Iranian Company Develops CT Scan Machine

TEHRAN – **A knowledge-based Iranian company has developed a CT scan machine that would save the country $200,000 per device.**

The device, developed by Behyaar Sanaat Sepahan Co., will be put into operation soon in health centers across the country.

"This product can be used both in the field of diagnosis and as a treatment simulator in radiotherapy," said Farid Nejatbakhsh-Azadani, the CEO of Behyaar Sanaat Sepahan.

The engineers at Behyaar Sanaat Sepahan have worked on the CT scan machine for eight years and have developed 85% of its parts domestically.

The device marks a milestone in achieving self-sufficiency, promoting Iran's scientific standing in the region and the world by turning the country into one of only 10 countries in possession of such production technology.

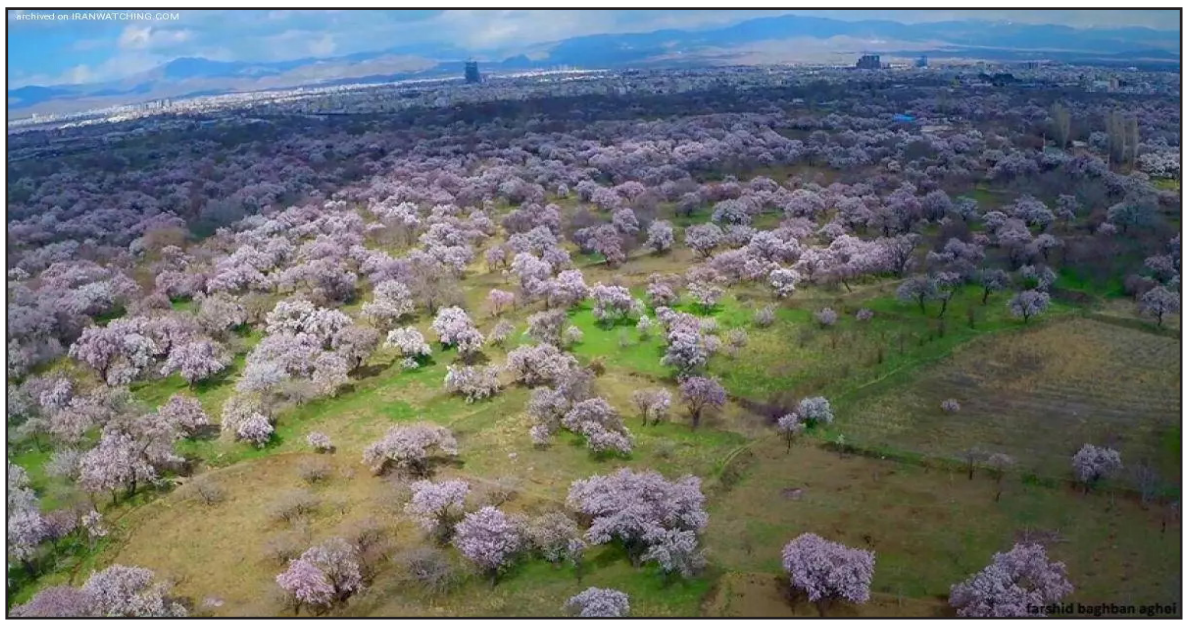
FAO Lists Qazvin, Tuyserkan as Global Heritage Sites

TEHRAN – **The Food and Agriculture Organization of the United Nations (FAO) has formally designated two agricultural systems in Iran as Globally Important Agricultural Heritage Systems (GIAHS).**

The recognition was announced during the GIAHS scientific advisory group meeting held in Rome from November 7 to 10.

The traditional gardens of Qazvin, northwest of Tehran, are a flood-spreading system that date back thousands of years. Situated in the foothills of the Alborz ranges, the creation of the gardens surrounding the city has protected its inhabitants from floods adapting to and taking advantage of the watershed to produce nuts and local delicacies.

By capturing, redirecting and sharing floodwaters, local communities have been able to cultivate and grow fruits all around Qazvin. Today, the system provides food and employment opportunities for people but also cools the temperature of the city and serves to replenish groundwater tables.



This file photo shows almond blossoms in traditional gardens in Qazvin.

The traditional walnut agricultural system in Tuyserkan is known not just for its walnut orchards but also for its delicacies as well as its landscapes and historical monuments. Based on family-farming, the cultivation of walnuts supports the livelihoods of a major part of the households in the area.

This cultivation is mainly developed in valleys and is irrigated using water canals designed at different levels and fed mainly by rivers and springs as well as qanats. Among the local practices is irrigating walnut trees in the cold and frost season, which farmers believe helps to eliminate pests and diseases.

Two Iranian sites of the qanat-based saffron farming system in Gonabad and the grape production system in Jowzan valley in the provinces of Razavi Khorasan and Hamadan had already been granted GIAHS awards.

In 2014, the qanat irrigated system of Kashan in Isfahan province was designated as a Globally Important Agricultural Heritage System.

Under the FAO's GIAHS program, the selection criteria stipulate that sites must be of global importance, have value as a public good, support food and livelihood security, agro-biodiversity, sustainable knowledge systems and practices, social values and culture as well as outstanding landscapes. With the newest addition to the global agricultural heritage systems list, FAO's worldwide agricultural heritage network now consists of 86 systems in 26 countries around the globe.

"Now over 20 years strong, GIAHS has proven to be a great model for showcasing long-standing practices to render agrifood systems more resilient to climate change," said FAO Deputy Director-General Maria Helena Semedo.

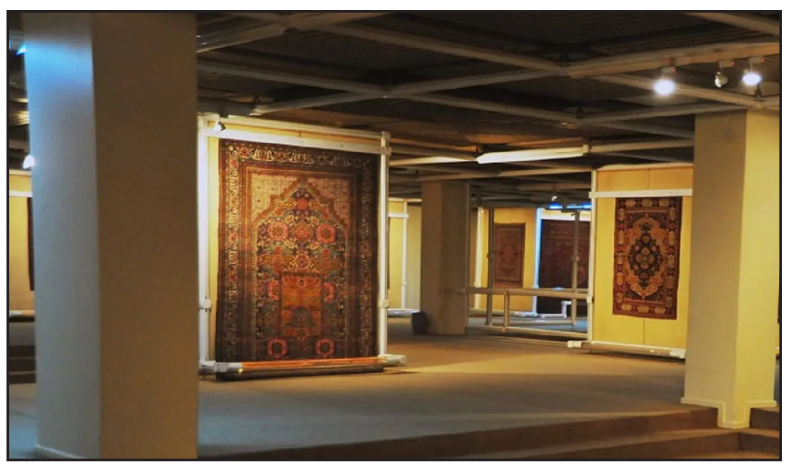
Carpet Museum of Iran

TEHRAN -- **The Carpet Museum of Iran, with its dazzling beauty, is one of the tourist spots located in the Iranian capital.**

The museum was founded in 1976 for research purposes on the records, developments and historical quality of Iranian carpets as an art and industry.

Occasional exhibitions are held in the museum premises to display hand-woven carpets from Iran and other parts of the world, IFP News reported.

The name might be misleading, as the museum showcases a type of flat tapestry-woven handicraft, called kilim, as well.



The two-story building of the museum is an impressive piece of architecture, the exterior of which resembles a carpet-weaving frame.

You can find a plethora of hand-woven rugs, carpets, and kilims in different colors, designs, and weaving patterns in the museum.

It is home to an invaluable collection of carports from the 13th century onwards and is considered a rich research resource for researchers and art lovers.

About 135 pieces of masterpieces of Iranian carpets, woven by top-notch carpet weaving artists from Kashan, Kerman, Isfahan, Tabriz, Khorasan, Kordestan, and many other Iranian cities are exhibited in the hall on the ground floor.

Scientists Unravel Mysterious Deaths of African Elephants

HARARE (CNN) -- **The cause of mysterious mass deaths of African elephants has finally been unraveled — and scientists who authored a new report say that the outbreaks could be more likely to occur amid conditions created by the ongoing climate crisis.**

Thirty-five African elephants in northwestern Zimbabwe dropped dead under baffling circumstances between late August and November 2020. Eleven of the massive herd animals died within a 24-hour period.

"They died over a very narrow window. That's one of the most enigmatic parts of the whole puzzle. That many animals dying quite close together but not right next to each other over such a narrow space of time. It's really to my mind, rather unique, certainly in this part of the world," said Dr. Chris Foggin, a veterinarian at Victoria Falls Wildlife Trust in Zimbabwe, who is a coauthor of the study on the cause of the deaths.

Earlier that same year, about 350 elephants in neighboring northern Botswana also had died suddenly over the course of three months.

Officials and experts were initially at a loss to explain the die-offs, which occurred among Africa's biggest population of elephants. Poaching, poisoning and drought were all blamed.

It turns out a bacterial infection killed the elephants in Zimbabwe, according to the research based on samples taken from 15 of the animals that died in that country.

An analysis, published October 25 in the journal Nature Communications, showed evidence of infection by a little-known bacterium called Bisgaard taxon 45 that caused septicemia, or blood poisoning.

The deaths took place as food and water resources dwindled during the dry season, forcing the elephants to travel increasing distances to look for water and to forage.

The authors said that heat, drought and population density in that area were likely contributing factors to the outbreak.

And the extreme conditions that scientists project will occur with more frequency as Earth warms could mean more elephant deaths in the future.

"It's premature to say that climate change has influenced (this) but it may do so in future if we get more and prolonged droughts, or the rainfall patterns (change) and we have a much harsher dry season," Foggin said. "I do think that if that is the case, then we are more likely to see this sort of mortality event occurring again."

The elephant mortalities in Botswana have been attributed to cyanobacterial neurotoxins, but further details have not been published, the study noted. Foggin said there was no proven connection between the Zimbabwe and Botswana elephant deaths.

The African elephant is a flagship species that faces significant pressure from poaching and habitat loss. Listed as endangered on the International Union for Conservation of Nature Red List, population numbers diminished by 144,000 to about 350,000 between 2007 and 2014, with continuing losses estimated at 8% every year, according to the study.

Some 227,900 elephants live in the Kavango–Zambezi Transfrontier Conservation Area — 500,000 square kilometers (193,051 square miles) of protected land, which is about 90% within Botswana and Zimbabwe.

Evidence of infection was found in six out of the 15 samples, the study authors wrote, which was corroborated by isolating the bacterium in the lab and in-depth genetic analysis.

There was no evidence of toxins, including those from cyanobacteria, or any viral infection.

In addition, no dead scavengers or other wildlife species were reported or observed in the vicinity of dead elephants as would be expected with cyanide or other intentional poisoning, the study noted.

"Although there was not culture or molecular evidence to confirm Bisgaard taxon 45 in more than six mortalities in Zimbabwe, the elephants examined were in good body condition and unlikely to have died of drought-related starvation or severe dehydration alone," the study noted.

No elephants had their tusks removed from poaching, and no external signs of trauma were observed. Tests for anthrax were also negative, Foggin added.

The researchers said they failed to detect the bacteria in the other samples — a fact they attributed to poor sample quality and delays getting the necessary permits that meant it was too late to perform some lab work.

"Most carcasses were degraded at the time of sampling, making the initial sample quality poor. Additionally, exporting wildlife samples for analysis involves obtaining multiple permits from different entities — a process which can take months," the study said.

Bisgaard taxon 45 has previously been associated with tiger and lion bite wounds in humans. The bacteria have also been found in a chipmunk and healthy captive parrots.

The microorganism, which does not have an official name, is closely related to another, more common bacterium known as of Pasteurella multocida, which can cause hemorrhagic septicemia in other animals, including Asian elephants.

That bacterium was also linked to the mass deaths of 200,000 critically endangered saiga antelope in Kazakhstan in 2015, the study noted.

Foggin said researchers had been monitoring wildlife in the area for presence of the bacteria, but no further elephant deaths as a result of Bisgaard taxon 45 had been confirmed since 2020.

Picture of the Day

Autumn on the foothills of Alvand in Hamadan.

Photo by IRNA