

REGIONAL REPORT: ASIA PACIFIC

GLOBAL FOOD SECURITY INDEX 2019

Supported by



Asia Pacific

Global Food Security Index 2019

Food security in the Asia Pacific

The Asia Pacific region is the largest and one of the most diverse in the world, with significant variations in climate, levels of development and urban/rural population distribution. It is home to 60% of the world's population, including the two most populous countries in the world, China and India. It also includes the sparsely populated regions of Central and North Asia. The variations across the region also result in differences in agricultural production capacity, making some countries more vulnerable to food security risks than others. Although emerging economies are growing rapidly, the gap between developed and developing countries remains wide. The region is also increasingly under threat from the impacts of natural disasters and climate change.

Measuring food security: The Global Food Security Index

How food secure are the countries of the Asia Pacific region? To answer this question, The Economist Intelligence Unit, supported by Corteva Agriscience, conducts an annual benchmarking assessment called The Global Food Security Index (GFSI). The 2019 GFSI marks the eighth edition of this study and considers three core issues of food security: affordability, availability and quality and safety. The index also explores the risk to food security as a result of exposure to climate change and other natural resources challenges. This report presents the key findings for the 23 countries in the Asia Pacific region included in the index.

Regional performance

Average regional scores		Score/100
1	North America	78.5
2	Europe	75.8
3	Middle East and North Africa	64.8
4	Asia Pacific	64.2
5	Central and South America	61.7
6	Sub-Saharan Africa	47.9

Top 5 ranked countries in region

	Rank/113	
1	Singapore	1
2	Australia	12
3	New Zealand	19
4	Japan	=21
5	Malaysia	28

Lowest 5 ranked countries in region

	Rank/113	
23	Tajikistan	93
22	Laos	92
21	Cambodia	90
20	Bangladesh	83
19	Nepal	79

Regional statistics

GDP per capita (PPP)

Highest	Singapore	US\$101,347
Lowest	Tajikistan	US\$2,810

Total regional population

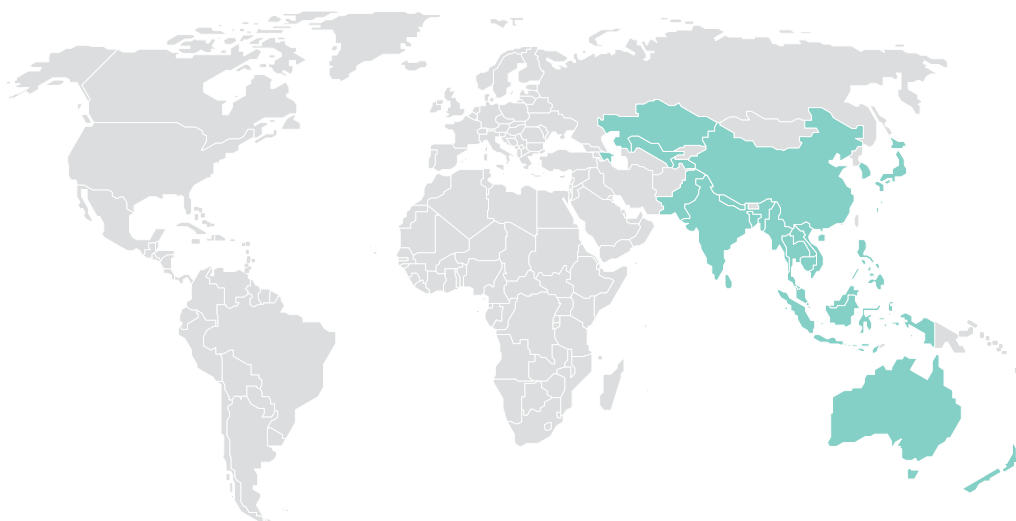
Highest	China	1.4bn
Lowest	New Zealand	4.9m

Prevalence of undernourishment

Highest	Pakistan	20%
Lowest	Australia	2%

Prevalence of obesity

Highest	New Zealand	30%
Lowest	Vietnam	1%



Overview of findings

There is significant disparity in food security across the region. It is home to the top performer in the index, Singapore, and food security is generally high in the other developed nations of the region: Australia, New Zealand and Japan. However, much of the region is dominated by emerging economies that score below average in the index, with lower levels of economic development and lack of dietary diversity as common factors. Government support in the form of safety nets, financing and subsidies for agricultural production provides a strong foundation for affordability and availability of food, though high levels of corruption in a number of countries in Asia limit the effectiveness of these programmes. The quality of the food supply in some countries suffers from a lack of dietary diversity as non-starchy food sources are either less available or less in demand.

As the agricultural sector has grown and contributes a larger share of GDP, this growth has generally not been matched with proportionate increases in research and development (R&D) or investment in the sector. Government efforts to manage climate risks to the sector are also lacking. Developing countries in Asia are the hardest hit by natural disasters, accounting for more than half of the world's disaster fatalities each year, and the region is vulnerable to rises in sea level and flooding, which puts the food supply at risk.¹ While high-income countries generally do better in coping with climate risks, the recent wildfires in Australia are a clear indicator that current measures may not be adequate to address these threats.

Asia Pacific: Overall rankings

Rank		Score/ 100
1	Singapore	87.4
2	Australia	81.4
3	New Zealand	78.8
4	Japan	76.5
5	Malaysia	73.8
6	South Korea	73.6
7	China	71.0
8	Kazakhstan	67.3
9	Thailand	65.1
10	Azerbaijan	64.8
11	Vietnam	64.6
12	Indonesia	62.6
13	Philippines	61.0
14	Sri Lanka	60.8
15	Uzbekistan	59.0
16	India	58.9
17	Myanmar	57.0
18	Pakistan	56.8
19	Nepal	56.4
20	Bangladesh	53.2
21	Cambodia	49.4
22	Laos	49.1
23	Tajikistan	49.0

Key regional findings:

Key strengths

- Strong rail networks and irrigation infrastructure facilitate availability of food across the region.
- Government support provides a strong foundation for food availability through food safety nets and access to financing.
- Agricultural production has stabilised over time due to government support, enabling countries to better forecast food availability.
- Access to electricity, which supports the ability to safely store food, has widened in the region.

Key gaps

- Public spending on agricultural R&D is declining relative to the sector's GDP.
- Corruption levels in developing countries remain high, affecting food availability through poor management of resources.
- The quality of food suffers from a lack of diet diversity and availability of micronutrients and quality protein in the food supply.
- Climate-related and natural resource risks are high due to the region's vulnerability to flooding, sea level rise and an increase in temperatures and drought susceptibility.
- Despite vulnerability to climate risks, many countries in the region lag behind on efforts to adapt their agricultural practices to these changes.

Affordability

The first category of the GFSI measures food affordability by assessing factors including the ability of consumers to purchase food, their vulnerability to price shocks and the presence of programmes and policies to support consumers when shocks occur. While high-income countries are able to maintain low food prices, government support plays a huge role in improving food affordability in developing countries. Although the region has high scores for food affordability, there is still room for improvement to expand and strengthen food safety nets and access to financing for farmers, particularly for low and lower-middle income countries.

Asia Pacific: Affordability rankings

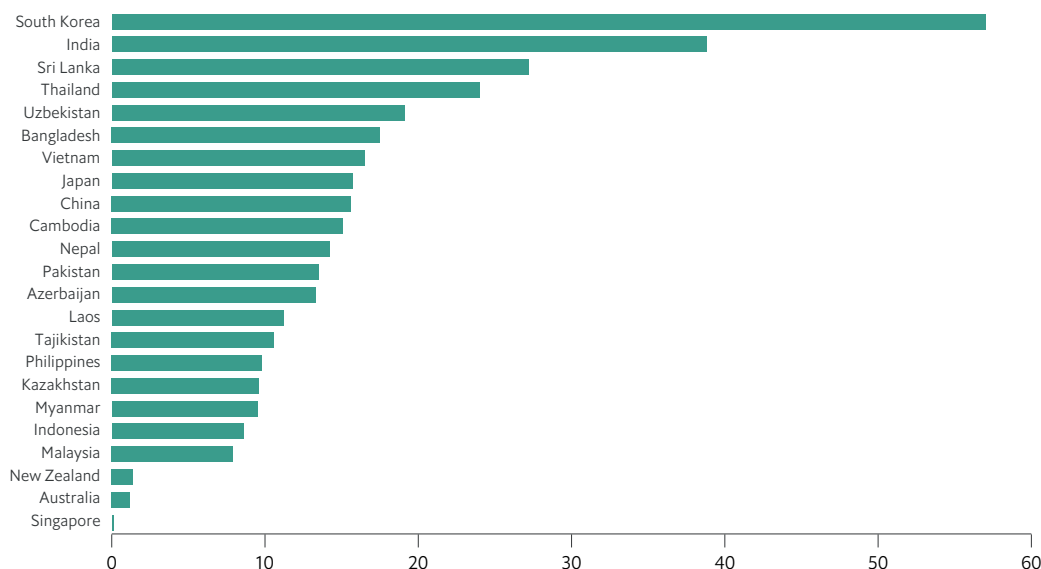
These are the rankings for all countries in the region for the Affordability category.

Rank		Score/100
1	Singapore	95.4
2	Australia	86.6
3	New Zealand	84.6
4	Japan	82.4
5	Malaysia	81.7
6	Kazakhstan	77.5
7	Thailand	77.1
8	South Korea	75.8
9	Azerbaijan	75.3
10	Vietnam	75.1
11	China	74.8
12	Indonesia	70.4
13	Philippines	68.9
14	Uzbekistan	65.6
15	Sri Lanka	65.0
16	India	64.2
17	Pakistan	63.2
18	Bangladesh	60.4
19	Myanmar	59.1
20	Tajikistan	58.8
21	Nepal	58.5
22	Cambodia	56.7
23	Laos	55.5

Key regional findings:

- **Food safety nets are a key factor in increasing food affordability in developing countries.** Apart from a handful of countries such as Tajikistan and Sri Lanka, most countries in the region have food safety nets with wide coverage. These safety nets play a vital role in ensuring food security for vulnerable households. India runs the world's largest food safety net programme, with coverage of around 60m families below the poverty line.²
- **Wealthy nations maintain food affordability through comparatively low tariffs.** Many high-income countries – Singapore, Australia and New Zealand – which do well in the area of affordability are also the countries with the lowest agricultural import tariffs. Singapore, the most food-secure country, allows more than 99% of all imports to enter duty-free. It does not impose tariffs on agricultural products entering the country except tobacco and alcoholic beverages.³ While South Korea has low agricultural tariffs for most goods, the domestic rice production industry is heavily protected by tariffs resulting in high overall average tariffs. Similarly, countries such as India have higher tariff rates to protect domestic agricultural production.⁴
- **Each country offers at least a limited multilateral or government financing programme to farmers.** The region is ranked third globally for the availability of financing to farmers, after North America and Europe. At least eight countries have access to deep farmer financing. Access to financing also improved in a few countries, including Laos, where the US Agency for International Development (USAID) announced a five-year project that will support farming microenterprises.⁵

Average agricultural import tariffs in Asia Pacific for most favoured nations (%)



Source: World Trade Organisation (WTO)

Availability

A second dimension of the GFSI measures food availability through assessing factors including the sufficiency of the national food supply, risk of supply disruption, capacity to disseminate food and research efforts to expand agricultural output. Strong agricultural infrastructure, steady food production and high growth rates are key factors for food availability in the region. While rapid urbanisation is a concern, the high growth rates of emerging economies help them absorb the stresses of urban growth while still providing food security. Food availability is limited, however, due to high levels of corruption. Food availability in the region can be strengthened through increased investment in agricultural R&D, improved food transportation infrastructure for low and lower middle income countries and ensuring supply chains and food safety nets are not disrupted by instability and corruption.

Asia Pacific: Availability rankings

These are the rankings for all countries in the region for the Availability category.

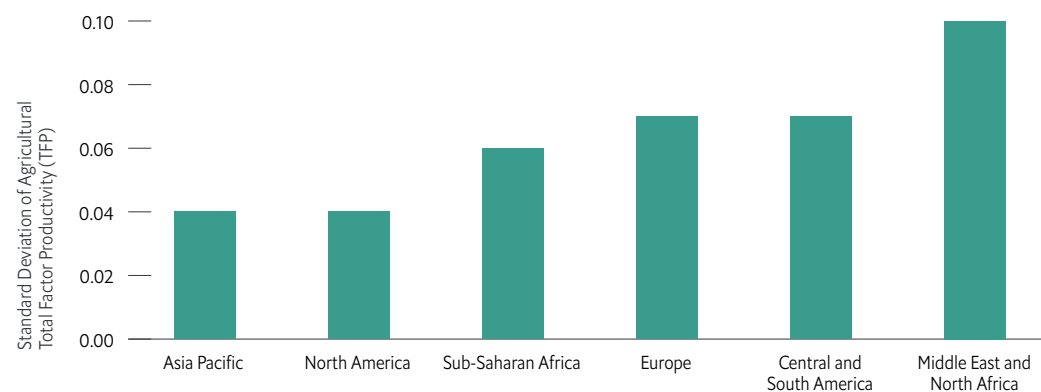
Rank		Score/ 100
1	Singapore	83.0
2	Australia	77.1
3	New Zealand	75.5
4	South Korea	71.2
5	Japan	71.0
6	Malaysia	67.7
7	China	66.9
8	Indonesia	61.3
9	Sri Lanka	60.0
10	Vietnam	59.7
11	Azerbaijan	59.2
12	Thailand	58.7
13	India	58.4
=14	Kazakhstan	57.7
=14	Philippines	57.7
16	Myanmar	57.2
17	Pakistan	55.7
18	Nepal	55.4
19	Uzbekistan	55.1
20	Bangladesh	54.8
21	Cambodia	48.1
22	Laos	47.6
23	Tajikistan	41.1

Key regional findings:

- **Agricultural production has steadied over time in many countries due to government efforts.** The region ranked second globally in terms of steady agricultural production, following closely behind North America. For the period 2012-16, Bangladesh and China had the least volatile production. Reports indicate that through steady expansion of agricultural production, such as soybean production, China has been able to reduce dependency on imports and improve farmer incomes simultaneously.⁶
- **Strong rail and irrigation infrastructure provide a foundation for food availability.** Strong rail networks in Asian countries including China and Japan are a key enabler of food availability as agricultural produce is well-suited for rail transport. This is also the highest-ranking region for irrigation infrastructure, with agricultural economies like Bangladesh and Pakistan featuring among the top performers.
- **Corruption threatens food security in a number of countries in South Asia, Southeast Asia and Central Asia, especially for the poor.** Corruption interferes with the ability of food safety nets to function, preventing support from reaching the intended beneficiaries.
- **High GDP growth rates of emerging economies help absorb the stresses of urban growth on food security.** The region's developing countries, such as Myanmar and Bangladesh, are growing faster than their rate of urbanisation, meaning they have greater capacity to tackle the pressures of higher concentrations of urban populations. Higher GDP allows countries to offset a shrinking rural population through measures including investments in farm productivity and increases in food imports.

Volatility of agricultural production

(2006–2010)



Sharp fluctuations in domestic agricultural productivity can create difficulty in predicting and planning for a consistent food supply. Sudden increases in supply can lead to unplanned price drops, reducing incomes for farmers, while decreased availability can threaten domestic food availability. The GFSI measures production volatility through examining changes in total factor productivity over a five year period. Source: United States Department of Agriculture (USDA) Economic Research Service

Quality and safety

This final category of the GFSI measures the variety and nutritional quality of the average diet, as well as food safety. Food diversification is a challenge in many Asian countries where diets are predominantly based on rice, which is low cost and easily accessible, but does not provide the full array of necessary nutrients for a balanced diet. Across the Asia Pacific region, governments can invest in programs and policies to support diet diversification, through nutritional education and encouraging increased consumption of non-starchy food sources. The region has already invested in improvements in access to electricity, which not only enhances the ability of households to store food safely, but also for people to buy and store perishable, but nutritious food items such as fruits and vegetables.

Asia Pacific: Quality and safety rankings

These are the rankings for all countries in the region for the Quality and safety category.

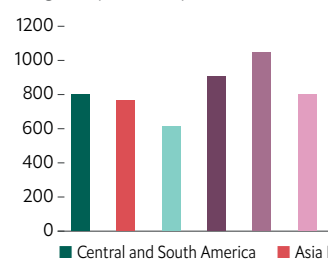
Rank	Score/100
1	Australia 79.9
2	Singapore 79.4
3	Japan 76.7
4	South Korea 74.9
5	New Zealand 73.5
6	China 72.6
7	Malaysia 70.6
8	Kazakhstan 68.3
9	Azerbaijan 54.0
10	Nepal 53.7
11	Uzbekistan 53.4
12	Thailand 52.6
13	Sri Lanka 52.4
14	Vietnam 51.7
15	Myanmar 51.3
16	Philippines 50.3
17	Indonesia 47.1
18	India 47.0
19	Tajikistan 46.6
20	Pakistan 43.6
21	Laos 37.4
22	Cambodia 34.6
23	Bangladesh 30.6

Key regional findings:

- Food diversification is an issue in many Asian countries.** The Asia Pacific region fares poorly in terms of dietary diversity, ranking fifth out of six regions. Bangladesh has the lowest levels of dietary diversity in the index, with 80% of calories coming from starchy sources. Diets in many Asian countries are largely rice-based with a low share of non-starchy foods, signifying a lower diversity of food groups in the diet. Access to diversified diets is often limited by financial constraints, as starchy foods are typically also the least costly.
- Food supply in South Asia and Southeast Asia is deficient in micronutrients.** The high cost of foods rich in micronutrients, such as fruits and vegetables, can be a barrier for poor households. Vitamin A deficiency is a particular problem, with less than 300 mcg RAE/day (recommended intake: 900 mcg RAE for men and 700 mcg RAE for women) available to the average person in Bangladesh and Cambodia. Diets in many Asian countries are also deficient in iron, and South Asia in particular has a high prevalence of anaemia. Anaemia disproportionately affects women, and around one-third of all anaemia-related maternal deaths globally occur in South Asian countries.⁷ Moreover, the dietary availability of zinc is the lowest in the region, particularly in Pakistan and Tajikistan.
- A further nutrient gap results from insufficient quality protein in South Asian and Southeast Asian diets.** Protein is important for nutrition, but not all protein sources carry equal value. Humans depend on protein sources to provide nine different essential amino acids; individual protein sources provide some, but not all nine of these amino acids. Protein diversity and quality matter, not just protein quantity. While the overall quantity of protein consumption has increased globally, the diversity and quality of protein consumption in the Asia Pacific region falls behind. Diversity of diets plays a major role in ensuring that people have access to the full suite of essential amino acids in their food sources.
- The region saw the widest expansion of access to electricity, which supports the ability to store food safely.** Countries with the largest improvements were Myanmar, Cambodia and Bangladesh, each recording an increase of 10 percentage points in the proportion of the population with access to electricity in the past year, largely due to government support. Bangladesh is making rapid progress towards achieving its Sustainable Development Goal of ensuring access to electricity for all poor households by 2021, well ahead of the 2025 target. By 2019, 92.2% of such households had electricity, up from 55.26% in 2010.⁸

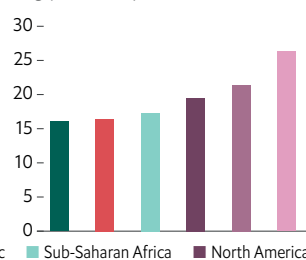
Dietary availability of: Vitamin A

(mcg RAE/person/day)



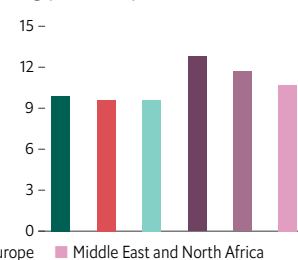
Iron

(mg/person/day)



Zinc

(mg/person/day)



The Asia Pacific region lags behind almost every region for average dietary availability for three key micronutrients: Vitamin A, iron and zinc

Source: Global Nutrient Database











Natural resources and resilience

In addition to the three core factors outlined above, the GFSI also assesses how exposure to climate risks and the three natural assets crucial to food security (water, land and oceans) can affect a country's overall food security picture. This is used as an adjustment factor that serves as a lens through which food security can be viewed to demonstrate changes to the overall score when climate-related and natural resource risks are taken into account, but not as a mainstream criterion to determine index rankings. Climate change is one of the biggest risks to the region's food security. A variety of exposure factors such as temperature rise, flooding, drought and rising sea level could destroy crops and reduce food supply. The region's lack of preparedness to adapt its agricultural sector to these risks stands to exacerbate the impacts. While halting the speed of climate change is a global effort, individual countries can still take powerful actions to mitigate the impacts of climate events through investing in early warning systems, developing and adopting disaster risk reduction strategies and revitalizing coastal ecosystems (both to protect the ocean as a food source and to preserve natural defence systems against flooding).

Key regional findings:

- **Climate-related and natural resource risks are high, largely as a result of susceptibility to flooding.** Asia, particularly South Asia, is highly vulnerable to natural disasters such as flooding. In South Asian countries, floods have affected millions of people in the last few decades, causing damage close to USD 1 billion annually.⁹ India, Bangladesh, China, South Korea and Nepal are particularly susceptible, putting their crop production at risk.
- **Rising sea levels pose a grave risk for coastal countries.** Vietnam and Singapore are among the four countries most exposed to sea level rise. Agricultural activity is likely to be severely affected in island nations and in countries with heavy economic activity in low-lying coastal regions due to increased salinisation of soil and crop loss.
- **The region is the least exposed to drought, although there is significant variability.** While Southeast Asia is less vulnerable to drought (the Philippines, Cambodia and Vietnam are among the least exposed), Australia has seen one of its worst droughts on record in recent years, with farm production falling significantly in 2019 as a result. Usually an exporter of wheat, it was forced to import the grain for the first time in 12 years.¹⁰ Countries of Central Asia are also at risk and have seen some of their most severe droughts in the last decade, due to declining rainfall and rising temperatures.
- **Many countries in the region lag behind in their ability to cope with the risks that exposure poses to the agricultural sector.** Given the region's vulnerability to climate change, governments need to invest in adaptive measures. For example, Vietnam is particularly vulnerable to climate change and has one of the lowest rankings for its adaptive capacity by failing to develop early-warning measures for the agricultural sector or invest in climate-smart agriculture practices.

Top 10 countries most vulnerable to sea level rise in the GFSI

- | | | | | | | | | |
|---|---|--------------------|---|---|----------------|----|---|-------------------|
| 1 |  | Netherlands | 5 |  | Denmark | 9 |  | Laos |
| 2 |  | Bahrain | 6 |  | Qatar | 10 |  | Bangladesh |
| 3 |  | Vietnam | 7 |  | Kuwait | | | |
| 4 |  | Singapore | 8 |  | Belgium | | | |

Asia Pacific: Adjusted overall rankings

These are the overall index rankings taking into account the score adjustment for Natural Resources and Resilience risks.

Rank		Score/100
1	Singapore	74.8
2	New Zealand	73.7
3	Australia	72.3
4	Japan	70.5
5	South Korea	65.5
6	Malaysia	65.1
7	China	62.9
8	Kazakhstan	61.1
9	Thailand	58.4
10	Azerbaijan	56.7
11	Vietnam	56.2
12	Indonesia	53.3
13	Sri Lanka	52.9
14	Uzbekistan	52.7
15	Myanmar	52.5
16	Philippines	52.2
17	India	51.1
18	Pakistan	50.7
19	Nepal	49.0
20	Bangladesh	46.6
21	Laos	44.4
22	Cambodia	43.6
23	Tajikistan	41.7

Improving food security in the Asia Pacific region

Key takeaways

1. Although food safety nets and access to finance for farmers exists across the region, there is room for investment to improve the strength and reach of these systems, particularly in low and lower-middle income countries. Refugee and internally displaced populations, such as the Rohingya, are also vulnerable as they can be left outside of national food safety net programmes. Uneven coverage of rural and remote populations can also leave vulnerable people outside of the reach of food safety nets.
2. Food transportation infrastructure, although a strength for the region overall, lags behind in low and lower-middle income countries. Investments in road, port, airport and rail infrastructure can improve food accessibility in these countries. Although the overall region shows a strong performance for rail infrastructure, a number of countries within the region do not have a strong infrastructure to support the transport of food throughout the country. For example, in Laos, a land-locked country, poor road and rail infrastructure may limit the ability of food to travel throughout the country.
3. The Asia Pacific region lags behind other regions on dietary diversity, relying on starchy foods for a higher proportion of the overall diet. There is a need to support the consumption of diversified food sources, including protein sources which provide the full array of essential amino acids. Countries can also take action to improve nutritional education and promote the consumption of more fruits and vegetables through financial and educational interventions.
4. The Asia Pacific region is particularly susceptible to natural disasters such as flooding which put food systems at risk; investments in mitigation strategies such as protecting coastal ecosystems can help to reduce the impacts of future events on agriculture and food supply chains.

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