

# Regional outlook: South and Southeast Asia

The *Outlook's* regional briefs highlight broad trends for the regions defined by the FAO in the implementation of its global work plan. Recognising the regional diversity, the intention is not to compare results across regions. Instead, these briefs illustrate some of the latest regional developments, highlighting responses to global challenges and emerging trends within them and relating these to the main messages of the *Outlook*. The assessments generally compare the end point of the *Outlook's* projection (2031) to the base period of 2019-21. This year, the large and diverse Asia Pacific region has been disaggregated into two separate briefs: Developed and East Asia, and South and Southeast Asia.

The impact of the COVID-19 pandemic, which is still playing out globally, and the response to it, differs across regions. While the briefs do not contain a specific quantitative assessment of the pandemic's impact, they reflect the latest available macro-economic projections and the extent to which the actions imposed to curb the spread of COVID-19 influenced this environment. Similarly, the impact of Russia's war against Ukraine may affect the various regions in the short term, but the briefs do not provide any quantitative analysis as to this impact. Consequently, the trends and issues presented in this chapter are those which are expected to underpin the *Outlook* as economies re-emerge from these recent unexpected shocks and assume that the effects on food, feed and fuel production, consumption and trade will gradually moderate.

## **Background**

The South and Southeast Asia region<sup>1</sup> comprises the largest population of those covered in this chapter. Of its 2.7 billion people, 34% of the global population, almost half live in India. Economically, there has been a wide range of performance within the region over the last several decades. Income per capita ranges from 1 157 USD in the least developed countries of Asia, to 56 900 USD in Singapore, but the overall average is just over 3 000 USD per capita.

Economic activity rebounded in 2021, with per capita GDP rising 4.5% after its COVID induced decline in 2020 of 5.2%. India was hardest hit with a decline of over 8% in 2020 but will recover above pre-pandemic levels in 2022. Economic growth is projected to be the strongest of any region over the next decade, but growth rates have mostly been marked down given weaker global economic prospects. Exceptions from this trend relate to countries endowed with energy or commodity reserves, which will benefit from high primary commodity prices. With such growth, the share of primary agriculture, fish and forestry is anticipated to continue its longer-term decline from a share of about 14%, in the base period to around 10% by 2031.

With economic growth the average share of food in household expenditures in the region has fallen to below 17%. However, for least developed countries this share is 30%<sup>2</sup> and consequently the rise in food

prices will have considerable impact on the food security of many in these countries in the early years of the Outlook period. With some 580 Mil ha of agricultural land, resources are relatively stretched with just 0.2ha/person compared to the world average of around 0.6ha/person. Nevertheless, the region has maintained a positive trade surplus in agricultural goods.

Resource pressures will intensify as population growth remains near 1% p.a. Total factor productivity growth, at 2% p.a., exceeded the global average of 1.4% p.a. in the last decade, which has facilitated economic growth.<sup>3</sup> In the decade to 2019, output growth of near 3% p.a. was achieved by only 0.5% p.a. growth in inputs, primarily materials such as fertilisers, and to a lesser extent capital, as labour declined. But domestic demand for agricultural commodities is mounting. Urbanisation is rising across the region, the share of population residing in urban areas is expected to surpass 45% by 2031, from an average of 40% from 2019-21. With large parts of the region either vegetarian, averse to pig meat consumption or lactose intolerant, the evolution of consumer preferences as incomes grow, particularly with respect to animal product consumption, remains somewhat uncertain.

The region encompasses a range of important exporters and importers of various agricultural and food products. Historically, the region has a relatively small positive trade balance. Almost a quarter of the total value of agriculture and fish production has been exported in recent years. Exports are dominated by plant-based products, particularly rice and vegetable oil, where the region has a 79% and 61% share in global exports, respectively. The Southeast Asia region is considered a major player in Global Value Chains, specifically those involving vegetable oils and their further processed products.<sup>4</sup>

The main challenges facing the region relate to its ability to increase productivity and innovation, particularly in the face of climate change risks and the need to address food insecurity. Food insecurity remains high, with the region accounting for about one-third of the world's undernourished population. Achieving continued economic growth in a time of global uncertainty with respect to international markets is critical. Significant pressure has been exerted on its natural resource base – its natural capital – during periods of past development, particularly in countries of Southeast Asia, and innovative solutions are required. Key policy challenges concern the nature and extent of market intervention schemes and how they affect interactions with global markets.

## ***Production***

The South and Southeast Asian region is the second largest contributor to the total global output in value terms from agriculture and fisheries. Crop production accounts for the largest share, but livestock production is growing faster. An expansion of 25% in agricultural production projected by 2031 exceeds population growth, implying that agricultural output is set to rise in per capita terms.

Relative to 2019-21, crop production is expected to expand by 22%, accounting for 62% of total agricultural and fish output by 2031. Productivity gains are key to this expansion, as land used for crop production is only expected to increase by 1.3% over the ten-year period. In fact, growth in value per hectare of cropland accelerates over the projection period, to 1.6% p.a., reflecting intensification and enhanced productivity. The region counts amongst the leading contributors to global output for several products, including rice, vegetable oil, pulses and sugar. Apart from vegetable oil, where it remains stable, the regions share in global production is expected to rise for all the aforementioned products.

Cereal production is concentrated in India, Indonesia, Pakistan and LDC's such as Bangladesh, Cambodia and Myanmar. India alone accounts for around 70% of wheat and 40% of rice production and is expected to contribute 48% of additional rice production by 2031. Growth in rice production stems from productivity gains, with area expansion of around 2.5% in India and Least Developed Asia by 2031, compared to yield gains of 16.5%.

The region is the leading contributor to vegetable oil production globally, attributed to palm oil output in Malaysia and Indonesia. Particularly in Malaysia, this sector relies strongly on foreign labour and over the

past two years, it has been challenged by the spread of COVID-19 and the associated restrictions on movement of people, exacerbating structural constraints that had already limited supply prior to the pandemic. While some recovery was evident in Indonesia, weather conditions in Malaysia further contributed to a 15-year low in production in 2021. Despite some recovery in 2022, the slowdown in the expansion of the mature oil palm area implies that production growth in both Indonesia and Malaysia will remain slower in the coming decade, but will still retain a combined share of 33% in global vegetable oil production.

Livestock products currently account for 22% of the value of agriculture and fish output and growth of 2.9% p.a. will lead to an expansion of this share to 25% by 2031. India and Pakistan are the biggest contributors to this growth, which emanates mainly from dairy products. Milk production growth of 41% by 2031 stems from a 21% expansion in the cow herd, despite a minor contraction in pastureland use, and a 17% improvement in milk yield per cow. Meat production is dominated by poultry, which will also account for more than 60% of additional meat production by 2031. Growth in this sector is largely a result of increased feed intensity and breeding improvements. Pork production in the region is limited and concentrated mainly in Viet Nam and Thailand. Following sharp reductions in 2019 and 2020 because of African Swine Fever (ASF), pork production in Viet Nam rebounded and increased by 5% in 2021. As production is dominated by small-scale producers, the recovery will take many years, such that production is not expected to surpass 2018 levels until 2024.

Fish production is an important contributor to agricultural production in the region at 15% of total value. However, growth of 15% by 2031 is the slowest amongst the three subsectors, eroding its contribution over time. Whilst captured fisheries is expected to remain stable, reflecting resource limitations, growth of 2.1% p.a. in aquaculture implies that it will surpass captured fisheries by 2027, accounting for 52% of total production by 2031.

Total direct GHG emissions from agriculture are set to rise by 8.8% by 2031 relative to 2019-21, driven predominantly by the livestock sector. While crop related emissions will remain stable, livestock related emissions, which reflect ruminant herd expansion, will increase at a rate consistent with the past decade at 1.1% p.a. By 2031, 29% of agriculture related GHG emissions globally will be attributable to the region.

### **Consumption**

Years of positive progress in reducing food insecurity and undernourishment in the South and Southeast Asian region halted in 2020, largely due to the impact of the COVID-19 pandemic on income and food affordability. Particularly in Southern Asia, the prevalence of undernourishment rose above 15% for the first time in a decade and the number of undernourished people exceeded 300 million in 2020. The strong economic recovery in the Southern and Southeast Asia region, with income growth of 4.5% in 2021 and a further 4.7% expected in 2022 should help in overcoming short-term food insecurity, but the current spike in commodity prices may forestall much improvement. In the medium term, the combination of modest declines in population growth, accelerated income growth and consistent, albeit slow urbanisation, will support the continued evolution of dietary patterns, thus supporting demand for calorie and nutrient dense foods (Kelly, 2016<sup>[1]</sup>) (Reardon et al., 2014<sup>[2]</sup>). By 2031, average calorie availability in the region is projected to increase by almost 200 kcal/person/day to average just over 2 850 kcal, just 6.5% below the world average. Gains will be mainly driven by increased consumption of dairy products, meat and vegetable oils.

Cereals, particularly rice, remain the major source of calorie availability in the region. By 2031, 53% of total calories will come from cereals (of which almost 30% from rice). This compares to 55% from cereals and 31% from rice in 2019-21 and follows a modest expansion of 3.5% in per capita consumption of rice over the 10-year period, mainly in India. In Viet Nam and Indonesia, rice consumption is expected to decline, replaced with wheat.

Average protein intake remains well below the global average but will rise by 7 g/person/day to 75 g/person/day by 2031. This is underpinned by growing consumption of meat and dairy products. Meat consumption will grow from a small base to reach 15.5kg per capita by 2031 – still more than 20kg below the global average, reflecting limited meat consumption in India in particular. Poultry will account for more than half of additional consumption. Dairy product consumption is already well above the world level and growth of almost 30% in per capita consumption by 2031 will see it rise to 32% above the world average level. Fresh dairy consumption is expected to grow fastest, reflecting considerable growth in both India and Pakistan.

As livestock and dairy production grow, the combination of herd expansion, rising feed use intensity and efficiency gains will support growth of 26% in feed use by 2031. Maize constitutes the bulk of animal feed, but its share is smaller than in many other regions, with a further significant contribution from protein meal. Maize and protein meal used in animal feed are both expected to rise by 2.2% p.a., sufficient to keep the share of both products in total feed use fairly stable.

Increasing mandates, mainly in India, sees the region almost double its share in global ethanol use from 6.5% in 2019-21 to 11% by 2031. The region's share in global biodiesel use is currently much larger at 21% but is also expected to rise to 30% by 2031 – mainly as a result of gains in Indonesia and to a much lesser extent Malaysia and Thailand.

In Indonesia, the blending mandate is expected to direct domestic palm oil supplies to the biodiesel market. Together with strong short term price support for vegetable oil on the back of current supply limitations, this could help catalyse investment in the sector. However, land availability remains a constraint and a key contributing factor to the replanting delays in oil palm in recent years. This also underpins slower growth in the region's vegetable oil production over the outlook period, with production set to expand 17% by 2031, compared to 43% over the last decade.

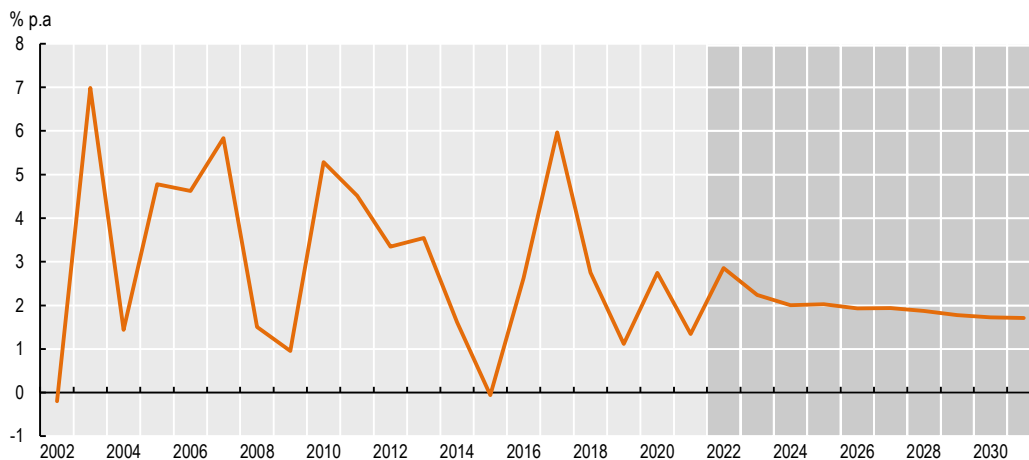
### **Trade**

The region is currently still a small net exporter of agricultural commodities but is expected to record a minor deficit by 2031. This aggregate figure masks vast differences within the region. Both India and Southeast Asia are expected to remain net exporters, although India's trade surplus is expected to decline. By contrast, net imports from the LDC's and other developing countries of the region continue to rise.

The region is a major net exporter of rice, vegetable oil, fish and fresh fruit. Rice exports are expected to grow substantially, by an annual average of 3%, thereby increasing the region's share in global exports to 86% by 2031. This largely arises from India, accounting for 51% of additional exports, but strong growth is also projected in Thailand, Viet Nam and LDC's such as Myanmar. While Indonesia and Malaysia will remain leading vegetable oil exporters, the region's share in global exports will continue to decline. This is mainly the result of declining market share in Malaysia, whose palm oil exports are projected to rise by merely 0.6% p.a. Fish exports from the region are expected to decline over the next ten years, as consumption growth in the region outpaces production. A significant share of fish trade will occur within the region.

The region's dependence on imports of wheat, maize, oilseeds, protein meal and sugar are all set to rise by 2031. However, the share of total meat consumption supplied through imports is set to decline, with livestock production increasingly dependent on imported feed products. Viet Nam is the major driver of this trend, as pork imports fall precipitously from base period levels, which had increased sharply as a result of the ASF outbreak.

Figure 1. Slowing growth of agriculture and fish output in South and Southeast Asia region

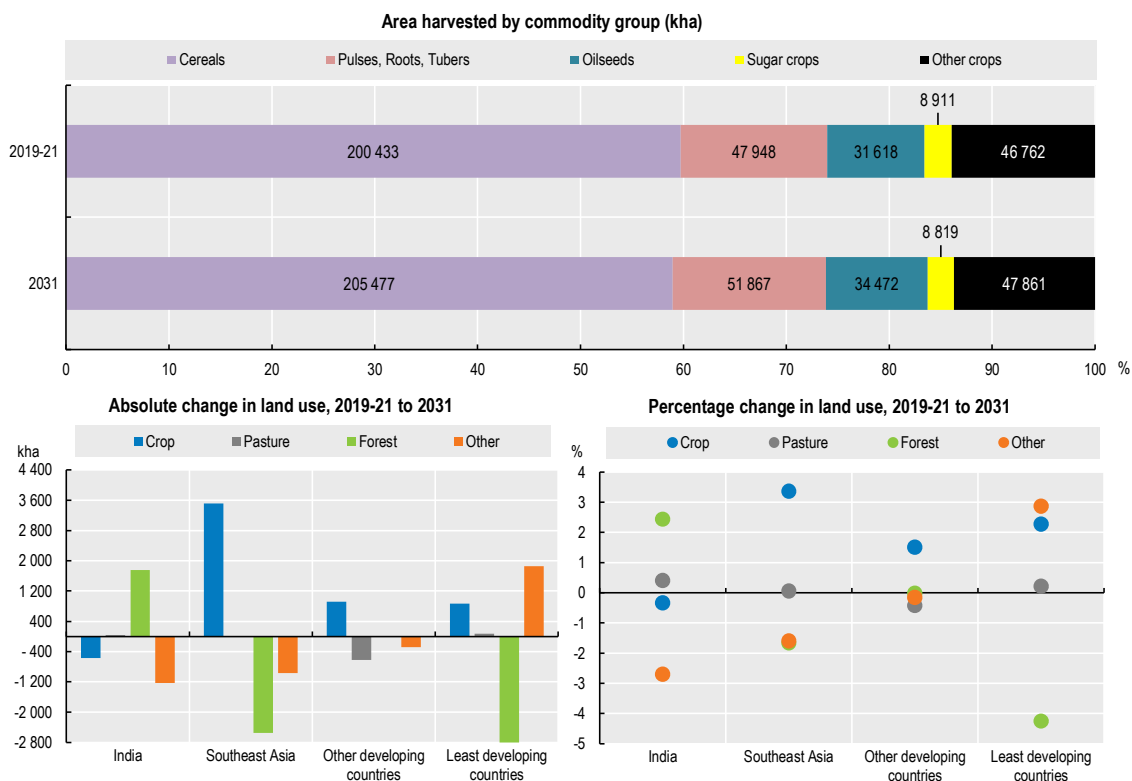


Note: Estimates are based on historical time series from the FAOSTAT Value of Agricultural Production domain, which are extended with the Outlook database. Remaining products are trend-extended. The Net Value of Production uses own estimates for internal seed and feed use. Values are measured in constant 2014-2016 USD.

Source: FAO (2022). FAOSTAT Value of Agricultural Production Database, <http://www.fao.org/faostat/en/#data/QV> ; OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>

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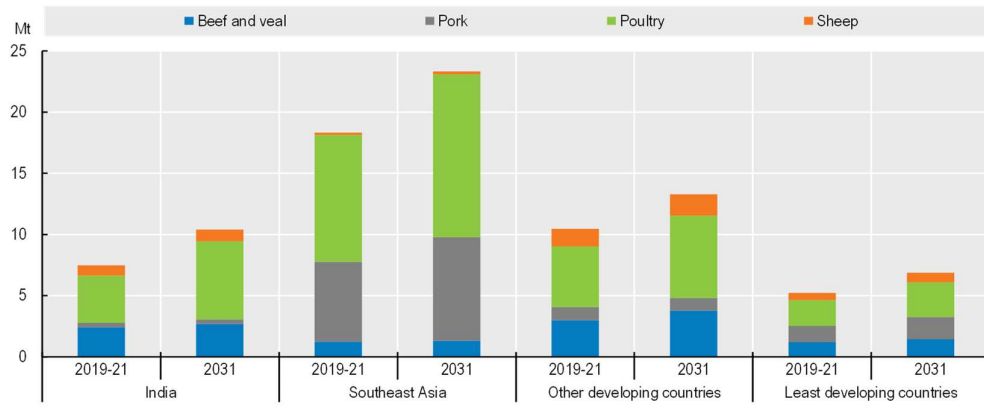
Figure 2. Change in area harvested and land use in South and Southeast Asia



Source: OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

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**Figure 3. Livestock production in South and Southeast Asia**



Source: OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

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**Figure 4. Demand for key commodities, food availability and agricultural trade balances in South and Southeast Asia**



Notes: Estimates are based on historical time series from the FAOSTAT Food Balance Sheets and trade indices databases and include products not covered by the *Outlook*. a) Population growth is calculated by assuming per capita demand constant at the level of the year preceding the decade. b) Fats: butter and oils; Animal: egg, fish, meat and dairy except for butter; Staples: cereals, oilseeds, pulses and roots. c) Include processed products, fisheries (not covered in the FAOSTAT trade index) based on outlook data.

Source: FAO (2022). FAOSTAT Food Balance Sheets and trade indices databases, <http://www.fao.org/faostat/en/#data> ; OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

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Table 1. Regional Indicators: South and Southeast Asia

	Average		2031	%	Growth <sup>2</sup>	
	2009-11	2019-21 (base)			Base to 2031	2012-21
<b>Macro assumptions</b>						
Population ('000)	2 352 335	2 655 571	2 943 680	10.85	1.18	0.91
Per capita GDP <sup>1</sup> (kUSD)	2.25	3.06	4.60	50.19	2.90	3.98
<b>Production (bln 2014-16 USD)</b>						
Net value of agricultural and fisheries <sup>3</sup>	798.0	1049.6	1303.5	24.19	2.50	1.91
Net value of crop production <sup>3</sup>	527.4	659.4	803.6	21.88	1.85	1.70
Net value of livestock production <sup>3</sup>	159.9	233.1	318.8	36.76	3.91	2.87
Net value of fish production <sup>3</sup>	110.6	157.1	181.0	15.25	3.32	1.24
<b>Quantity produced (kt)</b>						
<i>Cereals</i>	489 824	574 421	677 519	17.95	1.42	1.41
<i>Pulses</i>	24 831	36 298	45 798	26.17	4.47	1.77
<i>Roots and tubers</i>	36 890	51 325	62 559	21.89	2.87	1.70
<i>Oilseeds<sup>4</sup></i>	15 655	19 277	22 945	19.03	3.23	1.28
<i>Meat</i>	30 084	41 478	53 873	29.88	3.01	2.36
<i>Dairy<sup>5</sup></i>	27 913	42 951	60 829	41.62	4.66	3.28
<i>Fish</i>	39 278	55 184	63 596	15.24	3.19	1.24
<i>Sugar</i>	43 487	51 836	60 341	16.41	1.12	0.71
<i>Vegetable oil</i>	65 796	94 119	109 679	16.53	3.39	1.05
<b>Biofuel production (mln L)</b>						
<i>Biodiesel</i>	1926.03	12652.03	16824.01	32.97	15.04	1.31
<i>Ethanol</i>	3 644	7 456	15 977	114.29	6.17	5.87
<b>Land use (kha)</b>						
Total agricultural land use	566 906	579 933	584 168	0.73	0.25	0.05
Total land use for crop production <sup>6</sup>	358 290	372 427	377 151	1.27	0.42	0.08
Total pasture land use <sup>7</sup>	208 616	207 506	207 016	-0.24	-0.05	-0.02
<b>GHG Emissions (Mt CO<sub>2</sub>-eq)</b>						
Total	1 576	1 680	1 828	8.81	0.70	0.67
Crop	693	720	720	0.07	0.42	0.02
Animal	869	944	1 090	15.49	0.91	1.12
<b>Demand and food security</b>						
Daily per capita caloric availability <sup>8</sup> (kcal)	2 497	2 653	2 857	7.71	0.68	0.70
Daily per capita protein availability <sup>8</sup> (g)	61.6	67.9	74.5	9.74	0.9	0.9
<b>Per capita food availability (kg/year)</b>						
<i>Staples<sup>9</sup></i>	176.8	181.6	190.1	4.68	0.34	0.32
<i>Meat</i>	11.3	13.3	15.5	16.60	1.70	1.29
<i>Dairy<sup>5</sup></i>	12.7	16.7	21.3	27.21	3.11	2.29
<i>Fish</i>	12.4	15.0	16.1	7.48	1.69	0.60
<i>Sugar</i>	19.3	20.9	21.9	4.65	0.17	0.40
<i>Vegetable oil</i>	10.4	12.9	14.6	12.66	2.05	0.97
<b>Trade (bln 2014-16 USD)</b>						
Net trade <sup>3</sup>	13	42	13	-69.01	..	..
Value of exports <sup>3</sup>	165	239	259	8.48	3.10	0.65
Value of imports <sup>3</sup>	153	197	246	24.81	3.76	1.92
<b>Self-sufficiency ratio<sup>10</sup></b>						
<i>Cereals</i>	96.1	92.2	92.6	0.37	-0.67	-0.04
<i>Meat</i>	93.6	96.5	97.4	0.97	-0.05	0.10
<i>Sugar</i>	94.9	96.4	93.4	-3.15	0.37	-0.62
<i>Vegetable oil</i>	146.5	131.3	123.5	-5.94	-1.27	-0.50



Notes: 1 Per capita GDP in constant 2010 US dollars. 2. Least square growth rates (see glossary). 3. Net value of agricultural and fisheries data follows FAOSTAT methodology, based on the set of commodities represented in the Aglink-Cosimo model valued at average international reference prices for 2014-16. Projections for not included crops have been made on the basis of longer term trends. 4. Oilseed represents soybeans and other oilseeds. 5. Dairy includes butter, cheese, milk powders and fresh dairy products, expressed in milk solid equivalent units. 6. Crop Land use area accounts for multiple harvests of arable crops. 7. Pasture land use represents land available for grazing by ruminant animals. 8. Daily per capita calories/protein represent availability per capita per day, not intake. 9. Staples represent cereals, oilseeds, pulses, roots and tubers. 10. Self-sufficiency ratio calculated as  $\text{Production} / (\text{Production} + \text{Imports} - \text{Exports}) * 100$ .

Sources: FAO (2022). FAOSTAT Food Balance Sheets and trade indices databases, <http://www.fao.org/faostat/en/#data> ; OECD/FAO (2022), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

<sup>1</sup> India, Indonesia, Iran (Islamic Republic of), Malaysia, Pakistan, Philippines, Thailand, Viet Nam, Asia Least Developed, Other Developing Asia and Oceania. For mentioned regions, see Summary table for regional grouping of countries.

<sup>2</sup> Source OECD-FAO interpolated for 2019-21 from the database of the Global Trade Analysis Project (GTAP) 2011, using food expenditure and GDP data used in this *Outlook*.

<sup>3</sup> (Fuglie, 2015<sub>[12]</sub>) (updated to 2019, USDA).

<sup>4</sup> See "Southeast Asia, Prospects and Challenges" in the *OECD-FAO Agricultural Outlook 2017-2026*.