas to land meats. Fermentation — of fish, shrimp, or plants — developed early as adaptation to humidity and abundance. Techniques such as seafood pastes, leaf-wrapping, bamboo steaming, and coconut milk slow-cooking recur across the archipelago, reflecting ecological intimacy: gastronomy co-produced by environment and mobility.

Foraging, horticulture, and irrigated agriculture layered over rather than replaced one another. Sago persisted alongside rice; forest products remained integral, as in Pahang's *perah* seed *gulai isirong* dishes. This continuity underscores the study's thesis: archipelagic cuisine evolved through accumulation, not rupture. The primordial ecological matrix — forest, river, sea, monsoon — continued to resonate in contemporary foodways.

Grounded in geography and early population movement, the food and culinary history of the Malay Archipelago cannot be disentangled from its environmental foundations. Climate structured rhythm; rivers and seas enabled connection; migration spread new techniques; and ecological conditions fostered convergent gastronomic forms. Later historical layers built upon, but never erased, this intimate dialogue between nature and nourishment.

3. The Native Biosphere and the Making of an Archipelagic Cuisine

Wind and Water, Nature and Culture

Cradled thus between the Indian and Pacific Oceans, the Malay Archipelago is less a boundary than a bridge: a humid equatorial continuum where river valleys spill into estuaries, mangroves braid the coastline, and monsoon seasons dictate both sailing routes and planting cycles. Cuisine here did not emerge from isolation, but from ecological intimacy. Before the arrival of global trade goods, before the introduction of chilli or wheat, foodways were shaped by rainforest abundance, tidal fisheries, and the rhythms of rice cultivation. To understand the culinary history of the archipelago is therefore to begin not with empire or nation, but with its biosphere.

The monsoon system structured early settlement patterns. Seasonal winds enabled predictable maritime movement, linking all littoral communities across present-day Indonesia, Malaysia, southern Thailand and the Philippines. Yet these winds also dictated agricultural rhythms inland, synchronising planting and harvesting. Rice, which would become both staple and symbol, flourished in fertile alluvial valleys and volcanic soils across the Malay Archipelago. Wet rice cultivation required irrigation knowledge, communal labour, even seasonal ritual, embedding food production within social and cosmological life.

R. D. Hill's historical geography of rice in Malaya demonstrates how irrigation systems evolved not merely as technical solutions but as social institutions.¹¹

Terracing, bunding, and water control were cooperative enterprises, binding village structures to ecological realities. Rice granaries (*jelapang*, *lumbung padi*) stood not only as storage facilities but as architectural affirmations of continuity — tangible yet symbolic embodiments of food security and erstwhile spiritual protection. In some parts of the archipelago especially Java and Bali, rice cultivation was accompanied by rituals honouring fertility spirits such as Dewi Sri⁴, reflecting the inseparability of sustenance and belief.

Beyond rice, the rainforest supplied a remarkable diversity of edible plants. Tubers such as yam and taro, sago extracted from palm pith, wild bananas and a plethora of other fruits, and ubiquitous leafy greens like *kangkung* (water convulvulus) and *pucuk paku* (fern leaves) provided dietary flexibility long before intensive paddy agriculture became dominant.

Fermentation emerged as a critical anti-putrefaction necessity to the humidity and to save abundant harvests. Fermented foodstuffs such as *belacan* (shrimp paste), *budu* (fermented anchovy sauce) and *tempoyak* (fermented durian) illustrate a pattern of controlled transformation: excess protein or fruit rendered durable through microbial processes.⁷ Such techniques reveal what might be called ecological intelligence — a culinary response to surplus and perishability in a hot-humid tropical climate.

Additionally, Fermentation also signals an interplay between nature and craft. The process integrated not only environmental conditions but accumulated knowledge of timing, salinity, bacteriology and containment. Annisa Mardatillah and colleagues argue that Malay food culture reflects “embedded sustainability,” in which resource use and culinary identity co-evolve.⁸

Preservation methods such as drying fish or forming *keropok* crackers from surplus seafood extended seasonal bounty into leaner periods.

The wrapping of rice in folded banana leaves or the weaving of palm fronds into *ketupat* woven containers exemplifies this integration of material culture and edible craft: the forest itself provided vessel, texture, and even fragrance.

Cooking technologies further demonstrate how environment shaped taste. Early hearths, clay pots, and bamboo tubes were suited to boiling, steaming, and slow roasting.

Heat of another kind, on the tongue, was initially from aromatic rhizomes such as ginger, galangal and turmeric. Indeed, before the arrival of the continental American chilli in the 16th century, pungency or the piquant *pedas* taste was well achieved through local spices, peppers and gingers.

All in all, Claude Lévi-Strauss’s structuralist notion of the “culinary triangle” — raw, cooked, and fermented — finds fertile illustration here: the archipelago’s cuisine mediated between these states in response to climate and resource cycles.¹²

Human-Layered Factors

Yet ecological intimacy never implied isolation. By the early centuries of the Common Era, maritime polities such as the Srivijaya Empire of Sumatra and the Malay Peninsula were actively facilitating trade between India and China, with later ports like Melaka emerging as a trading empire with its cosmopolitan entrepôt. Clove, nutmeg/mace and sundry spices travelled outward; other ingredients and techniques flowed inward.⁵

Tomé Pires’s *Suma Oriental* records the vibrancy of Melaka’s markets in the early 16th century, describing a port where traders from the Malay World, Gujarat/India, Arabia, China and more all exchanged goods and tastes.⁶ The Malay Archipelago was not a culinary periphery but functioned as an active gastronomic broker through sailing, trading and intermarrying; in the process synthesising and redistributing flavours.

Indian and Arab traders exchanged techniques of layered spice blends and curries, integrating Malayan herbs and coconut milk usage, creating new gravies. Chinese migration brought soy fermentation, additional noodle forms, and stir-frying methods.¹³

Rather than supplanting indigenous practices, these influences interwove with them. For instance, the Malay *laksa* noodles aside, the current regional noodle *mee* or *mie* variations marry Chinese noodle type additions with Malayic spicy blends or broths; with its regional variants reflecting native fishery or meat ecologies and spice-herb balances.

The development of Baba-Nyonya or Peranakan cuisine along the Melaka Straits’ cities further exemplifies such hybridity, as these Peranakan communities combined Malay culinary ancestry, ingredients and recipes with Chinese taste sensibilities and aesthetics.¹⁴

The European colonial era intensified this layering. The Portuguese/Spanish introduction of chilli dramatically reshaped ingredient sources and flavour profiles, indigenising and normalising a form of pungent heat taste previously achieved locally through peppers and gingers. Dutch influence expanded baking traditions and cakes, while British colonial networks popularised tea consumption and expanded wheat flour availability.

Over time, wheat transformed from foreign commodity to everyday staple, visible in some local *kuih* snacks that used to exclusively utilise rice flour, and in dishes such as the ubiquitously loved *roti canai* of Malaysia — itself derived from South Asian flatbread traditions such as *prata* or *paratha* but reinterpreted through nuanced Malaysian context, technique and taste.



Fig. 3. *Roti canai* flatbread snack (photo by author)

Urbanisation in the 19th and 20th centuries accelerated culinary convergence within food typologies. Port cities like Melaka, Penang, Medan, Singapore and Manila became laboratories of taste, where hawker culture democratised access to diverse foods. Arjun Appadurai and other writers' concepts of 'national cuisine' underscores how these dynamics of food in urban markets, varied eateries and mixed family kitchens participate and then coalesce into identity formation.¹⁵

In the Malay Archipelago, street stalls and communal eating spaces functioned as sites where ethnic boundaries were both maintained and negotiated — particularly in relation to halal practices — while simultaneously producing shared local culinary vocabularies.

Thus, from sago groves and tidal fisheries to rice and spice-laden trade routes and colonial bakeries, the cuisine of the Malay Archipelago reveals itself again as a palimpsest, a layered sedimentation of foodways.

Ecology provided the grammar; trade supplied new vocabulary; ritual and memory preserved continuity amid change in the language of food. Food here is never static inheritance but adaptive acceptance — a living testament to how nature and culture converge across time and taste.

4. Agricultural and Alimential Expansion

The gradual transition from foraging, gathering and basic horticulture to organised agriculture marked one of the most consequential transformations in the food history of the Malay Archipelago. While earlier communities relied on a mobile or flexible subsistence base of forest products, tubers, and aquatic proteins, the increasingly settled lifestyle with adoption of rice cultivation reshaped landscapes, labour systems, and certainly the dietary foundations of the region.

This transformation was not likely sudden nor uniform. Rather, agricultural systems developed through centuries of adaptation to local ecologies, riverine hydrology, and monsoon rhythms for plant life and its irrigation. The emergence of wet-rice agriculture, in particular, created enduring relationships between landform management, culinary culture, ritual life, and even architectural forms.

The Rise of Rice

Rice cultivation in the archipelago evolved through stages beginning with dry or hill rice cultivation before the later development of irrigated wet-rice systems. Archaeological and historical evidence suggests that rice was present in parts of Island Southeast Asia several millennia ago, at the latest by the third millennium BCE where archaeological evidence from sites such as Gua Sireh cave in Sarawak

(Malaysian Borneo) has identified rice remains in pottery shards carbon-dated to approximately 2300 BCE, and over time adapted to localised sub-ecological conditions.

Wet-rice agriculture, in fact, needed more than simply planting grain. It demanded coordinated land and water management, terracing for hill areas, careful bund construction, and all thus requiring collective labour organisation. Such systems flourished most prominently in areas with fertile soils and reliable water sources, including Sumatra, the Malay Peninsula, Java, Bali, and certain valleys of the Philippine islands.

Over time, irrigated rice cultivation produced stable food surpluses that supported denser populations and increasingly sophisticated social organisation.

The agricultural landscape itself became a form of cultural infrastructure. Irrigation channels directed mountain water into terraced paddies; embankments regulated flooding and drainage; and villages were often positioned strategically between upland, forests, and cultivated fields.

Rice terraces, perhaps the most visually striking agricultural adaptation in the region, represent both environmental engineering and social cooperation.

The renowned Ifugao Rice Terraces of the Philippine Cordillera, today recognised as a UNESCO World Heritage Site, exemplify this integration of landscape and agriculture.³ Built over centuries through communal labour, these terraces transformed steep mountain slopes into productive paddies capable of sustaining entire communities.¹⁶

Similar, though often smaller-scale, hill terracing systems appear across the Malay Archipelago wherever topography demanded creative cultivation techniques.



Fig. 4. Rice terraces on hillsides in Southeast Asia; this example is in Bali, Indonesia (photo by author)

Animal Domestication, Aquatic Continuity - More Than Just Protein

Agricultural productivity also depended upon animal labour. Among the most significant of these animals was the water buffalo (*Bubalus bubalis*), widely known in the Malay world as *kerbau*. The buffalo became an indispensable partner in wet-rice agriculture, providing the endurance needed to plough waterlogged fields and transport agricultural materials. Its physical adaptation to swampy environments made it uniquely suited to paddy cultivation.

Beyond its economic function, the buffalo acquired symbolic importance in many agricultural societies, featuring prominently in ritual feasts and seasonal ceremonies tied to planting and harvest cycles; the highly-prized ceremonial white buffalo of Sulawesi island being a case in point.

Other domesticated animals contributed to the agricultural economy as well, though often in different capacities. Cattle of several sub-species were also used for draught power in drier zones, while goats and pigs were raised as sources of meat.

Chickens, however, occupy a particularly notable place in the history of Southeast Asian domestication. Genetic and archaeological evidence suggests that the domestication of the red junglefowl (*Gallus gallus*), the ancestor of modern chickens, occurred in parts of Southeast Asia before spreading widely across Asia and eventually the world. Chickens, plus ducks and quails, provided both meat and eggs, becoming some of the most ubiquitous protein sources in village life.

Ducks were well integrated into rice agriculture in mutually beneficial ways. In flooded paddy systems, ducks could forage for pests and insects while fertilising fields through their droppings, effectively contributing to ecological pest management. Such integrated agricultural practices illustrate the adaptive ingenuity of early farming communities, where animals, crops, and environmental cycles were interwoven within a single productive system.

The ubiquitous salted duck eggs or *telur asin* in Malay, remain a common condiment accompanying rice today, where its unique saltiness is also used in contemporary fusion foods.

Aquatic resources continued to be extremely important as sources of food, particularly protein. Fishermen or in Malay *nelayan* remained mainstays of coastal providers of *ikan* and *hasilaut* (fish and seafood) nutrition, sailing out in various-sized *perahu* or *kapal* vessels, sometimes remaining at sea for prolonged periods before returning.

This in turn gave rise to raw fish dishes such as the *umai* of especially the Melanau of Sarawak in Malaysian Borneo, where the plain fish meat is sanitised using local limes and herbs for safe consumption without fire and cooking on board.

Inland, the rivers, lakes, and canals supplied freshwater fish, shellfish and crustaceans that complemented rice-based diets year round. In many areas, fishponds or seasonal paddy-field fisheries developed alongside rice cultivation, allowing farmers to harvest aquatic protein from flooded fields. This integration of agriculture and fishing reflects the persistent aquatic orientation of archipelagic life: even as societies adopted sedentary farming, their food systems continued to draw heavily upon rivers and seas.

Agriculture and Universal Worldviews

Among cultivated plants, bananas occupy a special place in the agricultural history of the region. Botanical and genetic studies indicate that many domesticated banana varieties originated in Southeast Asia, particularly within the region extending from the Malay Peninsula through central Indonesia to New Guinea. From this source of domestication, bananas spread widely across the Indian Ocean world and later to Africa and the Americas. Within the archipelago itself, bananas served not only as a fruit crop but also as a versatile culinary ingredient, appearing in both savoury and sweet preparations.

Additionally, the banana leaf with its wide and resilient form became a practical flat 'plate' and favoured food container when folded, as found in Malaysia's ubiquitous *nasi lemak* coconut-milk rice packets and various types of Malay *kuih-muih* snacks to this day.

Agriculture also acquired profound symbolic meaning. Rice, in particular, became embedded within cosmological systems that linked fertility, prosperity, and the spiritual order. In areas of the ancient Malay Archipelago especially in Java and Bali, rice spirits or deities such as the rice goddess Dewi Sri embodies the sacred dimension of cultivation, representing the life-giving power of the grain. Ritual offerings, harvest ceremonies, and agricultural taboos or table customs reinforced communal respect for the cycles upon which survival depended. Although such cosmological beliefs varied across cultures and historical periods of the archipelago, they consistently underscored the centrality of rice in Nusantara social life.¹⁷

Architectural forms associated with rice production further illustrate the deep cultural integration of agriculture. Granaries constructed of timber, the abundant and locally preferred material — known in parts of the Malay Peninsula as *jelapang*, or *lumbung* in Indonesian contexts—were designed raised on stilts to store harvested grain safely above ground, protecting it from moisture and pests.

These structures, especially the *rangkiang* of western Sumatra, often displayed distinctive architectural or decorative features, and sometimes held ritual significance as guardians of the family or

community's food supply. The physical presence of granaries around village landscapes in itself symbolised collective prosperity and resilience.

Taken together, these agricultural developments forged enduring connections between environment, diet, ritual, and architecture. Irrigated paddies reshaped entire landscapes; widely domesticated tropical plants and animals supported holistic horticulture; granaries safeguarded harvests; and cosmological beliefs sacralised the grain or even cultivation itself.

From these intertwined systems emerged a culinary centrality, especially of rice, that still characterises the food cultures of the Malay Archipelago today.

Rice did not merely become a staple—it became the axis around which meals, labour, ritual, and cultural significance revolved.

5. Indigenous Cooking Technologies, Tools and Taste-keeping

If the ingredients of the Malay World were initially shaped by the ecology of the tropical maritime environment, the techniques by which these ingredients were transformed into food were equally shaped by tropical material culture.

Cooking technologies—hearths, vessels, utensils and packaging techniques—formed the practical interface between ecological resources and everyday sustenance. These technologies represent an often overlooked dimension of culinary history: the technological infrastructure of cuisine.

Long before the widespread introduction of metal cookware or modern stoves, cooking across the Malay Archipelago relied on a repertoire of tools constructed primarily from organic and locally available materials—clay, bamboo, wood, stone, and even leaves. These materials reflected both environmental abundance and fit the mobility needs of riverine and coastal communities.

In many cases, the cooking apparatus—such as bamboo-cylinder or leaf-wrap cooking and driftwood ladles—were themselves biodegradable and ephemeral, being intimately tied to the surrounding forest and agricultural landscape.

Hearth Structures and Fire Management

Central to the traditional Malay kitchen stood the hearth. Known in various regions as the *dapur* or *perapian*, the hearth typically consisted of a raised clay or earthen platform supporting a wood fire. In rural houses, particularly those built on stilts, the hearth was often constructed from compacted clay or a metal tripod or quadruped supporting cooking vessels above a burning fire.

Firewood—drawn also from mangrove charcoal, secondary jungle growth, or coconut husks—provided not just heat but also smokiness, contributing subtly but significantly to flavour.

These hearths were multifunctional spaces. Beyond cooking, they served as sites for drying ingredients, smoking meats, and preserving food. The slow-burning fire permitted techniques such as prolonged simmering, gentle boiling, and *salai* smoking—methods suited to the humid climate where rapid spoilage of food was a constant concern.

Clay Pots and Earthenware

Among the earliest and most enduring cooking vessels in the Malay world were the *periuk tanah* or *belanga* (clay pots). Archaeological evidence from sites across Southeast Asia indicates that earthenware pottery has been used in the region for several millennia.⁴ These vessels were particularly suited to boiling and simmering, methods central to Malay cooking traditions such as *hirupan* and *yup-yup* (soups), *gulai* (gravies or native curries), and *masak lemak* (coconut-milk dishes).

Clay pots distribute heat gradually and evenly, with the designs allowing complex spice pastes to cook slowly and release their aromas. This method was particularly important in dishes where ingredients such as lemongrass, galangal, turmeric and chilli required extended cooking to develop their full flavour profile. Even today, some Malayo-Indonesian dishes are considered superior when prepared with clay vessels or cooked over a certain timeframe, reflecting the enduring technological wisdom embedded in traditional cookware.

Bamboo as Cooking Vessel

Bamboo represented one of the most versatile cooking technologies in the tropical forests of the archipelago. Hollow bamboo tubes could function as portable cooking vessels, enabling food to be prepared directly over open fires. Dishes such as *lemang*—glutinous rice cooked with coconut milk inside bamboo lined with banana leaves—illustrate the sophisticated use of this material. Even meat can be cooked this bamboo way, as seen in the *ayam pansuh* using chicken pieces with herbs and spices.

The bamboo vessel performs several functions simultaneously: it protects the rice or other foodstuff mixture from direct flame, infuses subtle vegetal aromas, and creates a steaming environment within the tube. Such cooking techniques required detailed ecological knowledge, including which bamboo species and sizes were suitable, how to cut them properly, how long they could withstand heat, and how they affected flavour.

Stone Grinding, Pounding and Spice Preparations

Central to the preparation of Malay Archipelago cuisine is the grinding of spices into aromatic pastes. Traditionally this process was performed using stone implements such as the *batu lesung* (mortar and pestle) or the flat grinding stone known as *batu giling*.

These and related tools were indispensable in transforming raw ingredients—shallots, garlic, chillies, turmeric, *belacan* shrimp paste, and other aromatics—into the *bumbu* and *rempah-rempai* spice mixes or pastes that form the foundation of many dishes.

Grinding by hand does more than mechanically crush ingredients; the technique releases essential oils and natural chemicals that blends flavours in ways where today's cooks find, to their dismay, that modern electric appliances often fail to replicate.

The rhythmic yet dextrous hand motions of pounding or grinding also reflect the embodied nature of traditional cooking practices, where culinary skill was transmitted through tactile experience and observation.

Coconut Processing and the Production of Santan

Few ingredients are as central to Malay archipelagic cooking as the coconut. Its technological processing, however, required specialised tools. The *kukur kelapa*—a coconut grater mounted on a small wooden bench with a serrated metal blade—allowed cooks to efficiently shred coconut flesh. The grated coconut was then squeezed with water to produce *santan* (coconut milk), a foundational ingredient in countless dishes.

The extraction of *santan* represents a sophisticated understanding of plant processing. By adjusting the amount of water and the number of extractions, cooks could produce either thick coconut cream or lighter coconut milk for different culinary purposes. This versatility enabled the creation of various rich gravies, snacks and desserts, rice dishes, porridges, and festive foods.

Leaf Wrapping and Edible Craft

The use of leaves as cooking and packaging materials represents another remarkable technological adaptation. Banana leaves, pandan leaves, young coconut fronds, and many other types, were and are used to wrap, steam, or grill foods from simple snacks to seafood. Leaf wrapping not only protected food during cooking but also imparted aroma and instilled moisture.

Among the most culturally significant examples is the weaving of *ketupat*, a rice dumpling encased in intricately woven palm leaf pouches. The weaving itself constitutes a form of edible craft: the geometry of the weave determines the shape and even density of the rice during cooking.

When boiled, the rice expands to fill the *ketupat* pouch, forming a compact rice mass that can be easily sliced and served with dishes such as *rendang* spiced meats, or *satay* barbecued meat on sticks.

Other leaf-wrapped foods—such as *otak-otak* fish mash, *pulut panggang* and various *kuih* snack-cakes—demonstrate such techniques where the wrapping material forms an integral part of the cooking apparatus and taste profile.

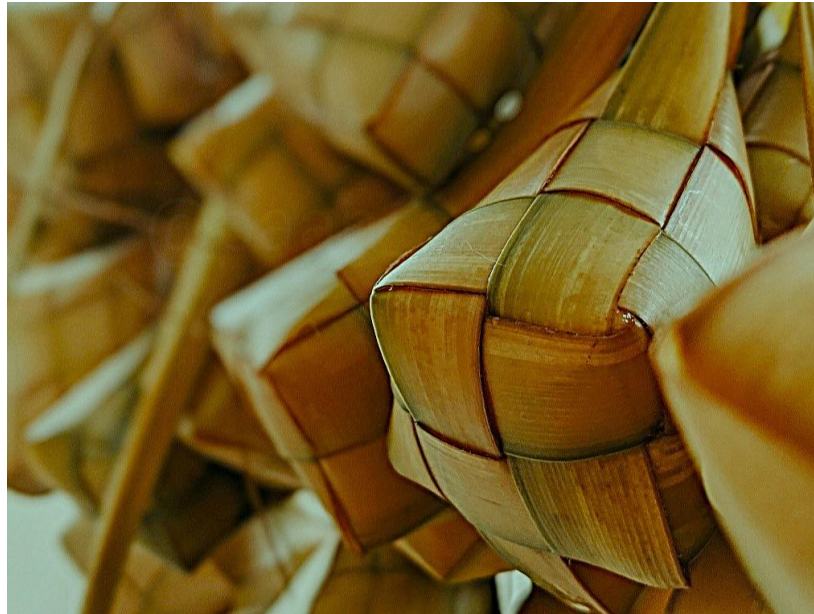


Fig. 5. *Ketupat* woven coconut leaf rice packets (photo by Atika Sulaiman)

Early Fermentation Practices

Fermentation represents another technological dimension of indigenous food preparation. Before refrigeration, fermentation provided a method of preservation while simultaneously creating new flavours. Products such as *belacan* (fermented shrimp paste), *tempoyak* (fermented durian fruit), and fermented fish sauces illustrate this process.⁷

These foods required careful management of temperature, implements, additives such as salt levels, and microbiologic environments. Their development reflects a long tradition of empirical knowledge regarding microbial transformation—what environmental historians or gastropologists might regard as an early form of “microbial domestication”.

Traditional Food Storage and Cooling Techniques

Before the availability of electricity and mechanical refrigeration, people across the Malay Archipelago developed practical and ingenious solutions to maintain freshness and preserve food in a tropical climate.

One method is the *terenang*, *geluk*, or *belanga rendam* system using traditional earthenware storage vessels made from fired clay, in which perishable food was placed inside the covered pot and partially submerged in cool flowing water—such as a shady stream, well or river edge. The surrounding water helped dissipate heat from the clay surface, creating a simple evaporative cooling effect that kept food fresh for longer periods in the humid equatorial environment. The semi-porous nature of clay further aided cooling by allowing slight evaporation through the vessel walls, functioning in effect as a rudimentary natural ‘refrigerator’.

Other storage practices relied on simpler environmental placement and architectural adaptation. In most traditional Malay houses, food was stored on elevated containers or structures such as the *para* (a raised or sometimes hanging rack in the kitchen) surrounded by open windows allowing air circulation that slowed spoilage while also protecting it from animals. Leaf wrappings—using banana, palas, coconut or *nipah* palm leaves—also helped protect foods while maintaining moisture balance.

In water-side settlements, fish may be stored in sturdy baskets or nets submerged in rivers or tidal waters, where the cooler temperature of moving water delayed decomposition. These techniques, together with preservation methods such as drying, salting, smoking, and fermentation, formed part of a broader system of environmental knowledge in which communities adapted food storage practices to the rhythms of climate, landscape and daily life in the tropics.

From Gentle Frying to 'the Way of the Wok'

While indigenous cooking methods relied more on boiling, simmering, steaming or roasting in leaves, 'frying' was also known and done through the thick-wall earthen *belanga* by at least three ways; simple dry toasting without oil—called *menyangai* as for nuts and certain spices, and for coconut *kerisik*—or to gently sauté ingredients in coconut oil or animal fats, or by allowing proteins and spice mixes to gently fry in their own released oils during long rendering processes (as for *rendang*)—a slower and deliberate heat transfer frying style preserved in the ancient linguistic roots of the Malay word *goreng* for frying.

However, stir-frying became more prominent with the introduction of the metal wok through external culinary adaption, usually attributed to Chinese influence. The wok, or *kuali* in Malay, a curved metal pan designed for high-heat cooking, enabled rapid frying techniques that differed from earlier cooking methods.

Over time, the wok became deeply integrated into Malayic kitchens, particularly for dishes such as fried wet noodles, vegetable stir-fries, and selected sambal sauce preparations. Its adoption illustrates the dynamic nature of culinary technology in the archipelago—local traditions were not static but easily adopted and absorbed external influences.

Ecology, Technology, and Everyday Life

Taken together, these cooking technologies reveal the deep interrelationship between environment, material culture, and culinary practice. The Malayic kitchen functioned as a microcosm of the surrounding ecosystem: organics like bamboo from forests, clay from riverbanks, leaves from myriad plants, coconuts from 'the tree of a thousand uses', and spices from garden plots all converged in the act of cooking.¹⁰

Gastropologists and environmental historians have emphasised the importance of, besides ingredients, the material intricacies and everyday technologies in shaping long-term cultural and culinary patterns. Fernand Braudel's concept of the *longue durée* highlights how everyday practices—as mundane as daily cooking methods—reflect deep environmental, technical and social continuities.

Similarly, Alfred W. Crosby's work on ecological exchange underscores how human societies adapt to and reshape biological environments over time. In the Malay World, the tools and techniques of cooking illustrate precisely such processes: they reflect not only what people ate but how they interacted with their environment to transform ecological resources into alimential sustenance.¹⁸

6. The Spice Routes, Maritime Trade, Foreign & Colonial Layering

The culinary complexity of the Malay Archipelago cannot be understood without situating it within the historic seaborne networks that connected maritime Southeast Asia to the wider Indian and Pacific Oceans; hence the region's moniker 'Nusantara'. For millennia, this archipelago has dominated a strategic position at the crossroads of global trade routes linking East Asia with South Asia and the Middle East, and eventually Europe.

These routes did not merely carry commodities including food ingredients; they also transmitted cultural ideas including culinary techniques. Within this networked world, the archipelago functioned not as a passive recipient but as an active intermediary—what might be described as a dynamic culinary broker between different food cultures.

The geographical structure of Island Southeast Asia—composed of over 20,000 islands connected by numerous straits, and seasonal monsoon winds—facilitated sustained maritime mobility. Monsoonal wind systems enabled predictable sailing patterns linking especially the *Laut Melayu* (South China Sea) with the Indian Ocean, allowing ships to move people, goods and knowledge across long distances. The resulting circulation created what historians have described as a maritime cultural milieu in which technologies, languages, religious beliefs and food traditions circulated continuously.

Archipelagic Networks and Spice Ecologies

Among the most valuable commodities circulating through these networks were spices. Cloves and nutmeg/mace—two of the most prized spices in pre-modern global commerce—originated in the eastern Malay Archipelago islands, particularly Ternate and Tidore for cloves, and the Banda islands for nutmeg, both part of the Moluccas region in present-day eastern Indonesia.

Their extraordinary value in global demand, at times akin to their weight in gold in European markets, drew traders from across Asia and later Europe into the maritime trade systems of Southeast Asia.

Hence, the Malay Archipelago was the very buckle of the Spice Route belt.

The spice trade was not merely an economic enterprise but also an ecological one. Spices circulated alongside other botanical resources such as pepper, ginger, turmeric, galangal, and aromatic leaves that formed the basis of regional culinary traditions. In the Malay Archipelago these ingredients became integral components of complex spice blends used in myriad *lauk-pauk* dishes of stews, broths and coconut-based gravies. Rather than isolating individual spices, regional cooking tended toward layered combinations in which aromatic, pungent and sweet elements were balanced.¹⁹

This flavour philosophy contributed to the characteristic multi-savoury complexity found across many Southeast Asian cuisines. Palm sugar, coconut milk, fermented seafood products and spice pastes interacted to produce flavour profiles that differed from the spice usage patterns of South Asia, Arabia or China.

Maritime Politics as Culinary Intermediaries

A look at two major historic maritime econo-imperial entities exemplify how political and commercial networks shaped culinary exchange: Srivijaya and Melaka.

From roughly the 7th to 13th centuries, the Srivijayan thalassocracy centred in Sumatra and covering the Malay Peninsula controlled key maritime choke points along the Straits of Melaka. This position enabled the polity to facilitate and regulate trade between the Indian Ocean and East Asia. Archaeological findings from pan-Malay sites such as Palembang in east Sumatra, Kedah on the straits' northern end of the Malay Peninsula and related settlements reveal artefacts, ceramics, spice traces and other trade goods circulating widely throughout the region.

These conducive trading environments also served as expeditious meeting points where merchants from different cultures were exposed to new food ingredients, recipes and practices.

Upon Srivijaya's decline, by the 14-15th centuries the port-city of Melaka replaced it as one of the most important entrepôts in the early modern Malay World. It was so famous and powerful as a trading empire that the seaway once called the Malay Straits now bears Melaka's name.

Indeed, by the 15-16th centuries, Melaka hosted diverse merchant communities from all across Asia—Arab, Chinese, Gujarati, Javanese, Tamil, and many others—each blending distinctive cultural and culinary traditions. Contemporary observers noted the cosmopolitan nature of the port, where markets contained foods and spices from across the known world.

Within such port cities, culinary interaction occurred not only through trade but through everyday co-existence and no less through intermarriage, permeating even kitchens that served royal banquets. Migrant merchants established their businesses, waited for the change of monsoon winds, and in the meantime married with local populations, creating intermixed cuisines that gradually became part of the regional repertoire.

These amalgamations did not displace existing food systems. Instead, they accumulated within the existing culinary framework, just like Chinese wok stir-frying did not displace native Malay *goreng* but instead expanded it beyond what the wok achieved in its place of origin.

Early Foodway Exchanges

Among the earliest influences to circulate into the archipelago were culinary ideas from South Asia. Trade between the Indian subcontinent and Southeast Asia dates back at least two to three millennia, accompanying the spread of religious ideas, writing systems and cultural forms. Within the culinary sphere, this exchange introduced new spice blends or techniques associated with curry preparations.

These spice systems were adapted with local ingredients and taste preferences. Coconut milk, for example, became a common base for curries in the Malay world, producing dishes such as *gulai* and *kuah kari* that differ from their South Asian counterparts. Cardamom, coriander, cumin, and tamarind (this originally from Africa) were incorporated into regional Malay pastes that had native archipelagic spices including gingers, cloves and nutmeg, producing distinctive flavour combinations rooted in local taste sensibilities.

Bread or *roti* traditions also travelled along these trade networks. Flatbreads derived from South Asian culinary traditions evolved into forms such as *roti canai* in Malaysia and Singapore, although some in Singapore prefer the Indian name *roti prata* or *paratha*, while others argue that there is a difference between the 'sibling' flatbreads. Although wheat was not native to tropical Southeast Asia, the local techniques associated with wheat flour kneading and griddle cooking were gradually incorporated into urban food cultures.

Chinese trading communities likewise contributed culinary techniques. Soy fermentation, for example, became integrated into Southeast Asian cooking through products such as *kicap* soy sauce, tofu and fermented bean pastes. These ingredients complemented existing fermentation traditions centred on fish and shrimp products, although it is noteworthy that *tempe* or *tempeh* fermented soy cakes were invented in Java in the Malay Archipelago and spread northwards.¹²

As mentioned before, Chinese gastronomy also introduced stir-frying methods using the wok, as well as expanding the range of noodle varieties made from rice, mung bean starch or wheat. Over time an array of *mee* or *mie* noodle types became another staple mainstay integrated into regional dishes in mind-boggling varieties, amalgamating different Malay spices, and herbs in every form from wet fried to dry savoury, from clear soupy to thick broth.

These culinary interactions illustrate how adapted techniques were incorporated into local foodways while the native qualities remained embedded within existing flavour systems. Rather than replacing earlier practices, they contributed additional layers to the culinary repertoire.

European Colonial Interventions

European arrival in Southeast Asia in the 16th century starting with the Portuguese in Melaka in 1509 added additional layers to the region's culinary history. Portuguese and Spanish traders were among the first Europeans to establish sustained contact with the archipelago following the Portuguese capture of Melaka in 1511. Their presence formed part of broader global exchanges linking Asia, specifically Southeast Asia, with Europe, and the Americas.²⁰

One of the most consequential introductions from these exchanges was the hot chilli pepper. Originally domesticated in the Americas, chilli spread rapidly across Asia following its introduction by the Iberian traders.

Within Southeast Asia the chilli quickly became integrated into local cuisines, overlaying older and indigenous ways of creating the piquant *pedas* hot spicy taste. Prior to the arrival of chilli, pungency in Southeast Asian cuisines had been achieved through regional ingredients such as long pepper, black pepper, gingers, galangal, and aromatic roots.

The introduction of chilli from the other side of the world provided an additional—and eventually dominant—source of taste heat that complemented these earlier ingredients. Its widespread adoption due to ease of cultivation and handling significantly expanded the spectrum of heat or pungency available to regional cooking.

Eventually it formed the basis of piquancy condiments such as *sambal* sauces and added to almost every local dish. Today there are even pungent Southeast Asian-developed chilli cultivars or landraces, known as *lada padi* or *cili burung* in Malaysia, *cabai rawit* in Indonesia and *siling labuyo* in the Philippines, *Capsicum frutescens*.

Other European influences were more gradual. Dutch colonial presence in the Indonesia contributed baking traditions and layered cakes such as *lapis legit*, *nastar* and *kastengel* that combined European baking techniques with local ingredients such as coconut and spices.

Meanwhile British colonial administration in Malaya encouraged the expansion of tea cultivation and consumption, as well as wider availability of wheat flour through global trade networks.

The increasing presence of wheat products facilitated the growing popularity of breads and pastries in urban centres. Flatbreads such as *roti canai* became hugely popular across the Malay Peninsula, illustrating how imported ingredients could be integrated into local food cultures without displacing local rice as the primary staple.

Layering Without Displacement

Taken together, these exchanges illustrate a central characteristic of Malay Archipelago food history: adoption without erasure. New ingredients and techniques entered the culinary repertoire through trade, migration, and colonial contact, yet they were rarely adopted wholesale. Instead, they were selectively incorporated into existing cooking frameworks and flavour profiles.

This process produced what might be described as a layered culinary tapestry. Indigenous ingredients such as coconut, pandan, turmeric, and fermented seafood remained foundational, while external influences contributed additional techniques and ingredients.

The resulting cuisines reflect centuries of interaction within maritime trade networks while retaining strong ecological and cultural continuity with earlier food traditions.

In this sense, the Malay Archipelago should not be thought of as a peripheral recipient of external culinary influence. Rather, it functioned as a dynamic centre and active purveyor within the historical spice routes—a realm where ingredients, techniques and ideas converged, circulated and acquired new meanings within local food cultures.

7. Urbanisation, Migration and Hybridisation

Throughout the 19th century, the culinary landscape of the Malay Archipelago entered another phase shaped by colonial expansion, labour migration and accelerating urbanisation.

The growth of port cities and plantation economies created dense environments in which diverse communities lived and worked in close proximity. Within these urban settings, food became both a practical necessity and a medium through which cultural interaction, adaptation and negotiation occurred. In this sense, colonial port cities functioned as laboratories of culinary hybridisation, where older regional food traditions encountered new populations, ingredients and economic structures.¹

Port Cities as Culinary Laboratories

The expansion of colonial power and trade networks in the 17th to 19th centuries intensified the importance of Southeast Asian port cities such as Melaka, Penang, Singapore, Batavia (now Jakarta) and Manila. These cities attracted merchants, labourers and migrants from across Asia, including Chinese, Indian, Arab, and European communities. Their coexistence within compact urban districts, eased by the gentle nature of native Malayic peoples, created environments in which culinary exchange occurred on an everyday basis through markets, street stalls and domestic kitchens.⁵

Local markets and food stalls became particularly important points of interaction. Fresh produce, spices, seafood and meats, plus prepared foods circulated through urban marketplaces where communities encountered one another's ingredients and cooking styles. Such spaces encouraged experimentation and adaptation, allowing cooks to experiment and integrate novel ingredients into established recipes while maintaining the flavour structures associated with their own cuisines.

Baba–Nyonya Cuisine and Malay Cultural Synthesis

One of the most well-known examples of this urban culinary synthesis is the Baba–Nyonya or Peranakan cuisine. Emerging within mixed Chinese communities that had settled in the Malay World and inter-married with Malayan natives, Peranakan food reflects a distinctive blending of Chinese household cooking with Malay ingredients, herbs and spice pastes, adapting recipes taken directly from the Malay food repertoire.¹⁴

Nyonya Peranakan cooks relished the Malay *rempah* system of spice preparation while maintaining certain Chinese culinary techniques such as braising and hot stir-frying. Dishes such as *ayam buah keluak*, *laksa lemak*, and Baba–Nyonya adaptations of Malay *kuih* snacks and cakes illustrate how local herbs, coconut milk and fermented foodstuff were combined with Chinese flavour preferences and cooking styles.

Importantly, this synthesis did not represent the replacement of one culinary system over another. Rather, it reflects a layered accumulation of Malayic ingredients and recipes with Chinese tastes over generations of intercultural marriage. Baba–Nyonya cuisine therefore stands as a harmonious inter-racial example of how urban interaction facilitated the creation of hybrid culinary traditions grounded in local ecological resources.

Labour Migration and Everyday Food Culture

The colonial takeover of mining, the development of commodity plantation, and expanding economies further intensified culinary exchange. From the mid-19th century onward, British colonial administration in the Malay States encouraged large-scale migration of labourers to work in tin mines and rubber plantations across Malaya. Chinese workers formed the majority of the mining labour force, while South Asian migrants, particularly Tamils from southern India, were recruited to work on plantations and railway construction.

These migrant communities brought with them their own food traditions, ingredients and cooking methods. Over time, these traditions interacted with existing Malay food cultures within shared urban spaces such as markets, roadside eateries or food courts, and intermarriage. The diffusion of South Asian flatbread roti traditions into the Malay Peninsula provides one example of this process.

Flatbreads prepared on griddles by Indian Muslim cooks gradually became popular among local populations, eventually evolving into dishes such as *roti canai*.²¹ Although wheat is not native to tropical Southeast Asia, increasing global trade made wheat flour more accessible in colonial urban settings. Over time, wheat-based foods gained a stable place within everyday urban diets while rice still remained the dominant staple.

Another illustration of such layered traditions is *yee sang*, a festive dish associated with Chinese New Year celebrations in Malaysia and Singapore. The dish combines shredded vegetables, raw fish and sweet sauces tossed up together in a communal ritual known as *lo hei*. Although rooted in a Chinese background the contemporary form of *yee sang*, which was not found in the Chinese homeland, reflects local innovation within the multi-cultural milieu of Southeast Asia.²²

Gerai & Warung, Hawkers & Stalls - the Street Food Economy

Urbanisation also expanded the way food was availed and distributed. Since olden times, the Malay World already had its *gerai* or little stalls selling ready foods whether prepared or cooked on-the-spot with rudimentary seating, if at all, and *warong* or *warung* as simple early versions of seated eateries, where these were all small-scale and somewhat ephemeral.

The colonial era brought an explosion of ubiquitous street hawkers and food stalls that reflected both the needs of rapidly growing urban populations and growing economic opportunity. Hawkers often operated from mobile carts or simple pop-up roadside structures, selling prepared foods to workers who lacked the time or facilities to cook.

Although these stalls represented an extension of the earlier village-based *gerai* and *warung* food establishments, in busy urban environments they transformed into a dynamic street food economy. Numerous hawkers of all races served economical dishes prepared quickly and consumed communally in public spaces.

Over time, many dishes now associated with national cuisines—such as snack foods, fried or soupy noodles, and various rice dishes, with Malaysia's *nasi lemak* being a prime example—became closely linked to this hawker culture.²³ This general street food scenario followed a largely similar path, with local variations, throughout Southeast Asia.

Street food environments also provided fertile ground for culinary innovation. Vendors frequently adapted recipes to suit the tastes of diverse customers, adjusting spice levels, ingredients, and preparation techniques.

The street food stalls in turn coalesced into congregations of hawkers and stalls that eventually organised into 'food courts' with collective seating where one could have food from any of the surrounding stalls. In these ways, the hawker street food economy functioned as a mechanism through which cuisine traditions evolved in response to evolving urban demographics.

Halal Boundaries and Culinary Negotiation

Within these plural urban environments, food also became a vehicle where religious and cultural boundaries were negotiated. For Muslim communities, adherence to halal dietary requirements shaped patterns of consumption and food preparation.

As different communities interacted within shared marketplaces and eating spaces, cooks and vendors developed practices that allowed food to circulate across cultural lines while respecting religious restrictions.

Indian Muslim cooks, for example, played a particularly important role in bridging culinary traditions. Operating eateries that served mixed South Asian and Malay dishes prepared according to halal standards, they facilitated the diffusion of foods such as *roti*, curries, and tea-based beverages as in the ever-popular Malaysian 'national drink', *teh tarik* ("pulled tea") into a wider food culture.²¹

These dynamics demonstrate how food practices in multicultural urban environments were shaped not only by taste and availability but also by religious observance and social accommodation. Gastronomic traditions thus evolved through processes of negotiation that balanced cultural difference with shared urban life and eventually a food-culture lifestyle.



Fig. 6. *Teh tarik* or "pulled tea" drink, with banana leaf wrapped rice meal packs at a Malaysian food court (photo by author)

Foodways and the Socio-Culinary Landscape of Today

By the early 20th century, the major port cities of the Malay Archipelago had developed complex and vibrant food cultures reflecting centuries of innovation and interaction. Street stalls, coffee shops, and neighbourhood markets where *medan selera* or food courts eventually became a mainstay, all formed a modern culinary infrastructure through which diverse communities encountered one another's foods.

These environments produced new hybrid dishes while overlaying and sustaining older traditions rooted in the ecological foundations of the region. Rice, coconut milk, spices, herbs and fermented foods all remained central ingredients, even as wheat products, non-rice noodles, and new cooking techniques became increasingly integrated.

Urbanisation and modernity therefore did not displace earlier culinary foundations. Instead, it created a blended food culture in which multiple traditions interacted and coexisted within shared spaces. In this sense, the foodscape of the Malay Archipelago reflects the *longue durée* social history of layered parts: a dynamic food environment gained from long migratory and trade expansion, and by diverse food cultures' daily negotiation.

It is a food palimpsest at its best.

8. Culinary Identity, Nationalism, and the Politics of Heritage

If earlier sections of this study have shown that the food of the Malay Archipelago emerged from a long confluence of local ecology, cross-migration and maritime exchange, the rise of modern nationalism introduced a new interpretive layer upon this historical continuum. In the 20th and 21st centuries, food has increasingly become a site where cultural memory, political identity, and heritage discourse intersect. Culinary traditions that developed gradually across shared tropical ecosystems and centuries of mobility are today frequently mobilised as markers of national authenticity, cultural sovereignty, and soft power.

Yet in this sense, modern culinary identity does not replace earlier historical layers but overlays and even constricts them. As Benedict Anderson famously observed, nations are “imagined communities,” constructed through shared symbols, stories and practices.²⁴

In Southeast Asia, cuisine has become one such symbolic medium through which nations articulate cultural coherence while drawing upon a far older pan-archipelagic heritage.

After all, a modern nation-state requires symbols through which collective identity can be expressed and embraced. Flags, monuments, history and various narratives serve this purpose, but so too do foods. Culinary traditions provide tangible, everyday expressions of belonging, linking citizens to agricultural systems, and inherited cultural practices and perceived nation-scapes.

Food as a Construct of National Identity Despite Biospheric Continuity

Across the Malay Archipelago, governments and cultural institutions have increasingly framed particular dishes as representative of national cuisine. Cultural narratives, food festivals, tourism campaigns, people’s movements and state-sponsored culinary initiatives all contribute to this process of cuisine codification. Foods once associated with particular regions, ethnic communities, or seasonal rituals become elevated as emblems of the nation as a whole. Analyses by Arjun Appadurai’s and others on national cuisine highlight how such codification can occur through official and social media, cookbooks, and public discourse, transforming culinary practices into recognisable national forms.¹⁵

Yet this process of national culinary consolidation occurs within a region historically characterised by ecological continuity and human mobility broken by colonial constructs. For centuries, communities across Sumatra, the Malay Peninsula, Borneo, Java, and the wider island world cultivated similar crops, harvested comparable marine resources, and utilised overlapping repertoires of spices and herbs. Coconut palms, rice paddies, fermented seafood condiments, and aromatic roots formed shared foundational vocabulary of food traditions across the archipelago.

Beyond the biosphere, migration, trade, and intermarriage further reinforced these shared culinary systems. Maritime trading networks linking the South China Sea and Indian Ocean enabled continuous circulation of people and ideas, while ethno-religious networks, mercantile diasporas, and kinship ties facilitated the diffusion of recipes and cooking techniques. In such contexts, culinary practices were rarely confined to discrete political territories. Instead, they evolved within a broader cultural and ecological zone shaped by common climates, crops, and maritime connections.

This shared biospheric environment helps explain why many dishes appear across multiple national cuisines with recognisably similar structures. The spiced meat dish, *rendang*, for example, exists in numerous regional forms across West Sumatra, the Malay Peninsula and parts of Borneo, including Brunei. *Satay* or *saté* meat barbecued on sticks likewise appears in diverse taste variations across Indonesia, Malaysia and beyond. Yet in Malay *saté* can be just a food description through the syllabic contraction of the words *salai di tépak* (*sa+té* – the accent over *é* added as a pronunciation guide).

Nonetheless such foods reflect the historical mobility of communities within the archipelago rather than the culinary traditions of a single nation-state. Khir Johari’s extensive documentation of Malay foodways demonstrates how ingredients, techniques and flavour logics circulate widely across what can be described as the broader gastronomic landscape of the Nusantara.¹⁰

Culinary Heritage and Cultural Diplomacy

In any case, the elevation of any dish or drink as national symbols sometimes gives rise to public debates about their origins. Periodic discussions between neighbouring countries regarding *rendang*, *satay*, *soto* or other regional dishes illustrate the tensions that can emerge when historically shared traditions encounter constricted modern national boundaries. These debates are rarely confined to

gastronomy alone; they often reflect deeper questions about historical narrative, cultural legitimacy and identity.

From a historical and factual perspective, however, attributing singular origins to many archipelagic dishes can be fairly difficult. Even if a dish had a discernible origin, culinary traditions evolve and spread gradually with adaptation of specific local ingredients, tastes and social milieus. The same dish may therefore develop multiple regional expressions while maintaining a recognisable core structure and name. Malaysia's *soto* and *lontong* dishes look different from Indonesia's, particularly Javanese, versions of similar name (let alone differences in taste); Indonesian Padang *rendang* differs in spice balance and texture from the Malaysian Negeri Sembilan type even though they both share Sumatran Minang roots, while Perak state's unique *rendang tok* differs further in higher shelf-life longevity through its cooking method.

In this sense, shared culinary heritage reflects centuries of interaction *and* individual evolution rather than recent cultural borrowing. Scholars examining Malay food culture emphasise that such traditions are dynamic systems rooted in adaptation and sustainability rather than fixed origin narratives. On the contrary, a time-honoured and well-documented Malay dish like *nasi lemak*, the famous Malaysian coconut milk rice, will remain so even if, say, a Singapore restaurateur attempts to rename it, with superficial variation, as "Nanyang coconut rice" to attract international interest to his place.

These dynamics are further intensified by the growing global interest in culinary heritage. Now governments increasingly recognise cuisine as an important component of cultural diplomacy and tourism promotion. Culinary festivals, heritage restaurants, and gastronomic trails are now common features of national branding strategies across Southeast Asia. Such initiatives present food not only as nourishment but as a cultural asset capable of conveying national identity and historical breadth.⁷ It's clear, food is international soft power.

Multinational frameworks such as UNESCO's *Convention for the Safeguarding of the Intangible Cultural Heritage* have also encouraged states to document and promote traditional food practices.¹⁶ Through this framework, culinary knowledge—ranging from agricultural techniques to festive dishes—may be recognised as part of humanity's shared cultural heritage. While such recognition can support preservation efforts, it encourages the articulation of food traditions within formal national narratives. This can inadvertently add fire to the fuel of 'food wars'.

The process of heritage designation therefore introduces new questions regarding authenticity and representation. Culinary practices that once existed in fluid regional forms may be codified into standardised versions suitable for official documentation or international presentation. While this codification can safeguard knowledge, it may also simplify the diversity and local variation that characterise living food traditions.

Food has indeed emerged as an instrument of soft power within international cultural diplomacy. Nations increasingly use cuisine to project cultural identity abroad, promoting distinctive dishes through embassies, culinary festivals and tourism promotions. Culinary tourism has grown rapidly in Southeast Asia, with cities across the region positioning themselves as food destinations, including vying for gastronomic titles and top-ten lists for just single dishes. Even neighbouring cities such as Malaysia's Ipoh, Perak and George Town, Penang rival each other for foodie recognition, let alone nations. Hawker centres, food courts, night markets, and heritage or upmarket eateries are presented not only as places to eat but as cultural landscapes embodying the diversity and historical depth of regional societies.

At the same time, global circulation of regional cuisines through migration and diaspora communities adds further layers to these discussions.²⁵ When dishes such as *rendang* or *satay* appear in restaurants in London, New York or Dubai, they can carry multiple meanings simultaneously: as expressions of cultural memory, markers of identity, and participation in global culinary exchange.

As Richard Wilk notes, globalisation often amplifies rather than erases local culinary distinctiveness. It can amplify 'food ownership' arguments too.²⁶

RESULTING DISCUSSION AND CONCLUSION

Shared Traditional Past, Shared Table Partners

Yet beneath these debates, a deeper continuity simmers. The ecological foundations that shaped archipelagic cuisines — rice cultivation, coconut agriculture, spice horticulture plus meats and maritime fisheries within the same tropical milieu — remain transnational realities that transcend modern borders. The same archipelagic ecosystems, monsoon cycles and agricultural landscapes continue to sustain culinary traditions across Southeast Asia today, as they have always been when cooking and cuisines had broad similarities just as they had local variations.

Recognising this shared ecological and historical foundation does not diminish the cultural significance of national cuisines. Rather, it situates them within a broader regional history shaped by centuries of mobility, interaction, and adaptation. Culinary identity in the Malay Archipelago thus reflects both national narratives plus a broader and deeper archipelagic heritage.

In this sense, the cuisines of Southeast Asia reveal a paradox. The dishes most passionately defended as national treasures are often those most profoundly shaped by transregional exchange. Rather than undermining authenticity, this layered history actually enriches it if given such chance to be recognised. Authenticity in archipelagic cuisine lies not in purity or fixed origin, but in the sedimentary foodways of time — an accumulation of ecological knowledge, maritime exchange, cultural encounter, and even continual reinvention.

The food traditions of the Malay Archipelago therefore remain what they have long been: products of a shared biosphere and a connected maritime world. Their histories extend beyond the borders of modern states, even as they continue to serve as powerful symbols within them.

Recognising all these will engender culinary maturity in enjoyment instead of endless argument.

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