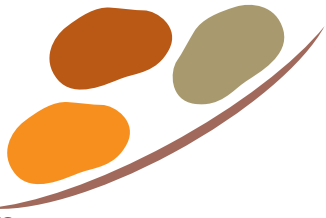


Potato world

The potato is grown in more than 100 countries from the Arctic Circle to the southern extremity of South America, and at all latitudes in between.

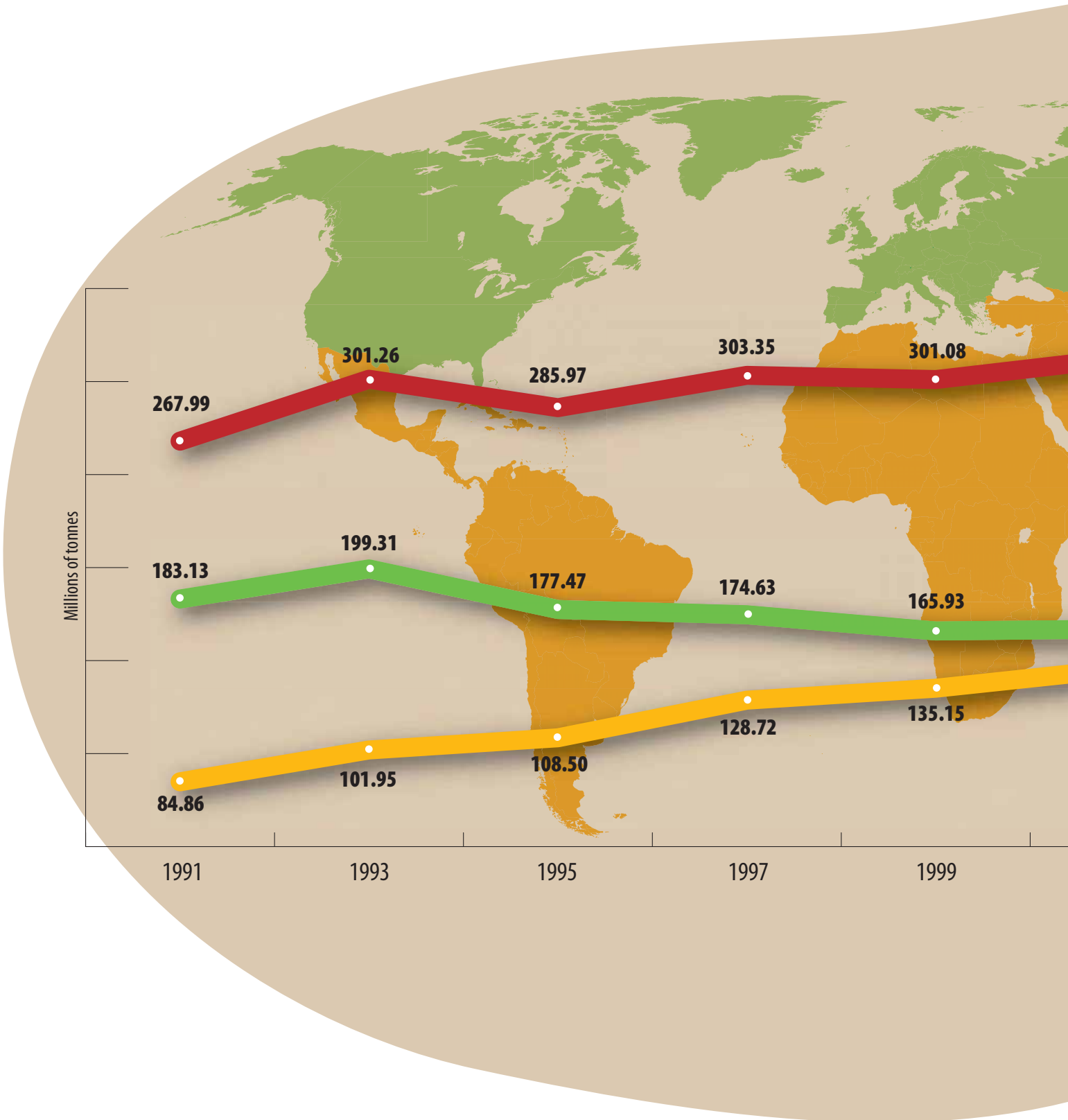
Profiles of the world's top producers reveal the potato's extraordinarily rich past – and point to a bright future





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of the Potato 2008
*New light on a hidden
treasure*

World potato production



The world potato sector is undergoing major changes. Until the early 1990s, most potatoes were grown and consumed in Europe, North America and countries of the former Soviet Union. Since then, there has been a dramatic increase in potato production

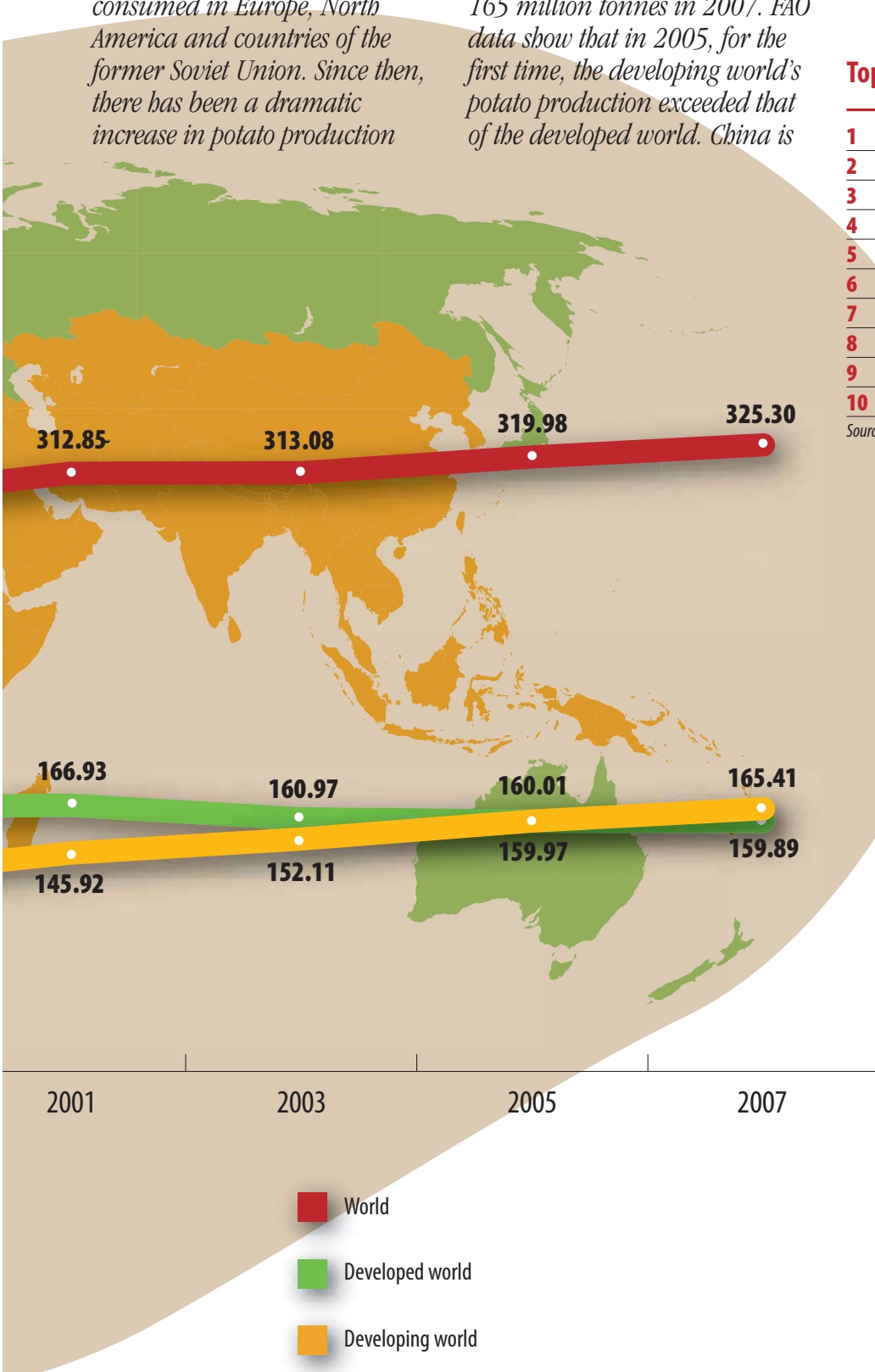
and demand in Asia, Africa and Latin America, where output rose from less than 30 million tonnes in the early 1960s to more than 165 million tonnes in 2007. FAO data show that in 2005, for the first time, the developing world's potato production exceeded that of the developed world. China is

now the world's biggest potato producer, and almost a third of all potatoes is harvested in China and India.

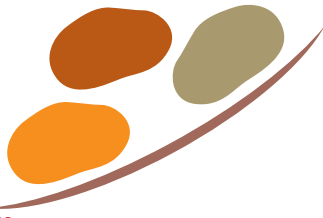
Top potato producers, 2007

	tonnes
1 China	72 040 000
2 Russian Federation	36 784 200
3 India	26 280 000
4 United States of America	20 373 267
5 Ukraine	19 102 000
6 Poland	11 791 072
7 Germany	11 643 769
8 Belarus	8 743 976
9 Netherlands	7 200 000
10 France	6 271 000

Source: FAOSTAT



- World
- Developed world
- Developing world



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Potato production and consumption, by region

Asia and Europe are the world's major potato producing regions, accounting for more than 80 percent of world production in 2007. While harvests in Africa and Latin America were far smaller, production was at or near record levels. North America was the clear leader in yields, at more than 40 tonnes per hectare.

Potato production, by region, 2007

	harvested area (hectares)	quantity (tonnes)	yield (tonnes/ha)
Africa	1 541 498	16 706 573	10.8
Asia/Oceania	8 732 961	137 343 664	15.7
Europe	7 473 628	130 223 960	17.4
Latin America	963 766	15 682 943	16.3
North America	615 878	25 345 305	41.2
WORLD	19 327 731	325 302 445	16.8

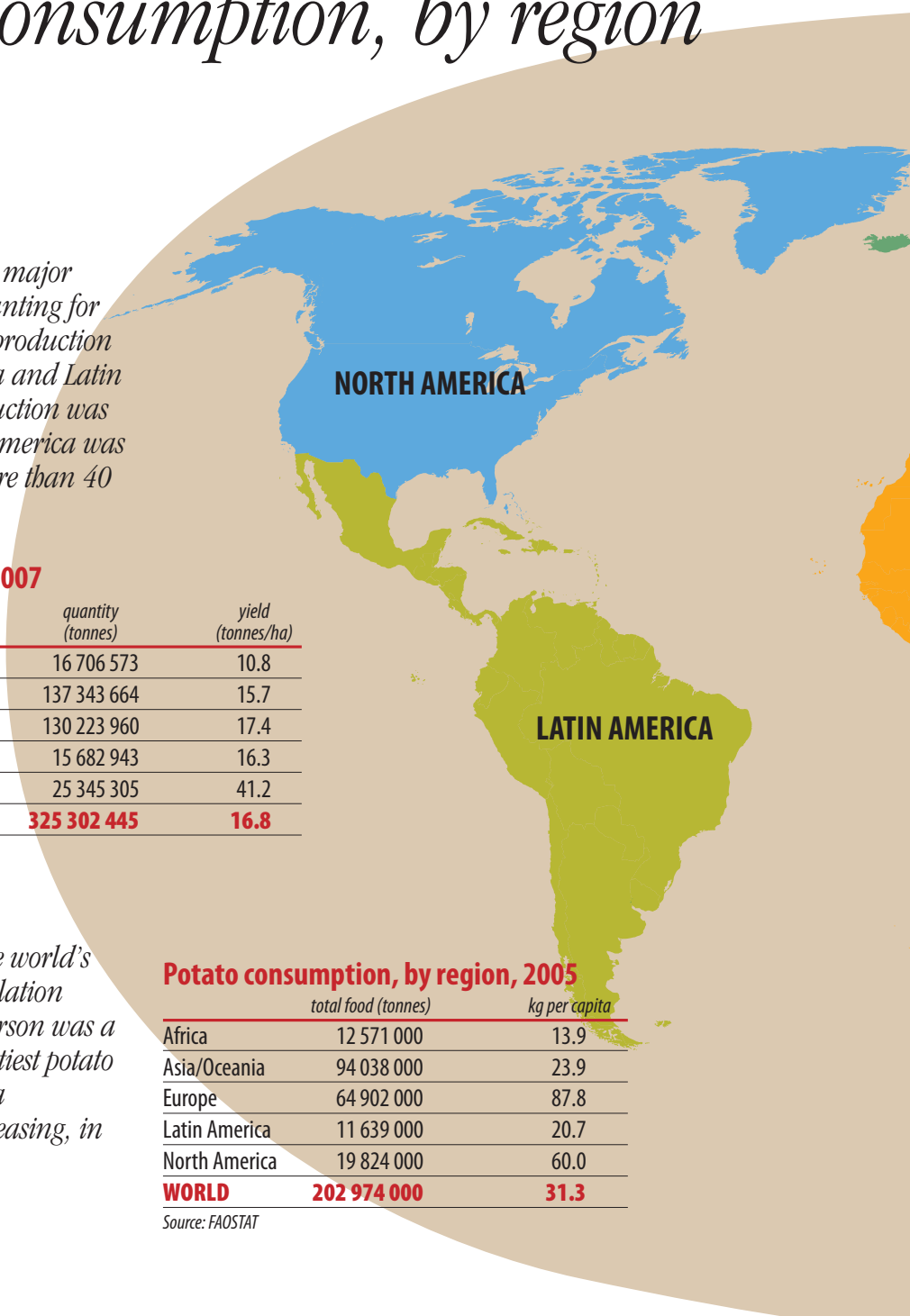
Source: FAOSTAT

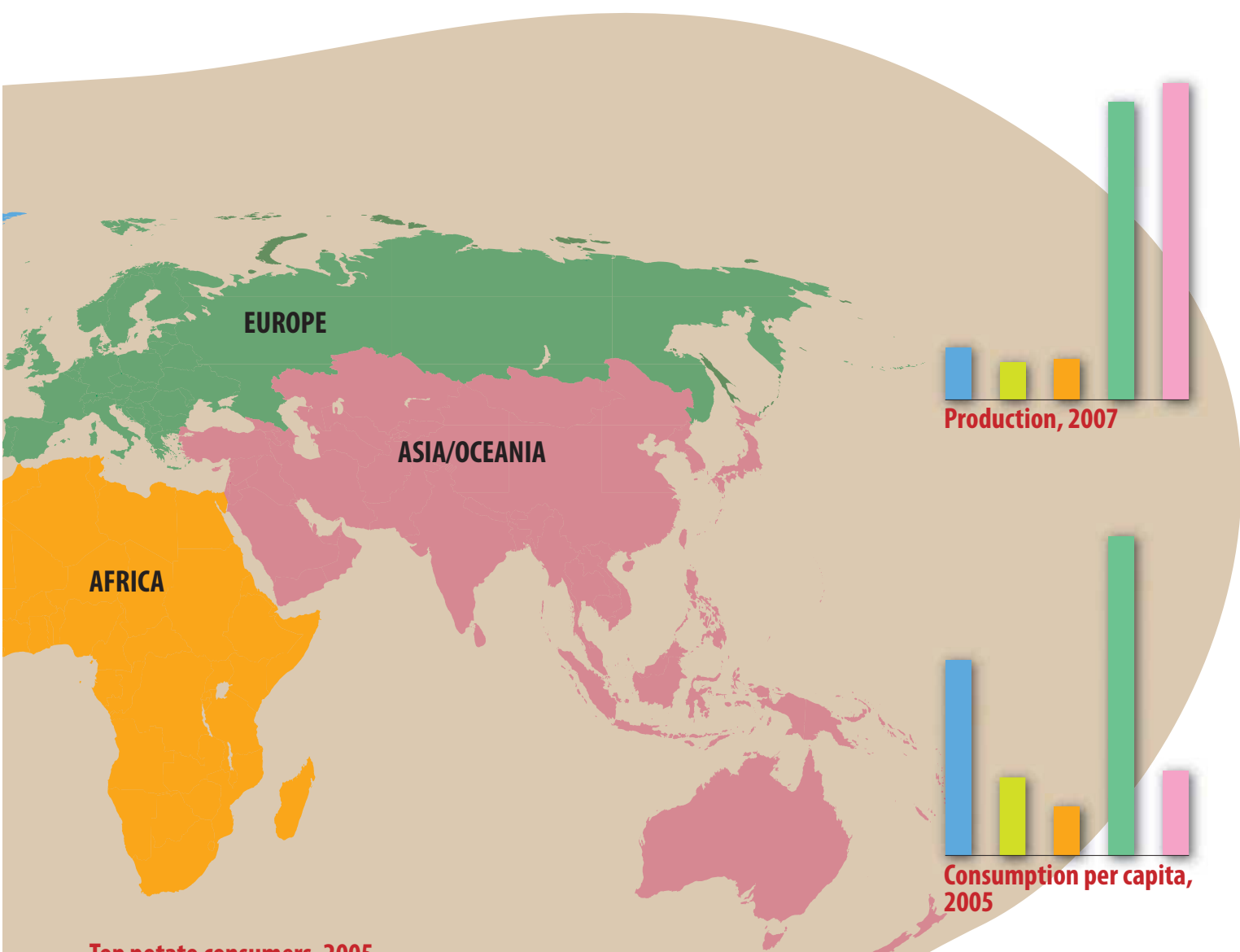
Asia consumes almost half of the world's potato supply, but its huge population means that consumption per person was a modest 24 kg in 2005. The heartiest potato eaters are Europeans. Per capita consumption is lowest, but increasing, in Africa and Latin America.

Potato consumption, by region, 2005

	total food (tonnes)	kg per capita
Africa	12 571 000	13.9
Asia/Oceania	94 038 000	23.9
Europe	64 902 000	87.8
Latin America	11 639 000	20.7
North America	19 824 000	60.0
WORLD	202 974 000	31.3

Source: FAOSTAT





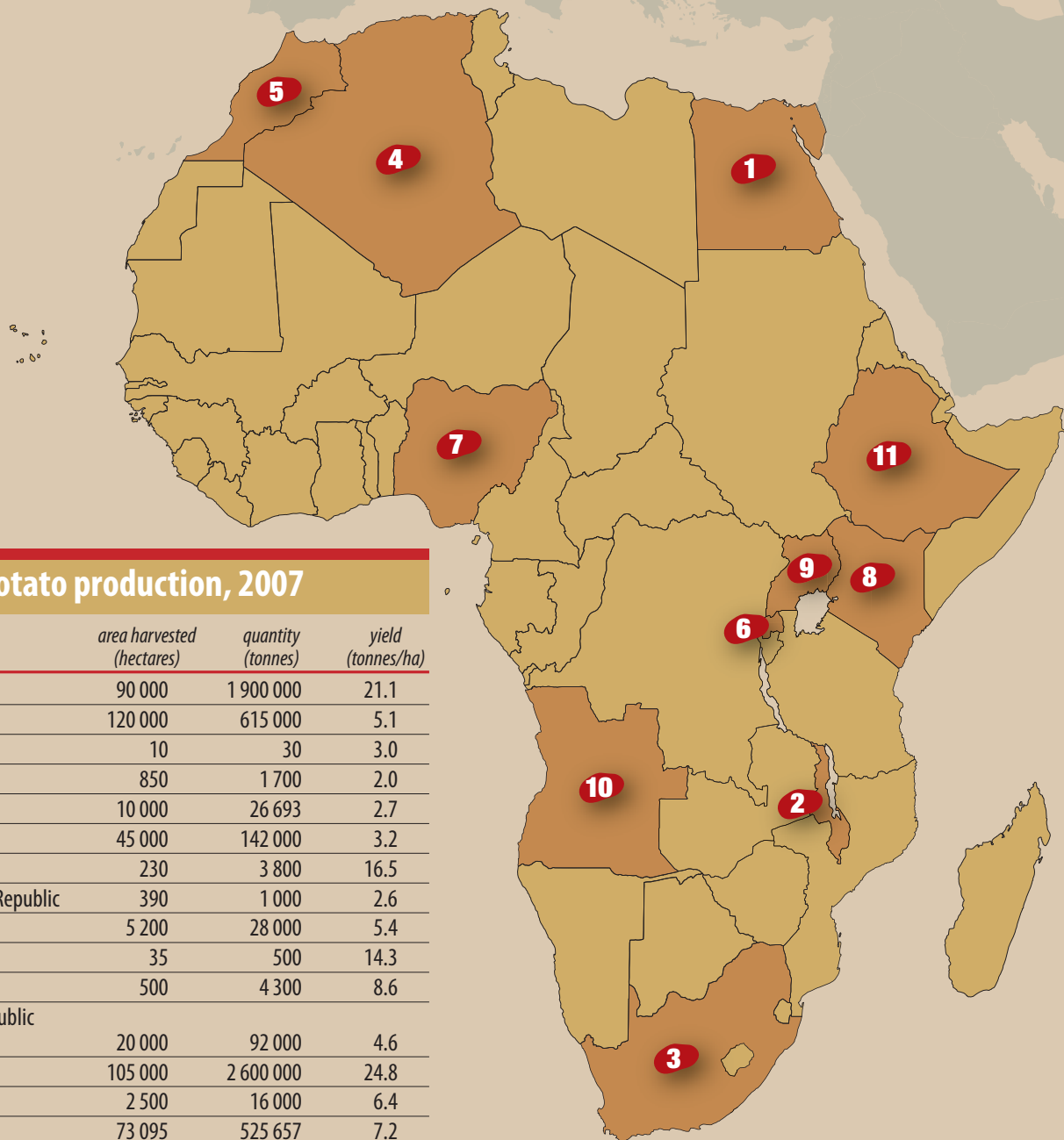
Production, 2007

Consumption per capita, 2005

Top potato consumers, 2005

<i>quantity (tonnes)</i>		<i>kg per capita</i>	
1 China	47 594 193	1 Belarus	181
2 Russian Federation	18 828 000	2 Kyrgyzstan	143
3 India	17 380 730	3 Ukraine	136
4 United States of America	17 105 000	4 Russian Federation	131
5 Ukraine	6 380 850	5 Poland	131
6 United Kingdom	6 169 000	6 Rwanda	125
7 Germany	5 572 000	7 Lithuania	116
8 Poland	5 000 000	8 Latvia	114
9 Bangladesh	4 041 463	9 Kazakhstan	103
10 Islamic Republic of Iran	3 991 142	10 United Kingdom	102

Source: FAOSTAT



Africa: Potato production, 2007

country	area harvested (hectares)	quantity (tonnes)	yield (tonnes/ha)
Algeria	90 000	1 900 000	21.1
Angola	120 000	615 000	5.1
Benin	10	30	3.0
Burkina Faso	850	1 700	2.0
Burundi	10 000	26 693	2.7
Cameroon	45 000	142 000	3.2
Cape Verde	230	3 800	16.5
Central African Republic	390	1 000	2.6
Chad	5 200	28 000	5.4
Comoros	35	500	14.3
Congo	500	4 300	8.6
Democratic Republic of the Congo	20 000	92 000	4.6
Egypt	105 000	2 600 000	24.8
Eritrea	2 500	16 000	6.4
Ethiopia	73 095	525 657	7.2
Kenya	120 000	800 000	6.7
Lesotho	5 600	96 000	17.1
Libyan Arab Jamahiriya	10 000	196 000	19.6
Madagascar	38 000	225 000	5.9
Malawi	185 000	2 200 402	11.9
Mali	4 100	90 000	22.0
Mauritania	430	2 200	5.1
Mauritius	550	13 000	23.6
Morocco	60 000	1 450 000	24.2
Mozambique	6 200	80 000	12.9
Niger	420	4 200	10.0
Nigeria	270 000	843 000	3.1
Réunion	230	5 300	23.0
Rwanda	133 000	1 200 000	9.0
Senegal	600	12 000	20.0
South Africa	58 000	1 972 391	34.0
Sudan	15 708	263 900	16.8
Swaziland	3 000	6 000	2.0
Tunisia	24 550	350 000	14.3
Uganda	93 000	650 000	7.0
United Republic of Tanzania	37 000	240 000	6.5
Zambia	1 050	14 500	13.8
Zimbabwe	2 250	36 000	16.0
Africa	1 541 498	16 706 573	10.8

Top producers, 2007

1 Egypt	7 Nigeria
2 Malawi	8 Kenya
3 South Africa	9 Uganda
4 Algeria	10 Angola
5 Morocco	11 Ethiopia
6 Rwanda	

Africa

Potatoes arrived late in Africa, around the turn of the 20th century. In recent decades, production has been in continual expansion, rising from 2 million tonnes in 1960 to a record 16.7 million tonnes in 2007. Potatoes are grown under a wide range of conditions – from irrigated commercial farms in Egypt and South Africa to intensively cultivated tropical highland zones of Eastern and Central Africa, where it is mainly a small farmer's crop.

1. Egypt



The potato was introduced to Egypt during the 1800s, and large scale cultivation began during the First World War, when British colonial officials encouraged its production to feed their troops. After the war, however, expansion of potato growing was hampered by the poor quality of imported seed and by farmers' inexperience with the crop.

All that has changed: since 1961, Egypt's irrigated potato production – concentrated in the Nile River delta in the north – has expanded at a rate of more than 5 percent a year. Between 1990 and 2007, annual output rose from 1.6 million tonnes to some 2.6 million tonnes, making Egypt Africa's No. 1 potato producer.

Egypt also ranks among the world's top

MOSTAFA MOFTAH



At a potato sorting factory in the Nile Delta, Egypt

potato exporters – in 2004, exports totalled more than 380 000 tonnes of fresh potatoes and 18 000 tonnes of frozen potato products, destined mainly for markets in Europe.

2. Malawi



Potatoes came to East Africa in the 19th century, brought by missionaries and European colonialists. But the crop did not become important to Malawians until the 1960s, when production reached around 60 000 tonnes a year.

Now Malawi is sub-Saharan Africa's biggest potato producer, with a 2007 harvest of 2.2 million tonnes. The potato is grown mainly in highland areas in the country's southern and central regions, the most suitable areas being at altitudes of between 1 000 and 2 000 m and with more than 750 mm of annual rainfall. In parts of the



**Potato market
in Kasungu, Malawi**

southern region, farmers can grow two crops each year. Potatoes are often planted with maize and beans during the main October-March season.

Only a tiny proportion of Malawi's potatoes is exported. Annual consumption has more than tripled over the past 15 years to a high 88 kg per capita.

3. South Africa



Dutch seafarers heading for East Asia probably brought the potato to South Africa in the 1600s (it is thought sailors encouraged potato growing at ports of call so they could re-supply with fresh tubers during ocean voyages).

South Africa's potato output has grown strongly over the past 15 years, from 1.2 million tonnes in 1990 to a record 1.97 million tonnes in 2007. In the same period, the potato farming area actually declined, from 63 000 ha to 58 000 ha. Most potatoes are grown on relatively large farms,

increasingly under irrigation, with yields averaging around 34 tonnes per hectare.

South Africa boasts a sophisticated seed potato industry and – thanks largely to the country's rapid rate of urbanization – a vibrant potato processing sector, which utilizes some 250 000 tonnes of potatoes per year, mainly for frozen French fries and crisps. Annual potato consumption is around 30 kg per person.

4. Algeria



After the introduction of *Solanum tuberosum* to Algeria in the mid-1800s, potatoes were grown mainly for export to French markets. By the time of national independence from France, in 1962, farmers were harvesting on average 250 000 tonnes a year, with about one third marked for export.

Since then, the potato has become an increasingly important crop for domestic consumption, with production in 2006 reaching a record 2.18 million tonnes. Potato

is grown over an area of 90 000 ha, and can be planted and harvested somewhere in Algeria in virtually any month of the year.

The main fresh potato growing areas are along the Mediterranean coast, where a mild climate permits year-round production. Potatoes are also grown at elevations of 500 m in hills and valleys between the coast and the Atlas Mountains, and in high plateau areas. Annual potato consumption in Algeria has increased from 35 kg in 1990 to around 57 kg in 2005.

5. Morocco



The potato was probably well established in Morocco before the country became a French protectorate in 1910. Over the following century – and particularly since independence in 1956 – production has expanded strongly, rising from about 150 000 tonnes in 1961 to a record 1.56 million tonnes in 2006. In the same period, yields grew from 10 tonnes per hectare to more than 26 tonnes.

By sheer weight, the potato is now Morocco's third biggest crop, after sugar beets and wheat, and second only to tomatoes among exported vegetables, with more than 40 000 tonnes shipped to Europe in 2005.

Except for a brief period during the winter months, potatoes are grown year round. Production of fresh potatoes is concentrated along the Atlantic Coast north and south of Casablanca, where a modified Mediterranean climate provides very favourable growing conditions. Potatoes are also grown in high, rugged parts of the Atlas mountains, at

elevations of more than 3 000 m. Moroccans consume an average of 42 kg per capita of potatoes a year.

6. Rwanda



The potato arrived with German soldiers and Belgian missionaries in Rwanda in the early 20th century. Today, *ibirayi* – derived from *uburayi* (“that which comes from Europe”) – is the country's second most important crop after plantains and, in the sub-Saharan region, Rwanda is the third largest potato producer.

Since 1961, Rwanda's potato output has risen from less than 100 000 tonnes to 1.3 million tonnes in 2005. The harvest in 2007 was only slightly smaller. Potatoes grow well in several parts of the country – mainly above elevations of 1 800 m – and some areas grow two crops a year. Most of the potato sector consists of small family farms that intercrop potato with beans and maize, and yields average almost 10 tonnes per hectare.

The potato underpins Rwanda's food security. Annual consumption is a very high 125 kg per person, making potato the country's second most important source of calorie intake after cassava.



7. Nigeria



In the potato world, Africa's most populous country, Nigeria, stands out: it is the fourth biggest producer of potato in sub-Saharan Africa, and has almost as much land under potato as Germany. Potato output has grown sevenfold over the past decade, reaching 840 000 tonnes in 2007.

The main potato growing area is the Jos plateau, where altitudes ranging from 1 200 to 1 400 m and summer temperatures that rarely exceed 35°C make for a temperate climate well suited to potato production. However, productivity is constrained by a lack of suitable varieties, and high land and labour costs. In fact, Nigeria records one of the world's lowest average potato yields, little more than 3.1 tonnes per hectare.

Potato consumption is also very low, at around 3.2 kg per capita per year. However, Nigeria's taste for potatoes, especially in rapidly growing urban areas, is increasing: since 2000, imports of raw and processed potatoes have risen from less than 9 000 tonnes to 40 000 tonnes a year.

8. Kenya



Introduced to East Africa by British farmers in the 1880s, the potato has grown in importance – both as a staple food and as a source of farmer incomes – over the past 30 years. Measured by quantity harvested, it now ranks as the country's No. 2 food crop, after maize, with production in 2007 totalling around 800 000 tonnes.

The potato in Kenya is grown mainly by

small scale farmers, many of them women, although some larger-scale growers specialize in commercial production. Cultivation is concentrated in highland areas of from 1 200 to 3 000 m above sea level.

Nearly all of Kenya's potatoes are consumed locally, at an average rate of almost 25 kg per capita a year. *Kiazi* is relished not only by the rural people who grow them, but by higher-income urban dwellers as well. While in some African countries potato is considered a "poor person's food", in Kenya it is considered a high quality and prestigious food item.

9. Uganda



Potato cultivation reached Uganda early in the 1900s, thanks probably to missionaries from the Congo. By mid-century, the tubers were widely grown in the country's cool highlands – in fact, the plant was so prolific in some areas that it was regarded as a weed.

In the 1960s, the Ugandan Department of Agriculture launched a potato development programme that helped boost average yields to 10 tonnes per hectare. Potato output topped 350 000 tonnes in the 1970s, but dropped sharply during the widespread civil strife of the following decade.

Potatoes are popular in Nairobi

PETER KIBERA



Since 1990, potato production has rebounded, rising from 224 000 tonnes to a record 650 000 tonnes in 2007. In the same period, the area under potato tripled to an estimated 90 000 ha. Almost half of the national harvest comes from the intensely farmed Kabale highlands, which lie at 2 000 m above sea level, some 400 km southwest of Kampala.

10. Angola



During the early 16th century, ships from Portugal took both potato and sweet potato to what was to become Portuguese West Africa. While sweet potato was widely adopted by local farmers, potato growing was confined to the Bié Plateau, where altitude and the Antarctic ocean current produce a moderate climate.

When Angola gained its independence in 1975, the country's annual potato production was about 32 000 tonnes, most of it grown in the highlands of Huambo province.

Production stagnated during the ensuing 27 years of civil war but boomed once peace was restored. FAO data shows that between 2002 and 2007 the area under potato tripled and total output more than doubled, from 260 000 tonnes to a record of 615 000 tonnes.

Annual potato consumption is estimated at 15 kg per capita and is expected to grow rapidly with urbanization. However, production is constrained by low average yields of 5 tonnes per hectare, high post-harvest losses and dependence on imported seed potato. To satisfy demand, Angola also imports potatoes from South Africa.

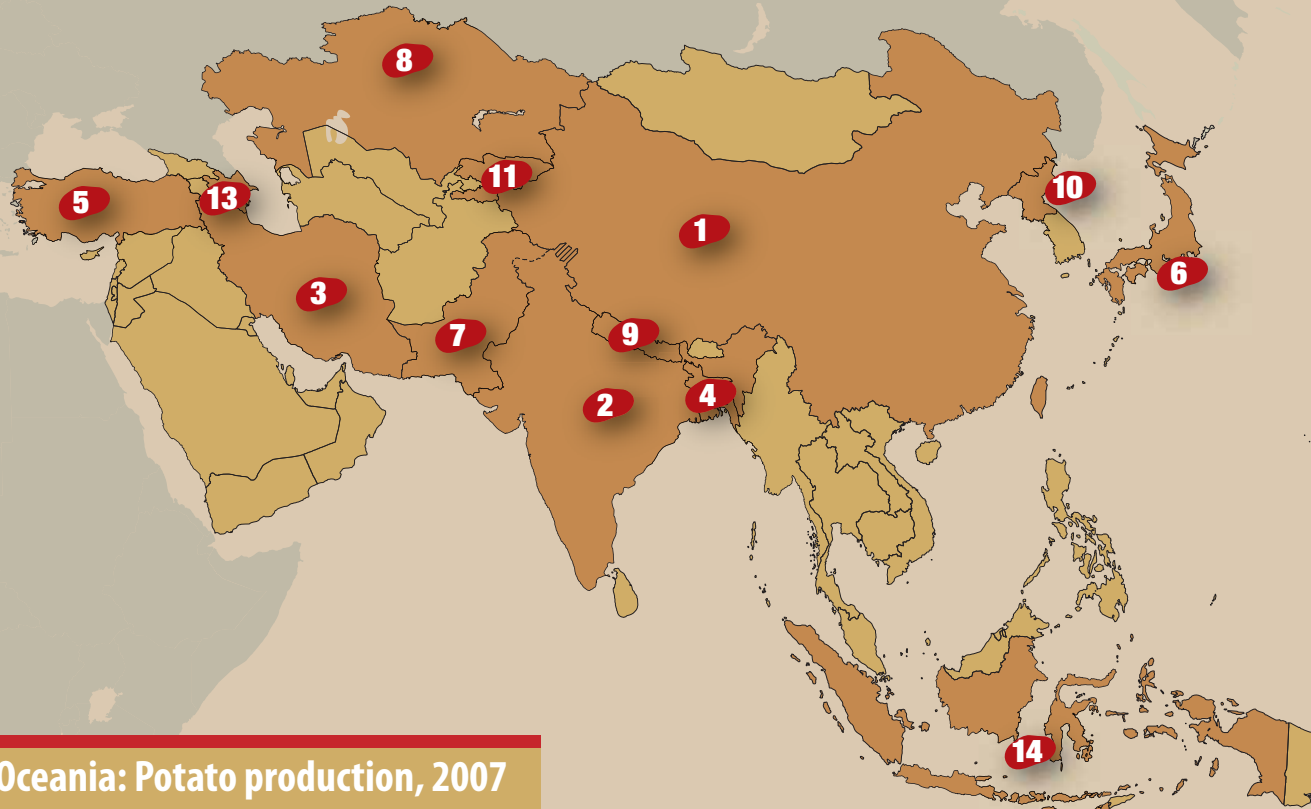
11. Ethiopia



A German immigrant is credited with introducing the potato to Ethiopia in 1858. Over the following decades, farmers in Ethiopia's highlands began cultivating the new tuber – known as *denech* – as an “insurance policy” against cereal crop failures.

Among African countries, Ethiopia has possibly the greatest potential for potato production: 70 percent of its arable land – mainly in highland areas above 1 500 m – is believed suitable for the potato. Since the highlands are also home to almost 90 percent of Ethiopia's population, the potato could play a key role in ensuring national food security.

At present, potatoes are still widely regarded as a secondary crop, and annual per capita consumption is estimated at just 5 kg. However, potato growing is expanding steadily: FAO estimates that production has increased from 280 000 tonnes in 1993 to around 525 000 tonnes in 2007.



Asia/Oceania: Potato production, 2007

country	area harvested (hectares)	quantity (tonnes)	yield (tonnes/ha)
Afghanistan	20 000	300 000	15.0
Armenia	31 612	579 571	18.3
Australia	32 000	1 150 000	35.9
Azerbaijan	67 110	1 037 317	15.5
Bahrain	2	40	20.0
Bangladesh	310 000	4 300 000	13.9
Bhutan	6 200	57 000	9.2
China	5 000 000	72 040 000	14.4
Cyprus	5 500	135 000	24.5
Democratic People's Republic of Korea	190 000	1 900 000	10.0
Fiji	10	80	8.0
French Polynesia	100	900	9.0
Georgia	21 200	229 200	10.8
India	1 600 000	26 280 000	16.4
Indonesia	60 000	1 014 200	16.9
Iran (Islamic Republic of)	210 000	5 240 000	25.0
Iraq	45 000	740 000	16.4
Israel	17 000	658 803	38.8
Japan	83 000	2 650 000	31.9
Jordan	5 000	170 000	34.0
Kazakhstan	155 000	2 414 800	15.6
Kuwait	850	23 500	27.6
Kyrgyzstan	86 430	1 373 780	15.9
Lao People's Democratic Republic	5 500	36 000	6.5
Lebanon	19 000	490 000	25.8

country	area harvested (hectares)	quantity (tonnes)	yield (tonnes/ha)
Mongolia	11 462	114 490	10.0
Myanmar	36 000	510 000	14.2
Nepal	153 534	1 943 246	12.7
New Caledonia	180	2 400	13.3
New Zealand	10 050	505 000	50.2
Occupied Palestinian Territory	2 200	66 000	30.0
Oman	319	9 067	28.4
Pakistan	131 900	2 622 300	19.9
Papua New Guinea	200	900	4.5
Philippines	5 600	72 000	12.9
Qatar	5	45	9.0
Republic of Korea	22 500	625 000	27.8
Saudi Arabia	24 000	570 000	23.8
Sri Lanka	5 330	77 390	14.5
Syrian Arab Republic	30 000	640 000	21.3
Taiwan Province of China	1 600	40 000	25.0
Tajikistan	29 800	659 900	22.1
Thailand	7 981	125 703	15.8
Timor-Leste	400	1 000	2.5
Turkey	158 500	4 280 700	27.0
Turkmenistan	26 800	159 000	5.9
United Arab Emirates	310	7 900	25.5
Uzbekistan	50 500	890 000	17.6
Viet Nam	35 000	370 000	10.6
Yemen	18 276	231 432	12.7
Asia/Oceania	8 732 961	137 343 664	15.7

Source: FAOSTAT

Top producers, 2007

1 China	8 Kazakhstan
2 India	9 Nepal
3 Islamic Republic of Iran	10 Democratic People's Republic of Korea
4 Bangladesh	11 Kyrgyzstan
5 Turkey	12 Australia
6 Japan	13 Azerbaijan
7 Pakistan	14 Indonesia



Asia and Oceania

Asia and Oceania includes the world's potato giant, China, which accounts for more than 20 percent of both the global potato-growing area and the world potato harvest. Several other Asian countries – Bangladesh, India, the Islamic Republic of Iran, Japan and Turkey – also figure in the world's top 20 potato producing countries. Some of the world's best yields are recorded in New Zealand – on average, around 42 tonnes per hectare.

1. China



China is the world's biggest potato producer, with an output in 2007 of 72 million tonnes.

It is also an increasingly important global supplier, with potato exports totalling some 250 000 tonnes (raw equivalent) in 2005.

The tuber probably reached coastal China

aboard ships from Europe during the 17th century and was introduced to central China by Russian traders around the same time. Production has increased nearly fivefold since 1961. Although Chinese potato output ranks behind that of maize and sweet potato, more than 80 percent of the maize and 40 percent of the sweet potato are used as animal feed. Most of the potatoes go directly to human consumption, and each year, the Chinese consume 40 kg per head.

The potato is important to China not only as a staple food, but also as a source of income, especially for farmers in mountainous areas with poor soils. In northern China's Inner Mongolia and Shanxi provinces, sales of potato account for more than half of rural household earnings. To help cope with growing shortages of water and land for agriculture, Chinese scientists have proposed a major expansion of potato cultivation in dry areas, which account for 60 percent of China's arable land.



FENG TANG

Roasting potatoes in Zao Tong, China



Potato harvest
in Tamil Nadu,
southern India

2. India



The potato reached India in the late 16th or early 17th centuries, most likely aboard ships from Portugal. Today, India ranks as the world's third largest potato producing nation, with production in 2007 of around 26 million tonnes.

Between 1960 and 2000, potato production increased by almost 850 percent, partly in response to growing demand from higher-income urban populations. Since 1990, per capita consumption has risen from around 12 kg to 17 kg a year.

In India, the *aloo* is not primarily a rural staple but a cash crop that provides significant income for farmers: the value of the 2005 harvest is estimated at \$3.6 billion and exports totalled about 80 000 tonnes that year. Potato varieties suited to the country's climate – hot summers and short winters – are grown on the Indo-Gangetic plain during the shorter days from October to March, while some year-round production takes place in relatively high altitude areas in the south.

3. Islamic Republic of Iran



A British ambassador, Sir John Malcolm, is said to have introduced the potato to the royal court of Persia during the early 1800s. For a time, the tuber was known as “Malcolm's plum”, but it is called the “earth apple” by today's Iranians.

Iran is the world's No. 12 potato producer and the third biggest in Asia, after China and India. Since 1961, production has increased more than 15 times over. In 2007, the country's farmers achieved an all-time record harvest of 5.24 million tonnes, with per hectare yields averaging 25 tonnes. The potato is one of Iran's leading agricultural exports, with shipments in 2005 totalling around 166 000 tonnes.

Potatoes are grown mostly under irrigation around the southern shore of the Caspian Sea, in the Zagros Mountains, and on the southern lowlands, alternated with wheat, vegetables, sugar beets and fallow in three or four year rotations. Traditional varieties prized for their culinary qualities continue to be grown in the mountainous north.

4. Bangladesh



A British governor promoted potato cultivation in Bengal in the 1770s, and within a century it was a well established garden vegetable. However, large scale production was held back by the lack of suitable varieties: European cultivars were not adapted to the hot Bengali plains.

Today, the potato has become a highly successful October-March winter crop in Bangladesh, with a production value – estimated at \$560 million in 2005 – second only to that of paddy rice. In 2007, Bangladeshi farmers harvested 4.3 million tonnes of potatoes (12 times more than in 1961), which placed the country at No. 14 among the world's potato producers, and No. 4 in Asia.

The potato is usually grown for cash sale, and much of national production is concentrated near the capital, Dhaka, the country's largest urban market. Annual consumption has been growing briskly, from around 7 kg per capita in 1990 to more than 24 kg in 2005.

5. Turkey



In some areas of Anatolia, local potato varieties are still called *ruskartoe*, commemorating the tuber's introduction from the Russian Caucasus in the early 1800s. Potato cultivation has been officially encouraged in Turkey since 1872, and today the country is the Near East's biggest producer after Iran, with output in 2007 of almost 4.3 million tonnes.

Second only to tomatoes as a horticultural crop, the *patates* is grown on an estimated 158 000 ha of land across the country. The Anatolian central plateau, with its hot, dry summers and cold winters, is the most important producing region, accounting for nearly half of the national potato area, while intensive cultivation is conducted on the Aegean and Mediterranean coasts. Yields in 2007 were a high 27 tonnes per hectare.

Turkey's current production hovers at 1990 levels, and is well below the 2000 record harvest of 5.4 million tonnes. Annual per capita potato consumption is contracting, from 63 kg in 1990 to a less than 50 kg in 2006.

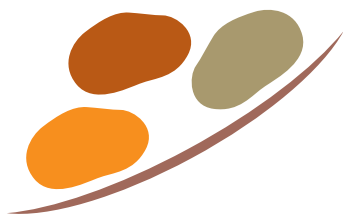
6. Japan



The potato was probably brought to Japan by Dutch traders who established an enclave in Nagasaki early in the 17th century. But widespread cultivation of the tuber did not begin until late in the 19th century, when it proved well suited to the cool summers of the northern island of Hokkaido.

Today, Hokkaido's potato farmers produce yields of more than 41 tonnes per hectare and account for about two-thirds of the national harvest, which totalled some 2.6 million tonnes in 2007. While that placed the country at No. 6 among Asia's potato producers, it was also one of the smallest harvests recorded since the 1960s, when Japan was producing up to 4 million tonnes a year.

Along with the steady decline in production over recent decades, there has been a shift from home preparation to consumption of



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processed potato products such as chips and French fries. To meet domestic demand, Japan imports each year some 650 000 tonnes of potatoes, mainly from China.

7. Pakistan



Although potato was grown on the Indian subcontinent from the late 16th or early 17th centuries, at Pakistan's foundation in 1947, cultivation was restricted to a few thousand hectares and total annual output was less than 30 000 tonnes.

In the decades since independence, the *aalu* has become the country's fastest growing staple food crop. Thanks to strong gains in cultivated areas and average yields – both made possible mainly by irrigation – output rose between 1995 and 2007 from one million to a record of more than 2.6 million tonnes. The lion's share of potato production comes from the Punjab, where spring and autumn crops account for 85 percent of the national harvest.

Apart from some subsistence growers in the north, most Pakistani farmers produce for urban markets rather than household consumption, and the potato has become a significant source of rural income (worth some \$300 million in 2005). At present, annual intake is around 11 kg per capita.

8. Kazakhstan



At the breakup of the Soviet Union in 1991, Kazakhstan was producing annually around 2.5 million tonnes of potatoes from an area of 240 000 ha. In the turmoil of the following decade, there was a steady decline in the size of the potato growing area and in potato output, which dropped to 1.2 million tonnes in 1998.

Since then, production has rebounded, thanks largely to rapid gains in average per hectare yields, which rose from 7.6 tonnes in 1998 to more than 15 tonnes in 2007. In that year, Kazakh potato farmers harvested some 2.4 million tonnes of tubers from 155 000 ha of land.

Today, the potato is Kazakhstan's most important food crop after wheat, with average per capita consumption of a high 100 kg a year. While most potatoes are consumed fresh or used as fodder, recent years have seen strong growth in exports of processed potato products, which rose from 1 000 tonnes in 2000 to more than 15 000 tonnes in 2005.

9. Nepal



The first record of potatoes in Nepal dates back to 1793. Although it remained a relatively minor crop for the next 180 years, some researchers say that its early introduction to the high altitude Himalayas helped fuel the rise of Buddhist civilization in northern Nepal.

In the 1970s, a national potato development programme, aiming at improving the quality of seed potato,



G.M. BAKASH

Potatoes carried to market in Panuty district, Nepal

stimulated a rapid expansion of both cultivated area and production, which increased from 300 000 tonnes in 1975 to a record 1.97 million tonnes in 2006. The potato is now Nepal’s second staple food crop, after rice, and per capita consumption has almost doubled since 1990 to 51 kg a year.

Potatoes are widely grown in Nepal, at below 100 m altitude in the south to as high as 4 000 m in the northern mountains. The tuber is particularly favoured by farmers in high hills areas (roughly 1 800 to 3 000 m), where it is more productive than rice and maize and the cool climate is well suited to production of seed tubers for sale at lower altitudes.

10. Democratic People’s Republic of Korea



The potato was introduced to the Korean peninsula – probably from China – during the early 1800s. It became a staple crop during the Japanese occupation from 1910 to 1945, replacing rice exported to Japan, and saved many farming families from starvation during the Second World War.

The potato remains an essential food security crop in the Democratic People’s Republic of Korea. In 2007, it produced an

estimated 1.9 million tonnes, placing the country among Asia’s top 10 producers. The area under potato has grown from 36 000 ha to almost 200 000 ha since 1960, while potato output has increased fourfold over the past decade.

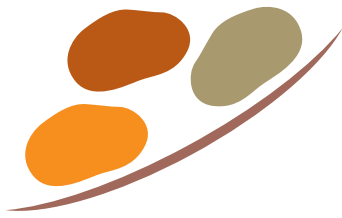
Farmers’ average yields, however, have barely improved over 1960 levels, mainly owing to shortages of agricultural inputs and the lack of virus-free seed potato. To boost production, the government is promoting a “potato farming revolution”. Innovations include a low-input potato-rice cropping system that produces, in a relatively short growing season, 32 tonnes of potatoes and rice per hectare.

11. Kyrgyzstan



Lying at the heart of Asia, along the ancient Silk Road, Kyrgyzstan was introduced to the potato – and its Russian name, *kartófil* – during the 1800s. Although the mountainous country is suitable mainly for grazing livestock, the new crop flourished in the temperate climate of the northern foothills, and today Kyrgyzstanis praise the potato as their country’s “second bread”.

Since 1992, potato production has increased almost fourfold, from 360 000



tonnes to a record 1.37 million tonnes in 2007. By head of population, Kyrgyzstan now ranks as the world's 10th largest potato producer, while its annual consumption of potato – more than 140 kg per capita – is second only to that of Belarus.

Potato growing in Kyrgyzstan is held back by shortages of virus-free seed tubers, improved varieties and agricultural inputs. But the country's rapidly expanding production has attracted investors – recently announced joint ventures with companies from India and the Republic of Korea are building potato processing plants that aim at producing 40 000 tonnes of starch and bio-ethanol a year.

12. Australia



Potatoes were aboard the ship of explorer James Cook when he claimed eastern Australia for Britain in 1770, and their cultivation began along with colonization 18 years later. Today, “spuds” are grown across the continent, from the temperate southern state of Tasmania to tropical North Queensland.

Australian potato production more than doubled between 1960 and 1990 – from 450 000 tonnes to 1.2 million – but since then output has stabilized at an annual average of about 1.3 million tonnes. Potatoes are the country's most important horticultural crop, accounting for more than 40 percent all vegetables grown. Some 60 percent is processed into frozen products and crisps, while about 37 percent is marketed fresh.

Competition from foods such as pasta and rice has made recent inroads into the fresh potato market, and FAO estimates that between 1995 and 2005 annual per capita consumption of potatoes slipped from 55 kg to 53 kg.

13. Azerbaijan



Azerbaijan became part of the Russian empire in 1828 and was a Soviet republic from 1920 to 1990. During that time, rice, which had been traditionally cultivated in the foothills of the Caucasus mountains, gave way to potato (known as *kartoşka*) in both agriculture and Azerbaijani cuisine.

Today, Azerbaijan continues to expand its potato production. Since 1992, the area under potato has tripled, while yields have more than doubled. As a result, the national harvest grew from 156 000 tonnes at the beginning of the 1990s to a record 1.1 million tonnes in 2006, only slightly less than wheat production (rice output in 2006 was just 5 000 tonnes).


Potato yields average around 17.5 tonnes per hectare, but improved management techniques recently introduced by experts from Israel have boosted output to more than 50 tonnes in some areas. Azerbaijanis currently consume around 82 kg of potatoes per capita per year and, to meet demand, the country recently increased imports of potatoes from Russia.



NIJR MUHAMMAD SYARIFUDDIN

*In the highlands
of Java, Indonesia*

14. Indonesia

 The Dutch East India Company brought potatoes to West Java around 1795, and within 15 years the *kentang Belanda* (or “Dutch tuber”) was being grown by Batak farmers in the highlands of northern Sumatra.

Today, Indonesia is the biggest potato producer in southeast Asia. Between 1960 and the mid-1990s, the country’s potato output grew at a rate of almost nine percent per year, and since 2003 annual production has averaged more than one million tonnes.

Potato is cultivated throughout the archipelago, in highland areas of between 800 and 1 800 m, mainly by small scale farmers.

Potato growers are largely dependent on seed tubers imported from Germany and the Netherlands. While some potatoes are grown for export, mainly in northern Sumatra, the bulk of Indonesia’s potato harvest is destined for fresh consumption in large urban areas. Indonesia imported some 32 000 tons of potatoes in 2006 mainly for processing into food products.



Europe: Potato production, 2007

country	area harvested (hectares)	quantity (tonnes)	yield (tonnes/ha)
Albania	8 200	154 900	18.9
Austria	22 675	668 755	29.5
Belarus	412 553	8 743 976	21.2
Belgium	68 106	2 877 685	42.3
Bosnia and Herzegovina	41 291	387 239	9.4
Bulgaria	22 427	290 553	13.0
Croatia	17 355	296 302	17.1
Czech Republic	31 908	820 515	25.7
Denmark	41 200	1 625 600	39.5
Estonia	11 150	191 754	17.2
Faroe Islands	100	1 400	14.0
Finland	27 300	701 600	25.7
France	145 000	6 271 000	43.2
Germany	274 961	11 643 769	42.3
Greece	35 500	830 000	23.4
Hungary	25 400	531 300	20.9
Iceland	712	13 000	18.3
Ireland	12 300	454 800	37.0
Italy	71 968	1 837 844	25.5
Latvia	40 300	642 000	15.9
Lithuania	52 800	576 100	10.9

country	area harvested (hectares)	quantity (tonnes)	yield (tonnes/ha)
Luxembourg	600	20 200	33.7
Malta	700	14 146	20.2
Montenegro	10 000	130 000	13.0
Netherlands	161 000	7 200 000	44.7
Norway	14 421	318 357	22.1
Poland	569 600	11 791 072	20.7
Portugal	41 400	638 900	15.4
Republic of Moldova	353 500	199 000	0.6
Romania	267 035	3 705 694	13.9
Russian Federation	2 851 660	36 784 200	12.9
Serbia	81 379	743 282	9.1
Slovakia	17 769	287 667	16.2
Slovenia	5 736	131 050	22.8
Spain	89 000	2 502 300	28.1
Sweden	28 522	790 100	27.7
Switzerland	11 800	490 000	41.5
The Former Yugoslav Republic of Macedonia	14 000	180 900	12.9
Ukraine	1 453 300	19 102 000	13.1
United Kingdom	139 000	5 635 000	40.5
Europe	7 473 628	130 223 960	17.4

Source: FAOSTAT

Top producers, 2007

1 Russian Federation	8 United Kingdom
2 Ukraine	9 Romania
3 Poland	10 Belgium
4 Germany	11 Spain
5 Belarus	12 Italy
6 Netherlands	13 Denmark
7 France	

Europe

For most of the 20th century, Europe was the undisputed world leader in potato production. While that honour has now passed to Asia, seven European countries are among the top 10 global producers. The continent also has the highest level of potato consumption in the world (almost 90 kg per capita per year). Many western European countries are shifting from potato growing to processing and production of seed tubers for export.

1. Russian Federation

 Legend has it that Czar Peter the Great, on his voyage through western Europe in 1697, sent home Russia's first bag of potatoes. But for more than a century afterwards, the new tuber was widely considered poisonous and shunned as "the devil's apple".

When Russian farmers finally warmed to the potato, in the mid-1800s, there was no stopping them. By 1973, Russia was producing, along with the other then-Soviet republics of Belarus and Ukraine, more than 100 million tonnes of potatoes a year. Since then, the area dedicated to potato has fallen steadily, and Russia's annual production over the past 15 years has stabilized at around 35 million tonnes.

Nevertheless, the Russian Federation remains a "potato giant", with output second only to China in 2007, and the average Russian consumes a hearty 130 kg of potatoes a year. More than 90 percent of Russian

potatoes are grown on household plots and private farms, with average yields of 13 tonnes per hectare. Pests and diseases are a major problem: as much as 4 million tonnes are lost annually to Colorado beetle, late blight and viruses.



MARIA KUSHICHEVA

2. Ukraine

 Although potatoes have been grown in Ukraine since the 18th century, the crop adapted slowly to the Ukrainian climate and was initially used mainly to produce starch and alcohol. It was only during the 20th century that the crop came to be widely cultivated for food, to the point that it now revered as the country's "second bread", and potato-filled *perogie* dumplings are a favourite national dish.

Ukraine is the world's No. 5 producer of potatoes, after China, the Russian Federation, India and the United States of America, and

The Russians call it kartófil



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treasure*

consumes per capita a very high 136 kg a year. Around half of the country's 1.5 million hectares of potato farms are located on the black soils of the forest-steppe zone in central Ukraine, although the best yields are obtained in the Polesye wetlands of the north.

Production in 2004 reached a record 20.7 million tonnes, with average yields of around 13 tonnes per hectare. Despite its great production volumes, however, Ukraine is not a potato exporter: a large part of the crop is lost each year to pests – mainly the Colorado potato beetle – and inadequate storage.

*The potato
is Ukraine's
"second bread"*

ALEXEI MELNIK



3. Poland



The Polish King John III Sobieski is credited with having introduced potatoes – known initially as *amerykany* (from “America”) – to his countrymen in the mid-1600s, after a visit to Vienna. Thus began a love affair that was to make Poland one of the 20th century's giants of potato production.

By 1970, the country was harvesting more than 50 million tonnes of potatoes a year, a quantity bettered at the time only by the Soviet

Union. Today, Poland still ranks among the top 10 world producers. However, harvests have declined in recent years, slipping from 36 million tonnes in 1990 to 24.2 million tonnes in 2000, then plummeting to a record low of less than 9 million tonnes in 2006. The 2007 harvest of almost 11.8 million tonnes was a welcome “return to form” for Polish production.

Ziemniaki are at the heart of Polish agriculture, grown by an estimated 2.2 million farmers using 10 percent of the total area for field crops. By recent estimates, almost half of the potato crop is used as farm animal feed, while 25 percent goes to human consumption, which was around 130 kg per capita in 2005.

4. Germany



Taken to Germany at the end of the 1500s, the potato was grown almost exclusively as animal feed for the next 200 years. But, after a severe famine in the 1770s, German monarchs – notably Frederick the Great of Prussia – promoted the *kartoffel* as a staple food crop as well.

Today Germany is the world's seventh largest potato producer, and the biggest in western Europe, with output in 2007 of just over 11.6 million tonnes. Even so, German potato production has been falling since 1960 – at that time, the harvest was almost 33 million tonnes and potato growing occupied 10 percent of all arable land, compared to less than three percent today.

Germany is a major potato processor and exporter. In 2005 it processed 6.5 million



tonnes of potatoes, including 3.3 million tonnes transformed into potato starch, and exported 1.3 million tonnes of fresh potatoes and 2 million tonnes (primary equivalent) of processed products. It is also a leading importer of early potatoes (nearly 550 000 tonnes, mostly from France, Italy and Egypt, in 2005).

5. Belarus



Belarusians love their potatoes. They consume more per head than any other country – an estimated 180 kg, or almost half a kilogram a day. The potato is believed to have been introduced to Belarus from the Netherlands, and by the 1800s had already become a staple food crop and the heart of the country's cuisine.

Today, Belarus ranks eighth among world potato producing countries, and its annual output – 8.7 million tonnes in 2007 – is about twice that of wheat and barley combined. Over the past 15 years, the country's harvested area has shrunk, from 780 000 ha to 400 000 ha, but production has held steady at an average of 8.6 million tonnes annually, thanks to yield gains.

During the Soviet era, Belarus bred improved potato varieties that were grown

on a third of all lands under potato in the USSR, and exported more than 500 000 tonnes of fresh potato and up to 300 000 tons of seed potato. Those days are now past: in 2005, potato exports amounted to less than 17 000 tonnes.

6. Netherlands

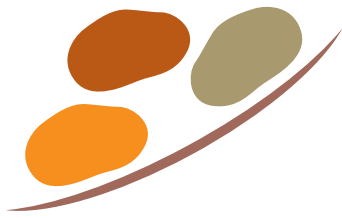


Within a century of its introduction to the Netherlands, in the 1600s, the potato had become one of the country's most important food crops. Today, the Netherlands ranks among the world's top 10 potato producers, with a harvest in 2007 of 7.2 million tonnes.

While potato production is declining in most of Europe, the Dutch still plant almost 25 percent of their arable land – some 160 000 ha – with *aardappel*, and have achieved world record average yields of more than 45 tonnes per hectare. The potato sector is highly mechanized and draws on a list of some 250 approved varieties.

Only half of the Netherlands' potato crop is grown directly for food – around 20 percent is seed potatoes, and the remaining 30 percent is processed into starch. About 70 percent of Dutch ware potatoes is exported in the form of fresh tubers and potato products, such as chips and flour. The

**The Netherlands
has achieved world
record yields**



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treasure*

Netherlands is the world's major supplier of certified seed potatoes, with exports of some 700 000 tonnes a year.

7. France



The *pomme de terre* was introduced to France at the beginning of the 17th century, but its true value as food was not recognized until the late 18th century, when a renowned scientist, A.A. Parmentier, recommended it as the solution to endemic famines that were then devastating the country.

Potato cultivation took off, with output rising from 1.5 million tonnes in 1803 to 11.8 million in 1865. Production reached its zenith in 1960, with a harvest of around 14 million tonnes. Since then, there has been a steady decline, with the 2007 harvest totalling just under 6.3 million tonnes. Some two million tonnes of France's potatoes are destined for the domestic fresh market, and one million tonnes for the processing industry. France is Europe's No. 1 exporter of fresh potatoes, with nearly 1.5 million tonnes shipped in 2005/2006, and dedicates some 14 500 ha for production of potato seedlings.

Today, the potato still has an important place in the national diet: the French consume each year nearly 30 kg per capita of fresh potatoes and another 25 kg of processed products.

8. United Kingdom



The potato reached the United Kingdom towards the end of the 16th century and was being grown in London by 1597. The new crop established itself rapidly in Ireland but less so in England and Scotland.

The potato's moment in the United Kingdom came later, during the Industrial Revolution of the 18th and 19th centuries, when the rise of towns – and the new working class – created demand for cheap, energy-rich, non-cereal foods. The rest is history. By 1948, production in England and Wales was peaking with almost 400 000 hectares under potato.

Since 1960, the harvested area has shrunk by half, and the number of registered potato growers from 70 000 to just 3 000. But the United Kingdom still ranks No. 11 among world potato producing countries, recording



LINDA WRIDE

*Fast food kiosk
in Oxford,
United Kingdom*

a 2007 harvest of 5.6 million tonnes and average yields exceeding 40 tonnes per hectare. With annual per capita potato consumption of 102 kg, demand for potato exceeds domestic supply: in 2005, the United Kingdom imported more than 1.2 million tonnes (raw equivalent) of processed potato products.

9. Romania


 Romania is among the world's top 20 potato producers. It is also one of the few European countries where potato production has actually been increasing – from 2.8 million tonnes in 1961 to more than 4 million tonnes in 2006 – while potato consumption per capita has more than doubled since 1990.

The *cartof* was introduced to Transylvania from Germany in the 1700s. Today it is an important crop for Romania's agriculture and

national economy, and for the estimated 2.2 million Romanians who harvest tubers from their own small potato patches each year. Almost all of Romania's potatoes are marketed for fresh consumption, with just 2 percent being processed. In 2005, potato imports totalled more than 140 000 tonnes, while exports amounted to less than 5 000 tonnes.

Romanian researchers are exploring the potential of the potato as a source of ethanol for fuel – tubers produced in the southern zone of Romania under irrigation have yielded enough starch to produce around 4 000 litres of ethanol per hectare.

10. Belgium

 Old documents show that a Belgian official in Mons received potatoes as a gift from a friend of the Vatican ambassador in 1587 (the following year, he sent samples on to a botanist in Vienna). Within a century the Belgians had made a landmark contribution to potato development, with the invention – they claim – of French fries.

Today, Belgium ranks No. 19 among the world's potato producing countries, with output in 2007 of nearly 2.9 million tonnes. Thanks to average yields of 42 tonnes per hectare, the potato is the country's main food crop, even though the cultivated area is less than 5 percent of total farmland.

Less than 15 percent of Belgian potatoes are eaten fresh – about 86 percent are processed into crisps, frozen fries, starch and other products. In 2006, the country exported more than one million tonnes





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of processed potatoes and 21 000 tonnes of seed potatoes. It also imported more than 1.2 million tonnes of fresh potatoes and 140 000 tonnes of potato products, mainly from France, Germany and the Netherlands.

11. Spain



While no one knows the exact date of the potato's arrival in Europe, its entry point was probably Spain's Canary Islands, where *S. tuberosum* was cultivated at least as early as the mid-1500s (later records show that potatoes were served to patients in the Hospital de la Sangre in Seville in 1573).

While initially prized more for its flowers than as a food crop, the *patata* was a mainstay of Spanish agriculture throughout most of the 20th century, with annual production exceeding 5 million tonnes up to the 1990s. Today, however, as elsewhere in western Europe, potato production is on the wane in Spain. In 2007, the country produced 2.5 million tonnes of tubers, while the harvested area has fallen from 270 000 ha in 1990 to less than 90 000.

As a result, Spain is now a major potato importer. Since 1990, annual imports of raw and processed potatoes, mainly from France, Germany, Italy and Morocco, have risen from 395 000 tonnes to 1.2 million tonnes.

12. Italy



In 1565, Spain's King Philip II is said to have sent to Rome a gift of potato tubers for Pope Pius IV, who passed samples on to a cardinal in Belgium. Along with the tubers went their Italian name – *tartufoli* (or “little truffles”) – which, as the samples were cloned and disseminated throughout Europe, was adopted in German (*kartoffel*), Romanian (*cartof*), Russian (*kartófil*) and even Icelandic (*kartafla*).

Although the potato – called *patata* by modern Italians – was a staple food for generations of rural families, potato growing in Italy has been declining since the 1960s, when farmers produced 4 million tonnes from 380 000 ha of land. Large areas unsuitable for potato have since been abandoned, although per hectare yields have increased from 10 tonnes to around 25 tonnes.

Pasta-loving Italy has one of the lowest levels of potato consumption in Europe, less than 40 kg per capita annually. Even so, satisfying domestic demand required imports of more than one million tonnes of raw and processed potato in 2005.

*Harvest in Calabria,
Italy*



13. Denmark



Although the first potato tuber was planted in Denmark's Royal Botanical Garden in 1642, Danish farmers did not start growing it until almost a century later, around 1720. It is believed that farming of potatoes was introduced either from England and Ireland or by the Huguenots emigrating from France.

Potato production in Denmark totalled some 1.6 million tonnes in 2007, with yields of 39 tonnes per hectare. Little more than one third of total output is consumed directly as fresh potatoes. In fact, more than half of Denmark's potato harvest is processed into potato starch and flour, while nine percent is used as seed potatoes for replanting.

Each year, the average Dane consumes about 73 kg of potatoes. While per capita consumption is below that of other European countries, such as Ireland, potatoes are nevertheless an important part of the national diet. Potatoes are almost ubiquitous in Danish cooking, and an essential side dish to every hot meal. Denmark's legendary *akvavit* is distilled from potatoes.



A field of *práta*, Ireland

25. Ireland



No, Ireland is not a *very* big potato producer, but it deserves special recognition. The Irish were the first to give the tuber a truly warm welcome to Europe in the early 17th century, and the *práta* has been an intimate part of the country's history ever since.

It is also associated with a national tragedy. By the 19th century, potatoes supplied 80 percent of people's calorie intake and was a major source of livestock feed. But dependence on the potato proved a double-edged sword: in the 1840s, potato blight destroyed most of Ireland's potato crop, leading to a famine that caused the deaths of one million people and the emigration of millions more.

Today more potatoes are still eaten in Ireland than in most other countries of the world. In 2007, Ireland's 830 potato farmers produced an estimated 455 000 tonnes of potatoes, 85 percent being ware potatoes for consumption, and the rest seed potato for replanting.



Latin America: Potato production, 2007

country	area harvested (hectares)	quantity (tonnes)	yield (tonnes/ha)
Argentina	68 000	1 950 000	28.7
Belize	55	730	13.3
Bolivia	135 600	755 000	5.6
Brazil	142 327	3 375 054	23.7
Chile	54 528	831 054	15.2
Colombia	110 000	1 900 000	17.3
Costa Rica	2 220	53 500	24.1
Cuba	12 000	290 000	24.2
Dominica	12	120	10.0
Dominican Republic	2 450	52 000	21.2
Ecuador	52 000	355 000	6.8
El Salvador	237	5 218	22.0
Guatemala	11 000	300 000	27.3
Haiti	880	10 000	11.4
Honduras	1 350	22 000	16.3
Jamaica	580	9 000	15.5
Mexico	64 709	1 750 797	27.1
Nicaragua	2 400	33 000	13.8
Panama	1 300	26 000	20.0
Paraguay	200	1 300	6.5
Peru	269 441	3 388 147	12.6
Uruguay	7 925	118 362	14.9
Venezuela (Bolivarian Rep. of)	24 552	456 661	18.6
Latin America	963 766	15 682 943	16.3

Source: FAOSTAT

Top producers, 2007

1 Peru	7 Bolivia
2 Brazil	8 Bolivarian Republic of Venezuela
3 Argentina	9 Ecuador
4 Colombia	10 Guatemala
5 Mexico	11 Cuba



Latin America

The potato originated in South America, yet the region has the world's lowest level of potato production, less than 16 million tonnes in 2007. The potato remains a traditional crop for small farmers in the Andean region, where it is cultivated along with potato species unknown elsewhere. In other countries – Argentina, Brazil, Colombia and Mexico – production of *Solanum tuberosum* by large scale commercial growers is increasing.

1. Peru



The potato has been essential to the diet of Peruvians for millennia. Archaeological evidence indicates that the potato was cultivated in the Peruvian Andes 8 000 years ago, and recent research suggests the potato's centre of origin lies in Peru, just north of Lake Titicaca. Today, Peru's farmers cultivate four species of potato: *Solanum tuberosum*, plus three other species exclusive to the Andes.

Peru is also Latin America's biggest potato producer, with a record harvest in 2007 of almost 3.4 million tonnes. Annual consumption is a high 80 kg per capita. The potato is produced mainly by small farmers, at altitudes of from 2 500 m to 4 500 m in the central Andes, while a smaller area in coastal valleys is devoted to irrigated commercial production.

The great genetic diversity found in Peruvian potatoes is considered “under threat” from new commercial varieties that

DANIEL DABOVE



Treasure of Peru

are often grown to satisfy urban consumer preferences. To help conserve the country's rich potato heritage, the Government of Peru created in July 2008 a national register of Peruvian native potato varieties.

2. Brazil



Brazil is the centre of origin of the world's premier root crop, cassava. Yet cultivation of potatoes was virtually unknown until the late 1800s, when European immigrants introduced the tuber to relatively temperate areas of southern Brazil (in the state of São Paulo, potato can be grown and harvested almost every month of the year).

While the potato, known locally as *batata inglesa*, is still a minor crop for Brazilian agriculture, the country ranks as Latin America's second biggest potato producer, with production of more than 3.3 million tonnes in 2007. Over the past 15 years, the country's potato output has grown by an average of five



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**Tuber transport
in Antioquia, Colombia**

percent a year, and average yields have increased from 14 tonnes to 24 tonnes per hectare.

Although few of Brazil's potatoes are exported, annual consumption is estimated at a low 14 kg per capita. But that is expected to change: as one of the world's emerging economic giants, Brazil is considered a prize market for processed potato snacks.

3. Argentina



Although western Argentina lies within the area of origin of wild potatoes, evidence of potato production there dates from the 1870s, when 2 400 hectares were planted with tubers almost certainly imported from Europe.

**At 2 000 m
in the Argentine
Andes**



DUILIO BARRO

Today, potato production is large-scale and highly mechanized, and concentrated around Buenos Aires and Santa Fe.

Over the past 50 years, Argentina's potato output has changed very little: the 2007 harvest of 1.9 million tonnes was only slightly less than that of 1961. Since the early 1960s the national harvest has averaged around 2 million tonnes, with only occasional peaks (in 1998, it reached 3.4 million). Levels of potato consumption – around 44 kg per capita per year in 2005 – have changed little since 1990.

However, yield has improved markedly. Along with a steady drop in the size of the harvested area, from 200 000 ha in 1961 to around 68 000 in 2007, per hectare yields have more than tripled to almost 30 tonnes. In 2005, Argentina exported 33 000 tonnes of potatoes and 4 000 tonnes of potato flour.

4. Colombia



In 1538, a Spanish visitor to the central mountain ranges in present-day Colombia noted that local people cultivated “a kind of earth truffle” – which were probably potatoes. In fact, Colombia lies along the northern edge of the Andean centre of potato origin and domestication.

While the “earth truffle” is still a subsistence crop for many small farmers in Colombia, it is also the focus of the largest commercial potato industry in the Andean region. In 2000, production reached more than 2.8 million tonnes, thanks largely to yields of around 17 tonnes per hectare, far above those achieved in Bolivia, Ecuador



CARLOS ANTONIO MONROY ESCUDERO

Per capita consumption of potato in Mexico stands at 17 kg a year, very low compared to its maize intake of 400 kg. But potato imports from Canada and the USA have grown in recent years, reaching 65 000 tonnes of fresh potatoes and 122 000 tonnes of frozen products in 2006.

and Peru. Since then, the harvested area has shrunk from 170 000 to 110 000 hectares, and production in 2007 stood at 1.9 million tonnes.

Potato is grown mainly at altitudes of 1 800 to 2 300 m in the Cordillera Central and Cordillera Oriental mountain ranges. Since the 1990s, there has been a rapid increase in potato processing, which accounts for 12 to 14 percent of the total harvest.

5. Mexico



The presence of wild potato plants in Mexico indicates that it lies within the potato's area of origin. However, some evidence suggests cultivated varieties were brought there by Spanish conquerors during the 1500s.

Until the early 1960s, potato growing was limited to rainfed areas above 2 000 m in volcanic zones of central Mexico, with annual production of about 300 000 tonnes and yields below six tonnes per hectare. Over the following 20 years, production expanded into irrigated commercial areas in the north and west, where yields today reach 40 tonnes. While the area dedicated to potato has changed little since 1980, average yields have almost tripled since 1961 and production reached a record 1.75 million tonnes in 2007.

6. Chile



Although the potato originated in the Andes, recently uncovered DNA evidence indicates that varieties grown around the world today were developed mainly from Chilean cultivars. While the Andean potato predominated in Europe in the 1700s, germplasm introduced from Chile became predominant in the 1800s.

Chile is the sixth biggest potato producer in Latin America, with a record harvest in 2006 of almost 1.5 million tonnes, on a par with the country's output of maize and wheat. Although potatoes can be grown throughout Chile, production is concentrated in the provinces between Coquimbo, in the north, and Chiloé (including Chiloé Island, where it was already cultivated in pre-Colombian times).

More than half of Chile's potatoes are eaten fresh (consumption is estimated at 51 kg per capita per year, almost unchanged since 1990), while around 10 percent is processed, and 15 percent is used as seed potato. By value, seed potato accounts for almost half of the country's potato exports, destined mainly for Brazil and Venezuela.



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7. Bolivia



Cultivated in the Bolivian Andes for thousands of years, the potato is today the country's most important food crop, along with soybeans. It is grown across some 135 000 hectares of land by an estimated 200 000 farmers, the vast majority of them smallholders who produce mainly for household consumption.

Most farmers rely heavily on traditional varieties that are well adapted to Bolivia's "high climatic risk" (on the *altoplano*, especially, the potato crop is exposed frequently to hail, frost and drought). One such native variety is the hardy "bitter potato", which is cultivated at altitudes as high as 4 300 m and processed into a dried product, *chuño*, that can be stored for up to 10 years.

Over the past decade, Bolivia's potato production has expanded steadily, thanks mainly to higher yields, and stood at 755 000 tonnes in 2007. However, recent growth in imports of wheat and rice is creating strong competition for potato farmers, especially in urban markets.

8. Bolivarian Republic of Venezuela



The northern extensions of the Andes in western Venezuela are home to some 20 species of wild potato and account for most of the country's potato production. In subsistence farming areas between 2 000 and 2 500 m, the potato is the main cultivated crop, while commercial production is concentrated in hilly areas of the state of Lara.

Potato output has grown steadily since the 1960s, and nearly doubled between 1990 and 2007 to a record 450 000 tonnes. Almost all of Venezuela's potatoes are fresh marketed, prompting government efforts to diversify production to varieties suitable for processing. Although per capita consumption is a low 12 kg a year, demand was sufficient to require imports of more than 80 000 tonnes of raw and processed potato in 2005.

Cultivation in the high Venezuelan Andes is threatened by the loss of potato genetic diversity adapted to the region's climatic and ecological conditions. An ongoing programme is encouraging farmers to produce disease-free seed potatoes using local varieties.

9. Ecuador



Ecuador's Andean region lies within the potato's area of genetic diversity, and particularly rich diversity of wild potato is found in central Ecuador. Cultivation is generally undertaken by small farmers with less than five hectares of land, one of which is typically devoted to potato.

Input costs and the higher profitability of other crops has led to marked fluctuations in the country's potato output: over the past decade, total production has fallen from more than 450 000 tonnes to 350 000, while the cultivated area has shrunk from 65 000 ha to around 50 000.

Potato production is becoming more commercially oriented in response to demand from Ecuador's growing urban sector, which accounts for more than 60 percent of the

Potato seller in Antigua,
Guatemala



population. Almost all potatoes produced are consumed locally, with per capita consumption of around 25 kg per year.

10. Guatemala



The highlands of central and western Guatemala offer often ideal conditions for potato growing. At altitudes of between 1 500 and 2 800 m, where average temperatures range from 7°C to 25°C, farmers can harvest potatoes within 100 days of planting, and in frost-free irrigated areas, tubers are cultivated throughout the year.

As a result, Guatemala ranks as Central America's leading potato producer, with a record harvest in 2007 of 300 000 tonnes. Average yields are estimated at more than 27 tonnes per hectare, second only to Argentina in the Latin American region.

The potato has become a valuable cash crop for small farmers, who grow it mainly for sale to urban areas and for export to neighbouring countries. However, Guatemala's potential as a potato producer is constrained by a shortage of certified planting material and fragmentation of supply chains. Recently, the government approved importation of seed potato from Argentina and is promoting the creation of small-scale potato producers' associations.

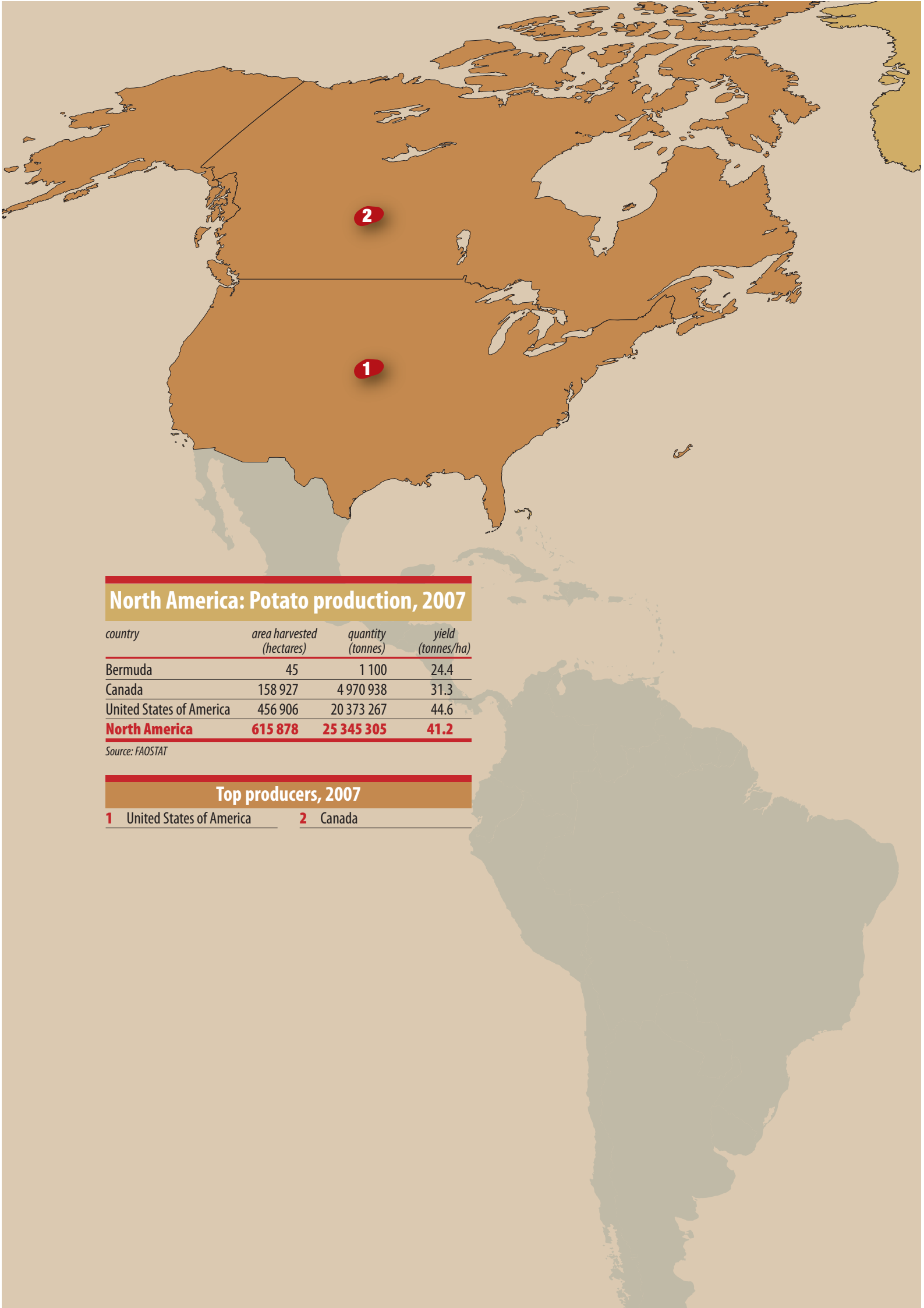
11. Cuba



The first reference to potato in Cuba dates from 1798, when a land-owner complained about a shortage of suitable seed potato. In fact, the lack of varieties adapted to Cuba's tropical island climate discouraged generations of farmers from growing the tubers.

Since the 1970s, production has increased steadily thanks to the use of seed potato imported from France and the Netherlands, which can be reproduced locally for up to three consecutive years. Cuba's potato output reached a record 370 000 tonnes in the year 2000 and, since then, annual harvests have averaged more than 300 000 tonnes.

Yields have doubled since 1990. Today, per hectare output is more than 24 tonnes, amongst the highest levels in Latin America and 50 percent higher than the world average. Production is concentrated in areas around the capital, Havana, and is used mainly for French fries. Annual per capita potato consumption is around 30 kg.



North America: Potato production, 2007

country	area harvested (hectares)	quantity (tonnes)	yield (tonnes/ha)
Bermuda	45	1 100	24.4
Canada	158 927	4 970 938	31.3
United States of America	456 906	20 373 267	44.6
North America	615 878	25 345 305	41.2

Source: FAOSTAT

Top producers, 2007

1 United States of America **2** Canada

North America

North American potato production is concentrated in two countries – the United States of America and Canada, which rank 4th and 13th, respectively, in the potato producing world (their closest regional rival, Bermuda, produced 1 100 tonnes in 2007). Since 1990, both countries have achieved notable increases in yields, which now average around 44 tonnes in the United States. Both are also major exporters of frozen potato products.

1. United States of America



Although the potato was grown in South America for millennia, the first potato patch in North America was only planted in 1719, in New Hampshire (the first French fries

were served at the White House during the Presidency of Thomas Jefferson some 80 years later).

In 2007, the United States harvested 20.3 million tonnes of potatoes, enough to make it the world's fourth biggest producer. Potatoes in the United States are grown in nearly every state, although about half of the crop comes from Idaho, Washington, Wisconsin, North Dakota, Colorado, Oregon, Maine, Minnesota, California and Michigan. Most potatoes are harvested in September and October.

Only about one third of the potatoes grown in the United States is consumed fresh. Around 60 percent of annual output is processed into frozen products (such as frozen fries and wedges), crisps, dehydrated potato and starch, while 6 percent is re-used as seed



Potato harvester in Anza, California

SKYE COMPTON



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potato. Americans eat more than 54 kg of potatoes per capita every year. However, fresh potato consumption has declined from more than 22 kg per person in 1993 to just 16 kg in 2006.

2. Canada

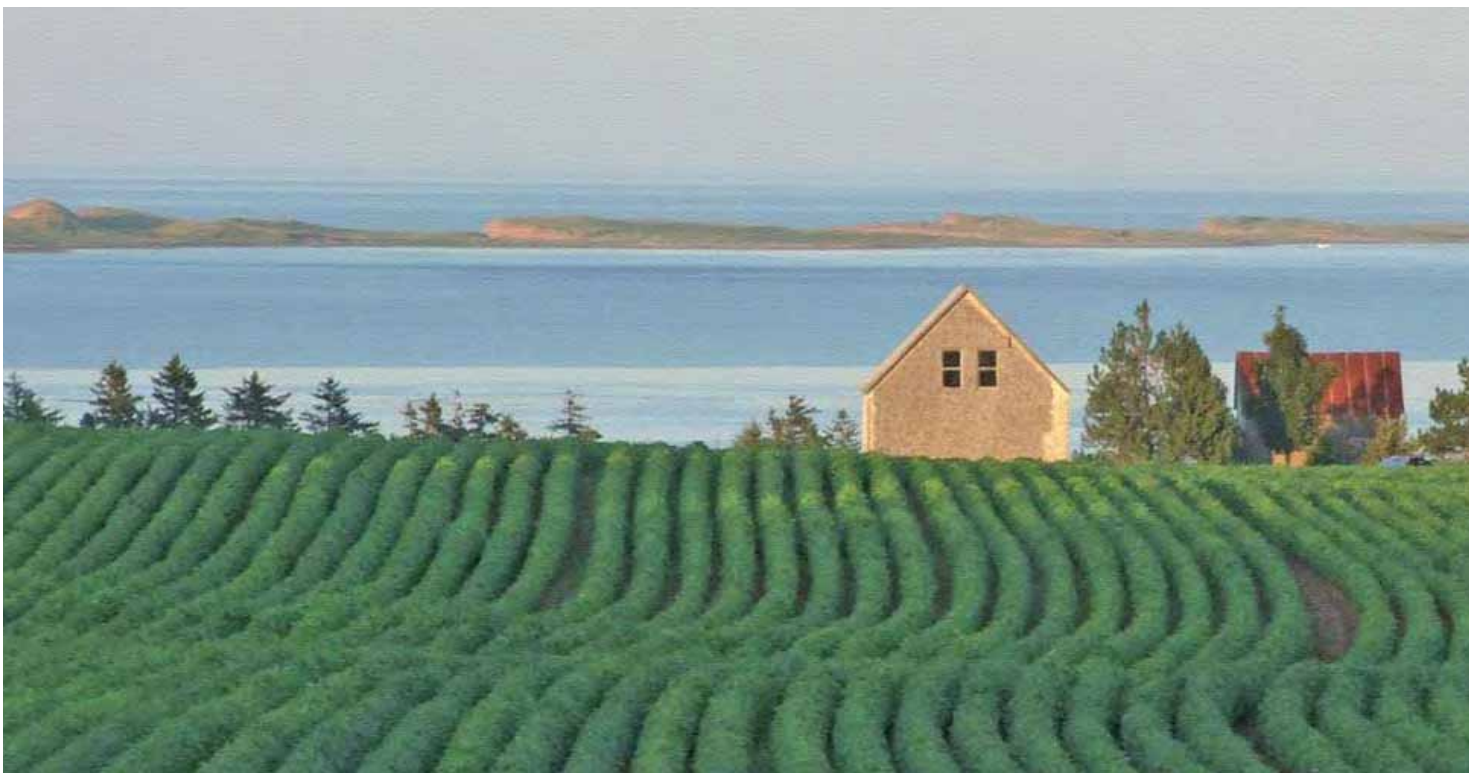


Potatoes were first grown by settlers in New Brunswick, on Canada's Atlantic coast, as early as the mid-1600s. Today, Canada ranks as the world's 13th largest potato grower, with 2007 output of almost five million tonnes. The potato accounts for one third of all vegetable farm cash receipts, or \$846 million in 2007, making it Canada's most important horticultural crop.

*Potato fields
on Prince Edward Island,
Canada*

Since the early 1990s, Canadian potato production has expanded to meet international demand for frozen potato products. In 2006-07, Canada shipped 970 000 tonnes of frozen French fries to foreign markets, making it the second largest French fry exporter after the Netherlands. In the same period, it exported 120 000 tonnes of seed potatoes valued at \$38 million and 470 000 tonnes of table potatoes worth \$140 million.

Potatoes account for about 36 percent of all fresh and processed vegetables consumed in Canada. Despite the potato's popularity, however, total consumption has declined from 76 kg per person in 1994 to 65 kg in 2007.



BRUCE BOUTILIER