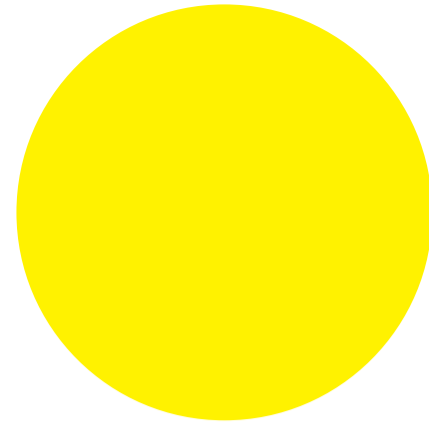


**Quds Force chief: Arouri's comrades to become Israel's 'nightmare'**

7 >



# Iran Daily



irandaily.ir | newspaper.irandaily.ir

Vol. 7479 • Monday, January 8, 2024 • Dey 18, 1402 • Jumada al-Thani 25, 1445 • 100,000 rials • 8 Pages

## Spillover A Source of Growing Concern

Western officials in ME to prevent wider war

7 >



An Israeli military truck transports a tank in northern Israel near the border with Lebanon on January 5, 2024.  
 • JALAA MAREY/AFP

### Disruption in Iran's oil exports to China rejected

The head of the Iran-China Joint Chamber of Commerce on Saturday rejected as "fabrication" a media report that Tehran had withheld oil exports to Beijing, demanding higher prices from its top client. Citing refinery and trade sources, Reuters said on Friday that Iranian sellers had told Chinese buyers early last month that they were narrowing discounts for December and January deliveries of Iranian Light to between \$5 and \$6 a barrel below dated Brent. Those deals had been struck in November at discounts around \$10 a barrel, traders said. An executive at a Chinese company that procures direct from Iran said the OPEC producer was "holding back some shipments," leading to a "stalemate" between Chinese buyers and Iranian suppliers.

2 >



4-5 >

### Kharanaq village, Iran's desert oasis

3 >



### End of an era as Persepolis set to replace Golmohammadi

6 >



### Niavaran to put Iran's 54 caravanserais registered in UNESCO on display

8 >





## NEWS IN BRIEF

### Five countries are destinations of 80% of Iran's exports

The head of the Trade Promotion Organization (TPO) said eighty percent of Iranian exported products are destined for five countries, namely, China, Iraq, Turkey, the UAE and India.

Mehdi Zeyghami pointed to the significance of increasing the export of technology-based products with higher added value, and noted that the recent conclusion of a free trade agreement (FTA) between Iran and member states of the Eurasian Economic Union is a good opportunity for promoting the competitiveness of industrial and production units, IRNA reported.

Speaking at the 3rd Conference of the Iran Scientific Associations Council, Strategies of the Industrial Development, the official pointed out that the zeroing of tariffs between the two sides has paved the way for entering other markets along with joining the World Trade Organization (WTO).

### Petchem plant development to start in few months:

#### NIORDC

The National Iranian Oil Refining and Distribution Company (NIORDC) managing director said the executive operations of Shahid Soleimani Refinery-Integrated Petrochemical Plant will begin within the next few months.

Jalil Salari, who made the announcement in the signing ceremony of a contract on ceding 450 hectares of the Special Economic Zone in Bandar Abbas, a port city of Iran's southern province of Hormuzgan, added the National Iranian Oil Engineering and Construction Company (NIOEC) carries out the project's assessment and studies, Shana reported. The contract was inked by the Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO) and the Shahid Soleimani Refinery-Integrated Petrochemical Company.

The official said the main goal for the project is to complete the value-added chain, continuing 25 percent of its production capacity will be allocated to petrochemicals and a limited volume of gasoline – around 6.5 million liters – will be produced in the plant while petrochemical and gasoline output could be increased if needed. The expertise and technical know-how of domestic companies, including the National Petrochemical Company (NPC) and knowledge-based firms, will be used to implement project, said Salari.

# Disruption in Iran's oil exports to China rejected

The head of the Iran-China Joint Chamber of Commerce on Saturday rejected as "fabrication" a media report that Tehran had withheld oil exports to Beijing, demanding higher prices from its top client, Citing refinery and trade sources, Reuters

said on Friday that Iranian sellers had told Chinese buyers early last month that they were narrowing discounts for December and January deliveries of Iranian Light to between \$5 and \$6 a barrel below dated Brent. Those deals had been struck in November at

discounts around \$10 a barrel, traders said. An executive at a Chinese company that procures direct from Iran said the OPEC producer was "holding back some shipments," leading to a "stalemate" between Chinese buyers and Iranian suppliers.

Reacting to the Reuters report, Chairman of Iran-China Joint Chamber of Commerce Majidreza Hariri said the oil trade had not stalled, though he confirmed that Tehran's discounts to Beijing had been declining over the past year, IRNA reported.

He said that Iran's oil exports were at their highest, and "fabricated news" would have no effect on the trade. Hariri refused to give details about Iran's discounts to China, saying such information was "secret," and that disclosing it ran counter to the inter-

ests of the country amid sanctions. Alireza Sotoudeh, an energy expert, also believes that given the rise in China's refining capacity and the increase in Iran's oil production, the reports on halting the country's exports to China are not true.



● IRNA

## Turkmenistan, Azerbaijan in talks to resume gas swap via Iran: NIGC



● IRNA

Turkmenistan and Azerbaijan are in talks to solve a problem that has halted a gas swap between the two countries via Iran, announced the National Iranian Gas Company (NIGC).

The halt in the gas swap is temporary as the transfer will be resumed once the problem is resolved, IRNA reported on Sunday, citing the NIGC which is affiliated to the Iranian Oil Ministry. In November 2021, Iran, Turkmenistan and Azerbaijan signed a deal to swap 5-6 million cubic meters of gas per day.

Under the deal, Iran receives gas from Turkmenistan and transfers an equivalent amount to Azerbaijan.

The trilateral deal also helps Iran supply gas to its northern provinces, especially in winter. Iranian Oil Minister Javad Owji indicated in January 2022 that the country has the capacity and infrastructure required to increase the volume of gas swapped with Turkmenistan to 40 mcm per day or 10-15 billion cubic meters per year.

Iran's current administra-

tive government has hailed the gas swap operation with Turkmenistan and Azerbaijan as a major success in the field of energy diplomacy.

Experts say the deal has allowed Iran to deepen its economic ties with the two neighbors. Reports say Iranian state and private firms have signed major deals with counterparts in Turkmenistan and Azerbaijan in recent months.

Leader of the Islamic Revolution Ayatollah Syyed Ali Khamenei said in a meeting with Berdimuhamedow on Wednesday that Iran and Turkmenistan were "like a family" as he voiced support for increased energy cooperation with Iran's northeastern neighbor.

Reports in the Iranian media published in 2022 suggested that Iran is working on similar oil and gas swap arrangements with Russia, a country where energy exports have been targeted by Western sanctions over the crisis in Ukraine.

## MPs vote to enable CBI to restore funds from Bahrain

Iranian lawmakers voted to enable the Central Bank of Iran (CBI) to take the necessary measures in pursuit of Iran's funds from Bahrain's banks.

In an open session of Parliament on Sunday, lawmakers passed a bill put forward by the Economic Committee to refer the dispute between the CBI and the Kingdom of Bahrain to arbitration, IRNA reported.

According to the bill, the CBI will be allowed to pursue the restitution of Iran's funds and claim damages as an investor from Bahrain's banks. In case Bahrain refrains from paying its debts to Iran, the CBI, in cooperation with the Legal Department of the Presidency, would be obliged to take legal action against the banks or the government of Bahrain.

Central Bank of Iran Governor Mohammad Reza Farzin confirmed in September that the Islamic Republic's released funds totaling some \$6 billion have now been transferred to Qatari banks.

Farzin announced the release of Iran's financial as-



● IRNA

sets that had been blocked in South Korea and said the entire funds had been deposited into the accounts of six Iranian banks in Qatar's Al Ahli and Al Dukhan banks. The six Iranian banks namely Keshavarzi, Saman, Pasargad, Tourism, Karafarin and Shahr opened accounts in Qatar after the country's funds in two South Korean banks in Seoul were transferred on August 10 to the account of Swiss National Bank (SNB) for conversion into euros.

"We received an official letter from the Qatari authori-

ties yesterday, according to which the accounts of Iranian banks had been activated, and today, 5,573 billion and 492 thousand euros have been deposited into the accounts of six Iranian banks at two banks, Al Ahli and Al Dukhan," the chief banker said.

Farzin underlined that the whole released funds are regarded as the foreign currency reserves of the Central Bank of Iran and backing for the Iranian Rial and will be spent in accordance with national interests and to strengthen the Rial.

## Iran among top innovative agricultural states in South, Central Asia: Deputy minister

Head of Iran's Agricultural Research, Education and Extension Organization (AREEO) said that according to the Global Innovation Index 2022, Iran was the second most innovative agricultural country in South and Central Asia. Mojtaba Khayyam-Nekouei pointed out that improving the coefficient rate of innovative technologies in the field of agriculture requires the

adoption of modern approaches based on the participation of the elite, reported Tasnim news agency. As a body responsible for the development of technology-based agriculture, the organization uses constructive approaches, patterns and methods to accelerate the process of disseminating innovative technologies in the agricultural sector, he em-

phasized. Khayyam-Nekouei said that "productive innovative farms" are one of the main components of the country's innovative ecosystem in line with the implementation of Article 5 of the bylaw on supporting technology-based and job-generating production in the agricultural and natural resources sector. The productive innovative

farms have been launched to create productive innovative farmers' network using their capacities to accelerate the process of transferring innovative technologies in the production fields, he added. Given the undeniable role of innovation and innovative technologies in promoting productivity in the agricultural sector, different countries in the world have given priority

to supporting the innovative ecosystem to ensure production and use

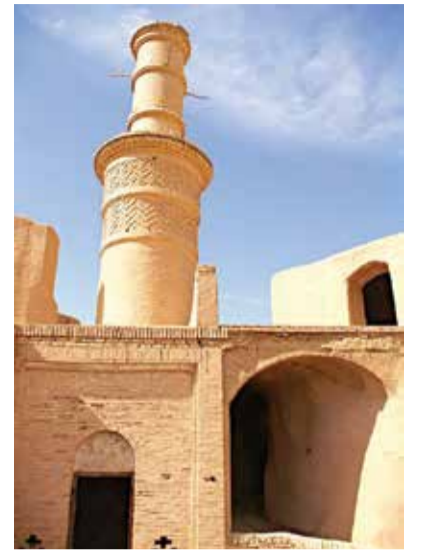
innovative technologies in this sector, the official concluded.



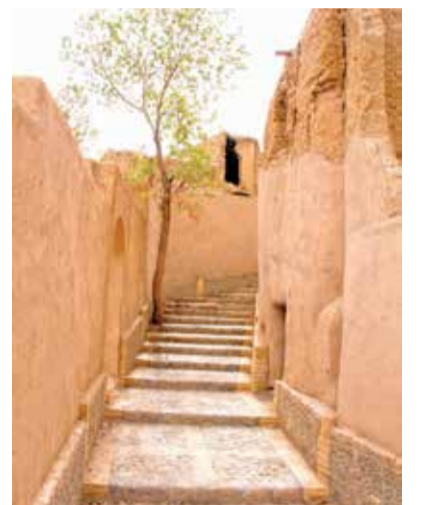
● IRNA



# Kharanaq village, Iran's desert oasis



Minar Jonban  
● [karnaval.ir](#)



Kharanaq Fortress  
● [karnaval.ir](#)

## Iranica Desk

Iran is full of attractions and places that may be less familiar to Iranians but hold great significance for many residents of Western and Eastern countries. In fact, the first photos, films, maps, and travelogues related to the deserts of Iran were prepared and published by these individuals.

One such figure is Sven Hedin, a Swedish explorer and scientist who dedicated a significant portion of his life to traveling, including a journey to Iran and Central Asia. Although the original name of his book is "Overland to India," the translator chose the title "Deserts of Iran" due to the majority of the book focusing on the deserts of Iran, IRNA wrote.

In 59 chapters, the author paints a detailed picture of his journey through the desert areas of Iran, exploring the villages, cities, and various aspects of the region.

Kharanaq village in Yazd Province, nestled in the heart of the central desert of Iran, offers a beautiful setting with natural attractions, making it a suitable destination for winter tourists.

Previously known as Khoranaq or Khornaq, its name is believed to signify the place where the sun rises or the birthplace of the sun.

Upon entering this desert village, seemingly unremarkable at first glance, one



Kharanaq Fortress  
● [karnaval.ir](#)

may be struck by the realization that this area has a history spanning over 4,500 years. Questions naturally arise about the reasons for such enduring settlement in this remote and arid region. What resources sustained life here? What historical significance does this place hold? These questions transform one's perception of Kharanaq, arousing the interest of those with a penchant for research and contemplation.

The village's houses, constructed from mud and clay, greet visitors alongside almond trees and small gardens, adding to the lushness resulting from the surrounding agricultural lands. Deserts in Iran are not just sand and gravel; they also feature mountains, valleys, seasonal rivers, aqueducts, springs, and numerous gardens with tropical trees (such as palm, tamarisk, barberry) and temperate trees like almond,

Kharanaq village  
● [fararu.com](#)

apple, and apricot. Kharanaq is no exception, encompassing all these elements due to its unique climatic conditions. For instance, at its heart lies a historical bridge dating back to the Sassanid or Parthian era, measuring forty meters in length and 7.5 meters in height. This bridge, one of the oldest in Iran, was used to transport water from one side of the river to the other, showcasing a combination of Sassanid and Roman architecture.

The Jaame (Grand) Mosque of Kharanaq, located in the village center, comprises a prayer hall and a small polygonal courtyard, with the exact date of its construction unknown. Inside the mosque, no remarkable architectural feature indicates its construction time.

The Jaame Mosque is a small structure featuring a square Shabestan (an underground space found in traditional Iranian buildings) and adjacent rooms. The mosque's courtyard is linked to a *hosseinieh* (a place where Shia Muslims gather for religious ceremonies) from the southeast. Behind the mosque's *minbar* (pulpit), there used to be a stone tombstone (30x50 cm), dating back to 1105 CE, which is now housed in the Cultural Heritage Organization of Yazd Province. The name of Ali ibn Muhammad Ishaq is inscribed on this stone.

Outside the mosque stands a relatively



Kharanaq Bathhouse  
● [karnaval.ir](#)

tall and slender minaret, notable for its architecture and construction style, with a history even older than the mosque itself. If this immense minaret were located in a major city of Iran, it would rival the Minar Jonban (Shaking Minaret) of Isfahan. Its visible shaking is a source of wonder, and it also served a defensive purpose. This tallest structure in the region, visible from several kilometers away, was used as a lighthouse or observation tower in the past.

Kharanaq boasts an 1800-year-old fortress, which served as a residential area until three decades ago. Other notable attractions in Kharanaq include a bathhouse, a cistern, and a caravanserai, all of which are worth visiting during a pleasant winter trip.

For those seeking a tranquil escape from urban congestion and pollution, a trip to

Kharanaq can be an ideal choice. Accommodations in the caravanserai and the eco lodge of the village offer an opportunity to experience rural life and are accessible to tourists, evoking the historical era when merchants spent time at these lodgings.

The sight of the starry desert sky at night, unobscured by city lights, is truly breathtaking. Additionally, the sunrise and sunset behind the mountains of Kharanaq possess a unique beauty of their own.

The inhabitants of Kharanaq are primarily engaged in agriculture and producing crops such as wheat and alfalfa, much like their predecessors.

Situated 10 hours away from Tehran and centrally located in Iran, Kharanaq is an attractive destination for residents of cities in Isfahan, Chaharmahal and Bakhtiari, Kohgiluyeh and Boyer-Ahmad, Fars, and even Yazd provinces.

# Marmishu Lake, a pristine retreat in West Azarbaijan Province

## Iranica Desk

Situated 45 kilometers west of the city of Urmia in West Azarbaijan Province, Marmishu Lake is nestled in a valley near the Iran-Turkey border. It stands out as one of Urmia's most enchanting destinations, offering a perfect retreat for a weekend getaway and leisure time with friends and family. Set in a mountainous region, the lake is best experienced during the spring and summer months.

Renowned for its pristine beauty, Marmishu Lake captivates every traveler with its breathtaking scenery and tranquil ambiance. Spanning five hectares, the lake reaches depths of 50 to 60 meters and is celebrated for its trout among the local community. Sourced from the Nazlu River, which originates from a mountain and flows through a lush and picturesque gorge, the lake holds a special allure.

An intriguing aspect of this picturesque lake is its origin. A natural dam formed as a result of a seismic event, where a portion of the mountain collapsed, giving rise to the present-day lake. Reflecting its historical roots, the lake derives its name from the leader of the previous Christian inhabitants of Marmishu, Mar Shimun Benyamin.



● [destinationiran.com](#)

En route to the lake, a variety of forest trees, including poplar trees, create a natural protective barrier around the area. The vicinity features an array of flora, such as poplar, walnut, oak, willow, jujube, barberry, almond, hazelnut, pine, and other trees and shrubs, making it an ideal location for beekeeping.

The fauna surrounding Marmishu Lake is characterized by two distinct periods. Presently, the area is inhabited by animals such as bears, foxes,

wolves, and rabbits, while historical records indicate the presence of mountain goats, deer, and leopards. The avian population includes partridges, falcons, quails, and various other species.

The lake was once abundant with trout and whitefish. However, due to uncontrolled fishing and the influx of tourists, these species have faced a significant decline. Regrettably, smelt is no longer found in the area. Efforts to preserve and protect the diverse wild-



● [wikimedia.org](#)

life and aquatic species are crucial for the conservation of Marmishu Lake's ecological balance.

## Nomadic encampments

One of the most captivating sights during this journey is the encampments of the tribes and nomads who have settled in this area. Exploring the nomadic way of life is truly fascinating and can create lasting memories alongside the experience of visiting the lake and witnessing the surround-

ing landscapes.

## Beekeeping

If you're fortunate, you might encounter beekeepers in this region, presenting an opportunity to savor genuine, natural honey and bring it as a delightful gift to your table.

## Marmishu waterfall

In addition to exploring Marmishu Lake, you have the chance to witness a stunning waterfall situated near the lake and along the Nazlu Chay River. This waterfall is seasonal, with water levels increasing during rainy seasons, and its sound can be heard from several hundred meters away. Seize the opportunity to visit the Marmishu waterfall and revel in its unique natural beauty.

## Best time to visit

Given Marmishu Lake's location in the mountainous region of West Azarbaijan Province, it is ideal to visit the lake on sunny days in the spring and summer to fully appreciate the scenery and nature. In winter, the area experiences cold weather and snowfall, with the likelihood of the lake freezing, potentially limiting your enjoyment of the experience.



# A growing butcher's bill



By Binoy  
Kampmark  
Scholar

## PERSPECTIVE

The Bank of Israel Governor Amir Yaron is worried. He is keeping an eye on the ballooning costs of his country's war against Gaza and the Palestinians. Initially, the Netanyahu government promised to increase its defence budget by NIS20 billion (\$5.48 billion) per annum in the aftermath of the war. But a document from the Finance Ministry presented to the Knesset Finance Committee on December 25 suggests that the number is NIS 10 billion greater.

Israel's Finance Ministry is also projecting that the war against Hamas will cost the budget somewhere in the order of NIS 50 billion (\$13.8 billion). NIS 9.6 billion will go towards such expenses as evacuating residents close to the borders in the north and south, buttressing emergency forces, and rehabilitation purposes. The increased military budget is predictable and in keeping with the proclivities of Israel. What is striking is that Prime Minister Benjamin Netanyahu has regarded Israeli defence expenditure as generally inadequate when looked at as a percentage of gross domestic product (GDP). Between 2012 and 2022, military expenditure as a percentage of GDP fell from 5.64% to 4.51%. Doing so enables him to have two bites at the same rotten cherry: to claim he was blameless for that very decline in military expenditure, and to show that he intends to rectify a problem he was hardly blameless for.



Palestinians hold posters of Israeli Prime Minister Benjamin Netanyahu and US President Joe Biden during a demonstration in the city of Nablus on October 29, 2023.   
● NASSER ISHTAYEH/GETTY IMAGES

Even in wartime, Netanyahu is proving oleaginous in his policymaking. The mid-December supplementary budget for 2023, coming in at NIS 28.9 billion, was intended to cover the ongoing conflict with Hamas and Hezbollah. But its approval was hardly universal. Opponents of the budget noted the allocation of hundreds of millions of shekels towards "coalition funds" intended for non-war related projects relevant to parliamentarians and ministers. Benny Gantz's National Unity party, a coalition partner, would have nothing to do with it. Intelligence Minister Gila Gamliel was absent from the vote, while Yuli Edelstein of Netanyahu's own Likud Party abstained. Opposition leader Yair Lapid pointed the finger at the rising budget deficit.

On December 18, Yaron gave vent to some of his concerns. "During this period, more than at any other time, and as investors, rating agencies, financial markets, and the public as a whole are carefully examining policymaking in Israel, it is necessary to manage economic policy — fiscal and monetary — with great responsibility."

Body counts interest Yaron less than budget figures and reputational damage in the markets, though killing Palestinians is proving an expensive business. "The government will have to find the right balance between financing war expenses and the expected increase in the defence budget and the need to continue investing in other civilian budgets, which are already low, in particular in growth engines such as infrastructure and education."

Yaron has every reason to assume that costs will continue to balloon. For one thing, Netanyahu's idea of peace in the current conflict reads like a blueprint for ongoing, lengthy massacre, accompanied by permanent mass incarceration: the destruction of Hamas itself, the demilitarisation of Gaza, and a Palestinian society free of radical elements. This is a nightmare to both humanitarians and the belt-tighteners in the Israeli Finance Ministry.

Notably, the plan says nothing about Palestinian statehood, which, in the scheme of Israel's aims, has been euthanised. Gaza, the designated monstrosity Israel nourished as a supposedly useful tool to keep Palestinian ambitions in check, is to be turned into a prison entity that seems awfully much like it was prior to the October 7 attacks by Hamas. (The cruel, in such cases, lack imagination.)

A "temporary security zone on the perimeter of Gaza and an inspection mechanism on the border between Gaza and Egypt" will be established in accordance with "Israel's security needs". The zone will also serve to prevent "smuggling of weapons into the territory", which sounds much like the original blockade, lasting 14 years, that was meant to achieve the same purpose.

The Israeli PM is, however, promising that the destruction of Hamas will take place "in full compliance with international law", begging the question what sort of international law he is consulting. Given various official statements from Netanyahu's cabinet and the Israeli Defence Forces, it must be either a law of jungle provenance or one applicable to animal kind. That same standard of legal analysis has permitted the generously expansive massacre of over 20,000 Palestinians, a staggering number of them children, the ongoing flattening of Gaza, and the utter destruction of critical infrastructure.

Given that Israeli law, alongside military and administrative policy, does nothing other than encourage the radicalisation of Palestinians and the fertilising of the Jihadist soil, this is charmingly delusional. The current war will simply prove to be the same as previous ones, protean, adjustable, and shape changing. Conflict will simply continue by other means, a continued growth of flowering hatreds, leaving Israel a butcher's bill of shekels and casualties it is only now chewing over.

*This article first appeared on Eurasia Review.*



Governor of the Bank of Israel has every reason to assume that costs will continue to balloon. For one thing, Netanyahu's idea of peace in the current conflict reads like a blueprint for ongoing, lengthy massacre, accompanied by permanent mass incarceration. This is a nightmare to both humanitarians and the belt-tighteners in the Israeli Finance Ministry.





# US extensive weapons stockpile in Israel under scrutiny

## No review on supplying dumb bombs

By Harry Davies and Manisha Ganguly  
Investigations correspondents at The Guardian

### PERSPECTIVE

Their precise location is classified, but somewhere in Israel there are multiple closely guarded warehouses that contain billions of dollars' worth of weapons owned by the US government.

Long shrouded in secrecy, the warehouses are part of an extensive but previously little-known stockpile now facing scrutiny as pressure mounts on the Biden administration over its support for Israel's bombardment of Gaza.

The stockpile was first established in the 1980s to rapidly supply US forces for any future Middle East conflicts. However, over time, Israel has been permitted in certain situations to draw from its extensive supplies. Israel now appears to be receiving munitions from the stockpile in significant quantities for use in its war on Gaza, yet there has been little transparency about transfers from the arsenal.



An Israeli soldier transports a 155mm artillery shell next to a self-propelled howitzer on October 18, 2023, near the Israel-Lebanon border, where Israeli troops were engaged in skirmishes with Lebanon-based Hezbollah resistance group. JALAA MAREY/GETTY IMAGES

In interviews with the Guardian, multiple former US officials familiar with American security assistance to Israel have described how the stockpile enables expedited arms transfers to the Israel Defense Forces (IDF). It can also shield movements of US weapons from public and congressional oversight, they said.

"Officially it's US equipment for US use," a former senior Pentagon official said, "but on the other hand, in an emergency, who's to say we're not going to give them the keys to the warehouses?" Since the emergency of the Hamas attack on 7 October, Israel has dropped tens of thousands of bombs in Gaza, and it has been open about its demand for large amounts of US-supplied munitions.

There are widely held concerns that Israel's bombing of Gaza has been indiscriminate. And with close to 20,000 people dead in Gaza, according to local authorities, the US is facing questions about the quantities and categories of bombs it is providing to Israel and the proportion being made available through the secretive pre-positioned stockpile.

In Washington, lawmakers have raised concerns about proposals by the White House that would relax rules on the kinds of weapons placed in the stockpile, waive spending caps on its replenishment, and give the Pentagon greater flexibility to make transfers from the arsenal.

Josh Paul, who recently resigned from the state department in protest at Washington's continued lethal assistance to Israel, said the proposed changes to the stockpile were part of a drive by the Biden administration to find new ways to supply Israel.

Describing internal US deliberations in October, he said: "There was a press from the White House to say essentially we need to figure out every possible [legal] authority that we could give Israel that would get it weapons as fast as possible."

### An abundance of munitions

The full contents of the pre-positioned stockpile — known as the War Reserve Stocks for Allies-Israel (WRSA-I) — are not publicly disclosed, though former officials say the Pentagon provides Congress with an annual breakdown of what it holds.

The report may be classified, but earlier this year, an unusually candid description of the stockpile's contents emerged when a former US military chief recalled in an op-ed touring the WRSA-I warehouse.

"The current stockpile is full of so-called dumb munitions [those without sophisticated guidance systems]," he said, including "thousands of 'iron bombs' that are simply dropped from aircraft, so gravity can do its work."

In 2020, this abundance of dumb munitions in the stockpile was highlighted by a pro-Israel think tank,

the Jewish Institute for National Security of America, which complained that WRSA-I had become "obsolete" because of its high levels of unguided bombs and shortage of precision-guided munitions (PGMs).

In its latest aerial bombardment of Gaza, however, Israel has relied heavily on these lower-accuracy unguided munitions, which weapons experts say has undercut claims by the IDF that it is trying to minimise civilian casualties.

Israel has not denied its use of unguided munitions, which can pose significant risks to civilians when used in densely populated areas. Its air force repeatedly shared images on social media at the beginning of the offensive of dumb bombs, such as M117s, attached to its fighter jets.

It is not possible to ascertain how frequently M117s were being used in Gaza or the manner of their deployment, but between 40% and 45% of the munitions used by Israel have been unguided, according to US intelligence assessments reported by CNN. The Pentagon did not respond to questions about what proportion of these munitions were from WRSA-I.



Israeli Air Force shared an image of the M117 dumb bomb on October 12, 2023, with the following caption on X: "arming and continuing the series of attacks." X

Unguided munitions, also known as dumb bombs, do not have guidance systems but follow a ballistic trajectory, guided by gravity, and can therefore be imprecise. These munitions, which tend to be based on older designs, have a higher chance of causing civilian casualties when used in densely populated areas like Gaza. Precision-guided munitions (PGMs) are designed to increase the chances of the munition damaging or destroying its intended target while reducing collateral

damage. Greater accuracy is achieved using in-built systems such as laser, GPS, and radar technology to guide the weapon.

An unguided munition can become a PGM when a guidance tail kit — such as a US-made Joint Direct Attack Munitions (JDAM) — is attached, converting the munition into a guided bomb unit (GBU). These bombs can carry payloads of thousands of pounds; heavy GBUs can flatten buildings and are referred to as bunker busters.

A former senior US official familiar with WRSA-I said that when it came to air-to-ground munitions, "we'll give them whatever they need", though they noted that Israel had its own domestically produced supplies of unguided munitions, unlike PGMs for which it largely relies on sales from the US.

US-supplied tail kits allow Israel to convert its stocks of unguided bombs into precision-guided ones, heavy 2,000lb versions of which appear to have been used in airstrikes on the Jabalia refugee camp in northern Gaza. Defence analysts say there is little transparency about the categories and quantities of arms that the US is providing to Israel, but one transfer from WRSA-I emerged

tinghit by errant shells."

Images published by Gaza police's explosive ordnance disposal team last month appeared to show munition fragments of 155mm artillery shells being removed from buildings in Gaza. It is not known whether they were of US origin or from its stockpile. The IDF and Israel's defence ministry did not respond to requests for comment.

### Bypassing controls

Although Israel maintains WRSA-I and pays for its storage, its access to the stockpile is not unlimited, said Sarah Harrison, a former US defence department lawyer who is now an analyst at Crisis Group.

"There's only one other stockpile like this, in [South] Korea, it's very unique and allows for a transfer to happen fast," she said. "But the stockpile does not authorise Israel to just take things and take things for free," as there has to be a legal authority for each transfer of equipment.

Former officials said that where transfers from WRSA-I can differ from regular arms sales between the US and another country was that the equipment can be drawn from the stockpile before the processes that account for the transferred equipment are fully completed.

"We sort of retroactively build a foreign military sales case, which may or may not need to be notified to Congress, depending on what they took and what quantities," said Josh Paul, the former state department official.

Paul, who until October worked on the US's foreign arms transfers, said he was concerned by the expedited process as it could bypass the State Department's pre-transfer controls. "There's no review of human rights, there's no review of regional balance, there's none of the conventional arms transfer policy review that would normally happen," he said. "Essentially, it's take what you can and we'll sort it out later."

Now, the White House is seeking to use its supplemental spending request to further relax rules related to WRSA-I, a move that senators led by Elizabeth Warren have said would harm their ability to "determine whether US assistance is contributing to disproportionate civilian harm".

Brian Finucane, a former legal adviser at the state department, said Israel enjoyed many existing exceptions from procedural safeguards in its defence partnership with the US, and "any additional shortcut in fuelling conflict in the Middle East should be concerning."

He said: "Do these arm transfers make sense strategically? Does pouring additional gasoline on the fire make sense in terms of US national interests or in achieving peace and stability in the region?"

This article first appeared on The Guardian.



## Nadal to miss Australian Open following fresh hip injury



● JONO SEARLE/AAP

BBC – Rafael Nadal will miss the Australian Open and instead return to Spain for treatment on a hip injury he sustained at the Brisbane International.

Nadal, 37, made his long-awaited return after almost a year out with injury this week, winning his first two matches in Brisbane in straight sets. But he was injured in his quarter-final loss to Jordan Thompson on Friday. Nadal said a scan had shown a micro tear on a muscle but not in the same area as his previous long-term injury.

The Spaniard, who had not played a singles match for 349 days prior to his opening win over Dominic Thiem, said the result was “good news” but added he was “not ready to compete at the maximum level”.

“I have worked very hard during the year for this comeback and as I always mentioned my goal is to be at my best level in three months,” 22-time Grand Slam champion Nadal said on social media.

“Within the sad news for me for not being able to play in front of the amazing Melbourne crowds, this is not very bad news and we all remain positive with the evolution for the season.”

“I really wanted to play in Australia and I have had the chance to play a few matches that made me very happy and positive.”

“Thanks all for the support and see you soon!” The Australian Open, where Nadal has triumphed twice, starts in Melbourne on 14 January. Nadal will now focus on returning to fitness in time for the French Open, which begins on 20 May and where he is a record 14-time champion.

His most recent appearance at a Grand Slam was the 2023 Australian Open, when he struggled with injury in a second-round loss to Mackenzie McDonald.

He said in May, after being forced to miss the French Open for the first time in 19 years, that 2024 will “probably” be the final year of his career.



# End of an era as Persepolis set to replace Golmohammadi

● AMIR KHOLOUSI/ISNA

### Sports Desk

Persepolis is up for a new chapter in the Iranian club football as the Persian Gulf Pro League champion has begun the quest for a new head coach to replace Yahya Golmohammadi.

Golmohammadi stepped down from his role after a frustrating 1-1 draw away to Mes Rafsanjan last week for what he labeled as the club’s “financial and infrastructural problems”, and though Persepolis board was quick to reject his resignation, it now seems to be a matter of days before his departure is officially announced, bringing the Iranian’s trophy-laden reign on the Tehran Reds’ bench to an end.

Having joined the club midway through the 2019/20 season, the 52-year-old coach led Persepolis

to a fourth successive top-flight title by the end of the campaign and repeated the success the following season, while steering his team to the final showdown of the 2020 AFC Champions League, only to miss out on a maiden Asian silverware after a 2-1 defeat against Ulsan Hyundai.

The Reds’ title streak came to an end by archrival Esteghlal in the 2021/22 season but Golmohammadi’s side restored domestic dominance a year later, as seven wins in a row – including a victory in last April’s crunch Tehran Derby – helped Persepolis win the league and then a seal a memorable league and cup double in May, thanks to a second win against the Tehran Blues in a month.

However, Golmohammadi’s falling-out with the club CEO Reza Darvish, as well as long-term inju-

ries to Morteza Pouraliganji, Vahid Amiri, and Yassin Salmani – with star player Mahdi Torabi far from his best form – led to a run of inept results and performances in the new season.

The Reds only managed three wins in 12 outings across all competitions between late October and the Mes draw, while crashing out of the Asian elite clubs’ competition at the group stage, which was met by chants from sections of the stands against Golmohammadi in the aftermath of the 2-1 home defeat against Qatari club Al Duhail in December.

### Branko to save the season?

In a statement late on Saturday, Persepolis said the club’s priority would be to continue with Golmohammadi but in case of his permanent departure, the Iranian would

be replaced by a “high-profile foreign head coach.”

With Esteghlal and Sepahan sitting above Persepolis in the league table and Tractor closing the gap on the top three at the mid-point of the season, Reds faithful have every reason to be concerned about the future of their team for the rest of the campaign.

However, they could still be treated to a return to good old days as former head coach Branko Ivanovic is reportedly the favorite to make a dramatic comeback to the Persepolis bench.

Now in charge of Oman for the upcoming AFC Asian Cup in Qatar, the 69-year-old Croatian is widely regarded as the linchpin of the Reds success over the past decade by leading the club to three successive league titles and a first-ev-

er AFC Champions League final in 2018.

Ivanovic, who ended his five-year stint following a domestic double in June 2019 to join Saudi club Al Ahli, told IRNA last week that he is yet to be approached by Persepolis but he would be “open to negotiate with any team” once he sees out his contract with the Persian Gulf country by the end of their Asian Cup campaign.

The other familiar face lined up for the role in the media is Ivanovic’s fellow countryman Dragan Skocic – the manager of Croatia’s under-21 side – who might have personal reasons to return to the Iranian club football after being harshly treated to be sacked as the national team coach only a couple of months before the 2022 World Cup despite a dominant run in the qualifiers.

## Azmoun on Sevilla radar: Report

### Sports Desk

La Liga club Sevilla is eyeing a move for Iranian striker Sardar Azmoun in the January transfer window, according to Italian journalist Fabrizio Romano.

Azmoun, who is set to join the national team ahead of next Sunday’s opening game in the AFC Asian Cup against Palestine, moved to Serie A club AS Roma on a season-long loan

deal from German side Leverkusen last June. The Iranian has bagged one goal and assist apiece in 14 cameo appearances for the Giallorossi across all competition.

Roma boss Jose Mourinho has been reportedly impressed by the Iranian’s contribution, though his €12 million price tag could keep the club from making his contract permanent in the summer, Rome-based website il Romanista wrote on Sunday.



● gazzetta.it



● EFE

## Madrid will be patient with Guler after debut, Ancelotti says

REUTERS – Real Madrid will not rush things with Turkish attacking midfielder Arda Guler, manager Carlo Ancelotti said after the 18-year-old made his long-awaited debut for the Spanish giants in their 3-1 win over Arandina in the Copa del Rey on Saturday.

The Turkey international made an impressive first appearance at Aranda de Duero, nearly six months after his move to Santiago Bernabeu from Super Lig club Fenerbahce. Guler suffered a series of injuries since penning a six-year deal for a reported transfer fee of 20 million euros (\$21.88 million).

The LaLiga leaders cruised into the last 16 with the win against Arandina.

“Guler performed well for an hour. It was important for him to get used to playing with the team. He will gradually build up his fitness level and intensity,” Ancelotti told reporters.

“We have to be patient with him, but he showed his quality in the first half. It’s important that he’s back.”

“He has personality and character, and that’s good. He has good quality with his left foot, but character is an important aspect to do well at Real Madrid.”



# Spillover a source of growing concern

## Western officials in ME to prevent wider war

### International Desk

Fears of the spread of the ongoing war in the Gaza Strip into the entire Middle East region, especially an escalation between Israel and Lebanon, have once again drawn US and European officials to the region.

Since Israel began its onslaught on the Palestinian territory on October 8, resistance movements including Lebanon's Hezbollah, Ansarullah in Yemen, Islamic Resistance in Iraq, and many other groups have been targeting Israel's positions in response to its crimes in the Gaza Strip.

In the latest such attacks, the Hezbollah movement fired more than 60 rockets at an Israeli military base to take revenge on Israel's assassination of the deputy chief of the Hamas resistance movement Saleh al-Arouri and six others in Lebanon's capital on January 2.

Israel's military said it responded with artillery after munitions were fired from Lebanon. Warplanes also hit Hezbollah targets, the military said. Hezbollah and Israel have exchanged near-daily fire over the border since October 8, but the Arouri killing led to fears of a wider conflict.

Nearly three months of cross-border fire have killed 175 people in Lebanon, including 129 Hezbollah fighters, but also more than 20 civilians including three journalists, according to an AFP tally.

In northern Israel, nine soldiers and at least four civilians have been killed, according to Israeli authorities.

US Secretary of State Antony Blinken has already arrived in the region and discussed the issue with Turkish and Jordanian officials.

Blinken's spokesman, Matt Miller, said the US top diplomat is set to arrive in Israel on Monday where he will discuss specific steps to "avoid escalation."



An Israeli tank enters the Gaza Strip on January 7, 2024.  
● MENAHEM KAHANA/AFP

### Netanyahu's political objectives

US officials are concerned that Israeli Prime Minister Benjamin Netanyahu may see an expanded fight in Lebanon as key to his political survival amid domestic criticism of his cabinet's failure to prevent Hamas's Oct. 7 attack, which killed an estimated 1,200 people and resulted in some 240 captives being taken to Gaza.

Israel has made clear that it views as untenable the regular exchange of fire between its forces and Hezbollah along the border and may soon launch a major military operation in Lebanon.

On the other side, Hezbollah's chief has warned that, "Whoever considers going into war against us, will simply regret it."

"If the enemy thinks of waging a war on Lebanon, we will fight without restraint, without rules, without limits and without restrictions," Nasrallah said in a televised speech.

In private conversations, the US administration has warned Israel against a significant escalation in Lebanon. If it were to

do so, a new secret assessment from the Defense Intelligence Agency (DIA) found that it will be difficult for Israel's military to succeed because its military assets and resources would be spread too thin given the conflict in Gaza, according to two people familiar with those findings.

### New fronts against Israel

Iran's officials have also repeatedly warned Israel about the continuation of its crimes in the Palestinian territory.

Days after the beginning of Israel's war on Gaza, Iran's Foreign Minister Hossein Amir-Abdollahian said that fighting against the Israeli regime, which has brought the Gaza Strip under a deadly and destructive war, may expand to new fronts.

"Continuation of these war crimes will be followed by other reactions on other axes, for which the Zionist regime and its supporters would be responsible," he added.

The escalation also forced the European Union foreign policy chief Josep Borrell to visit Leb-

anon on Saturday.

"It is imperative to avoid regional escalation in the Middle East. It is absolutely necessary to avoid Lebanon being dragged into a regional conflict," Borrell said during a press conference in Beirut with Lebanon's foreign minister.

"I am sending this message to Israel, too: Nobody will win from a regional conflict," he added.

His visit was part of a diplomatic push to avoid further regional escalation and call for a solution to the Gaza war which has claimed the lives of at least 22,800 Palestinians so far.

The Health Ministry in Gaza said Sunday that at least 22,835 people have been killed in the besieged Palestinian territory since October 7.

The ministry said in a statement that it had recorded 113 deaths in 24 hours, while a total of 58,416 people had been wounded in the Gaza Strip during the three months of fighting.

### West Bank tensions

Meanwhile, nine people were killed Sunday in the occupied

West Bank, including seven Palestinians who were targeted in an air strike by the Israeli army, sources on both sides said.

Violence in the West Bank has surged to levels unseen in nearly two decades. Israeli forces carry out regular raids in the occupied territory, especially in the city of Jenin and its adjacent refugee camp.

"An Israeli occupation bombardment on a group of citizens killed seven people in Jenin," said the Palestinian Authority-run Ministry of Health, which is based in Ramallah.

Israeli police said an Israeli police officer was killed during an operation at the refugee camp.

"She (officer) was in an operational vehicle that was hit by an explosive device," the force said, adding three other officers were also wounded.

In another incident north of Ramallah, an Israeli civilian was shot dead, the army said.

Since October 7, at least 328 people in the West Bank have been killed by either soldiers or Israeli settlers, according to the Palestinian Health Ministry.

### Quds Force chief: Arouri's comrades to become Israel's 'nightmare'



The commander of the Quds Force of Iran's Islamic Revolution Guards Corps (IRGC) warned of the "nightmare" facing Israel after the Tel Aviv regime assassinated Saleh al-Arouri, deputy head of the political bureau of the Palestinian Hamas resistance movement.

Brigadier General Esmail Qa'ani issued the warning in a letter sent on Sunday to Ismail Haniyeh, head of Hamas' political bureau.

Qa'ani extended congratulations and condolences to Haniyeh over the martyrdom of Arouri in a terrorist Israeli drone strike in Lebanon.

"The world will witness how the comrades of Martyr Arouri turn into the nightmare of the child-killing regime," he wrote.

"Arouri was martyred with a brilliant record in the first, al-Aqsa and al-Quds intifadas," the IRGC commander added, referring to three Palestinian uprisings against the Israeli regime over the past years.

Arouri, 57, was assassinated in Beirut's southern suburb of Dahiyeh on January 2.

He was one of the founders of Hamas' military wing, known as Qassam Brigades, before taking on a political portfolio in recent years.

He was seen as a key player in the movement, masterminding its operations in the West Bank from exile in Syria, Turkey, Qatar and finally Lebanon after long stints in Israeli prisons.

Haniyeh said the cowardly assassination of Arouri proved Israel is seeking to evade defeat and cover up its failure in its ongoing genocidal war on the besieged Gaza Strip.

## 32 suspects arrested over Kerman attack: Prosecutor

All individuals suspected to be involved in the recent terrorist attack in the southeastern Iranian city of Kerman have been arrested, said the city's prosecutor Mehdi Bakhshi.

"Thirty-two people have been arrested in connection with the Kerman crime case and are going through preliminary interrogations," Bakhshi said during a televised interview on Saturday, three days after the terrorist attack, Press TV reported.

The judicial official added that before the terrorist attack, as many as "16 bombs were discovered throughout Kerman Province" whose explosive power was more than the suicide vests used in the Wednesday bombings.

The twin bombings, which were claimed by the Daesh terrorist group, were carried out near the burial site of Iran's late anti-terror commander Lt. Gen. Qassem Soleimani during a ceremony marking the fourth anniversary of his martyrdom. The blasts

left 91 people, including 14 Afghans, dead and 286 others wounded, some of them in critical condition.

Bakhshi dismissed rumors that the explosives used during the attack were placed in trash cans and were remotely detonated, saying both bomb blasts were conducted by suicide bombers, one of whom was from Tajikistan.

Emphasizing that terrorists were not able to plant any explosives inside the cemetery where martyrs are buried, the prosecutor said, "Over the recent months, as many as 23 Daesh terrorists ready to carry out suicide attacks have been arrested across Kerman Province."

The prosecutor noted that the province had to deal with a high number of threats during this year's martyrdom anniversary of General Soleimani, amid reports about potential terror attacks by Daesh and the anti-Iranian Mujahedin-e-Khalq terrorist cult.

"Therefore, the entire province was mobilized" to counter any possible threats, he said.

The Kerman's terrorist attack was the focus of talks between Iranian Foreign Minister Hossein Amir-Abdollahian and his French counterpart Catherine Colonna on Saturday.

During a phone conversation, Amir-Abdollahian called for more efforts by the international community to counter terrorism in all its forms. Iran's top diplomat highlighted the need for more efforts by the international community to counter all forms of terrorism in a more effective and practical manner.

For her part, the French foreign minister reiterated Paris's condemnation of the terrorist attack in Kerman. Voicing concern over the escalation of tensions across the Middle East region due to the ongoing war in the Gaza Strip, she also urged Iran to play its role in preventing further expansion of the regional conflicts.

Mohammad Ali Rajabi  
Cartoonist





## Graphic exhibition on Soleimani



**Arts & Culture Desk**

**IRNA** – A graphic art exhibition by the Revayate Fath Cultural Foundation commemorating the anniversary of the martyrdom of Lieutenant General Qassem Soleimani began in Tehran's Metro on Sunday. The exhibition showcases 25 graphic works from the Visual Arts Society of the Revayate Fath Cultural Foundation. This exhibition will be open to the public until January 17.

## 'Past Lives' wins at Nat'l Society of Film Critics

**VARIETY** – The National Society of Film Critics (NSFC) announced its awardees for 2023's best achievements in film. This year marks the 58th annual awards, which are voted upon by the prestigious organization's slate of film critics, including Variety's chief film critics Owen Gleiberman and Peter Debruge.

Celine Song's 'Past Lives' — the romantic drama about childhood sweethearts, Nora (Greta Lee) and Hae Sung (Teo Yoo), who reunite years later — took home the coveted award for best picture. 'Past Lives' and 'Song' were also nominated in the category for best screenplay. Andrew Scott scored the best actor prize for his performance in 'All of Us Strangers,' while Charles Melton was named best supporting actor for 'May December.'

- License Holder: Islamic Republic News Agency (IRNA)
- Managing Director: Ali Kakadezfuli
- Editor-in-chief: Mostafa Shirmohammadi
- Int'l & National Desk: Javad Mohammad Ali, Zohreh Qanadi, Ebrahim Beheshti, Amir Mollae Mozaffari
- Economy Desk: Reza Abesh Ahmadi, Sadeq Dehqan
- Sports Desk: Amirhadi Arsalanpour
- Iranica Desk: Leila Imeni
- Arts & Culture Desk: Hamideh Hosseini
- Language Editor: Ali Mehran

Islamic Republic News Agency (IRNA)  
 Ali Kakadezfuli  
 Mostafa Shirmohammadi  
 Javad Mohammad Ali, Zohreh Qanadi,  
 Ebrahim Beheshti, Amir Mollae Mozaffari  
 Reza Abesh Ahmadi, Sadeq Dehqan  
 Amirhadi Arsalanpour  
 Leila Imeni  
 Hamideh Hosseini  
 Ali Mehran

Address: 208, Khorramshahr Ave., Tehran, Iran

- Editorial Dept. Tel: +98 21 84711171
- ICPI Publisher: +98 21 88548892-5
- Advertising Dept. Tel: +98 21 88500601
- & Email: irandaily@iranagahiha.com
- Website: www.irandaily.ir
- Email: newspaper.irandaily.ir
- Printing House: irandaily@icpi.ir
- Iran Cultural & Press Institute



# Niavaran to put Iran's 54 caravanserais registered in UNESCO on display

In an effort to showcase and emphasize the importance of Iran's globally-registered caravanse-rais, an event titled, '54 Registered Caravanserais of Iran in UNESCO,' will take place in Tehran's Niavaran Cultural Center from January 11 to 13. Maryam Delafkan, the executive director of the event, highlighted that it was September 17 that 54 caravanserais were inscribed on UNESCO's world heritage list, adding that this achievement is among the significant events that contribute to the cultural heritage

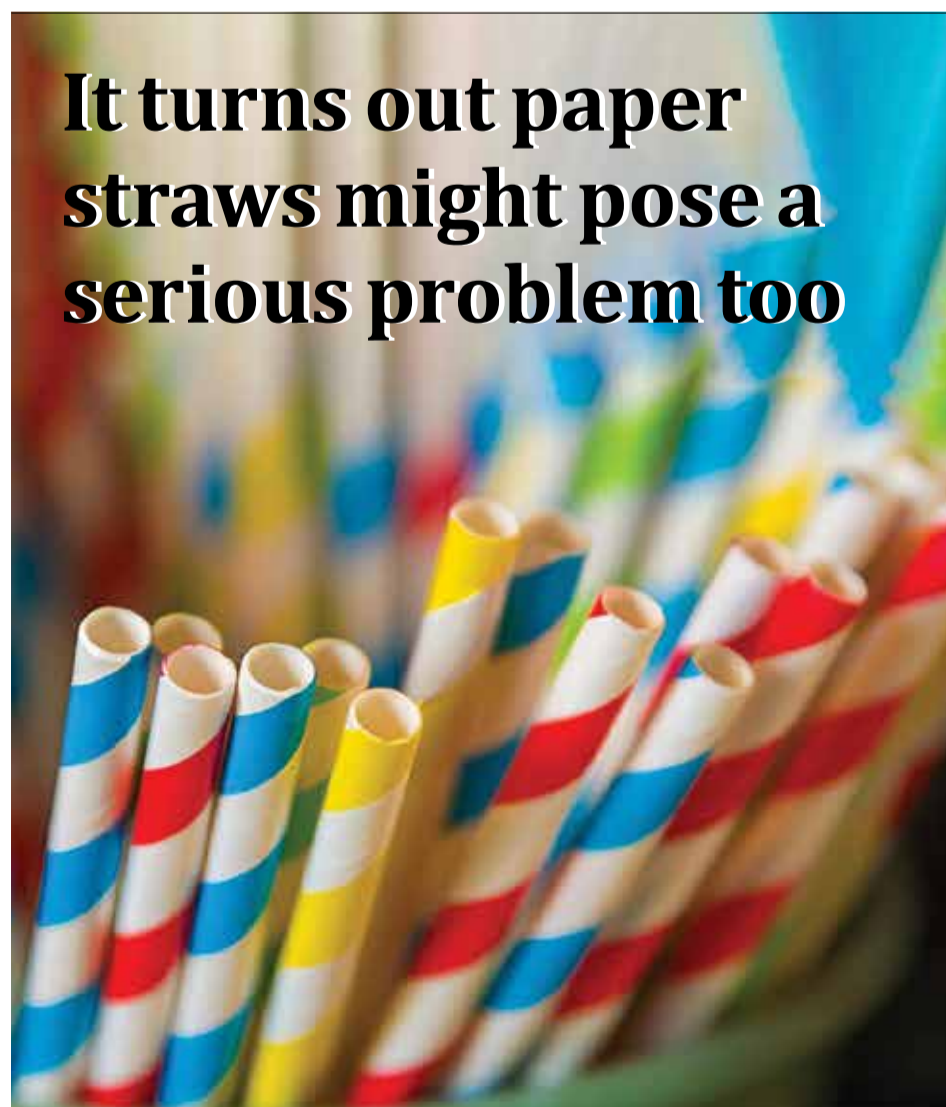
and identity of Islamic Iran, Tasnim news agency wrote. Delafkan provided details about the event, mentioning that the opening ceremony on January 11 will feature officials from the Ministry of Cultural Heritage, Chamber of Commerce, and various embassies. The event will also mark the unveiling of the book, 'Iran's Registered Caravanserais in UNESCO,' featuring photographs and paintings, providing insights into research activities, architectural contributions, and the Leader's

statements on the importance of cultural heritage. Furthermore, Delafkan noted that a 45-minute documentary highlighting architectural luminaries such as Ali-Akbar Nasrabadi, Shahriar Cyrus, Master Dariush Zahedi and others will be introduced during the event. The documentary explores the significance of Iranian caravanserais and their architecture from the Sasanian era to the Safavid era. Following the ceremonies, an exhibition showcasing artworks related to caravanse-rais, including pho-

tographs, paintings, and handicrafts used in these historical sites, will be open to the public January 12 and 13. Delafkan added that Shahab Talaei Shokri, the CEO and Chairman of the Board of the Handicrafts Development Fund, will deliver a lecture on Jan. 12 on the importance of focusing on caravanserais and reviving Islamic civilization. Moreover, a program featuring theatrical and artistic performances will illustrate the evolutionary journey of the Silk Road, incorporating Islamic architectural symbols such



as water, arabesque and Islamic motifs, accompanied by music.



## It turns out paper straws might pose a serious problem too

Paper straws are not quite the eco solution many had hoped for. Not only do these liquid slurping alternatives tend to wilt in a frustratingly fast manner, they contain low levels of forever chemicals, according to new research. How that impacts the health of an individual slurper is unknown, but because forever chemicals — also known as poly- and perfluoroalkyl substances (aka PFAS) — can take centuries to break down to a fraction of their concentration in the environment, these straws are not necessarily 'biodegradable', Science Alert reported. In fact, scientists at the University of Antwerp in Belgium argue that some plant-based and 'eco-friendly' alternatives to plastic may be silently contributing to PFAS pollution. When researchers tested 39 different straw brands made from plastic, paper, glass, bamboo, or stainless steel,

they found PFAS in almost all the materials. Stainless steel was the only consistent exception. Today, many products are made with PFAS — a group of 15,000 synthetic chemicals, some of which may be toxic to animal and human health at high enough concentrations. Scientists are still figuring out at what levels forever chemicals in our surrounds might elevate health risks, but because they can build up in the environment and in animal bodies, scientists worry even low levels of pollution could come back to haunt us. Cutting back on plastic can help but only substantially if the alternatives are PFAS-free. To make paper and bamboo straws water-repellent though, many manufacturers appear to add PFAS. Either that, or the producers are using recycled materials that already contain forever chemicals.

The result is the same. In 2021, scientists in the United States were the first to detect PFAS in plant-based straws, indicating that consumers may be ingesting "a so far undetermined amount of PFAS". Researchers in Belgium have now found the same. Using high-resolution mass spectrometry, the authors analyzed the chemical composition of 20 paper straws, 5 glass straws, 5 bamboo straws, 5 stainless steel straws, and 4 plastic straws. They were looking for 29 different PFAS, specifically. In all but two of the paper-based straws, researchers detected PFAS, although the concentrations were fairly low and varied quite a lot between products. Forever chemicals were also detected in three plastic straw brands, two glass straw brands, and four bamboo brands. Among these straws, the most frequently detect-

ed PFAS, perfluorooctanoic acid (PFOA), has been banned in most countries since 2020. This chemical can accumulate in an animal's body, where it appears to negatively impact development and reproduction at certain concentrations. "Small amounts of PFAS, while not harmful in themselves, can add to the chemical load already present in the body," explains environmental scientist Thimo Groffen from the University of Antwerp. Even after the straws are used, their pollutants could persist. If the straws are recycled, the chemicals could end up in a new product. And if the straws go to landfill or are incinerated, their chemicals will quietly spread in the wind or soil. For consumers worried about the potential environmental or health effects, Groffen suggests using stainless steel straws, or no straw at all.