which is in charge of authorizing digs, are eager for the return of foreign researchers. "Afghan authorities would like to go back to the prewar situation as soon as possible, for political and ideological reasons that are very understandable," says Verardi. According to United Nations Educational, Scientific, and Cultural Organization (UNESCO) official Jim Williams in Kabul, Information and Culture Minister Sayed Raheen Makhdoom wants to use the foreign efforts to discourage illegal excavations and provide an antidote to the nation's massive loss of cultural heritage.

Regional leaders also are encouraging. Powerful Herat chief Ismael Khan urged a UNESCO delegation in August to help stabilize the famous 15th century Musalla complex, considered the height of Islamic architecture. Mohammad Shoaib Waba, deputy governor of Kandahar, and Haji Hassadullah Khalid, governor of Ghazni, told *Science* they would welcome back foreign archaeologists. Both provinces are rich in ancient sites.

But the decision to dig or not to dig is a luxury affordable only to foreigners. Although Afghan archaeologists doubtless will be invited to participate in others' work, they won't be starting their own digs. Institute of Archaeology chief A. Wesey Feroozi says he hopes that after 3 years or so, he can restart excavations. Until then, "there's just not the money."

–ANDREW LAWLER

NEWS

Leaning Tower Poses a Technical And Political Challenge

Saving a 12th century Islamic tower in central Afghanistan from floods, looters, and roads is no simple task

JAM—Standing at the base of this strange tower, which rises like some ancient Islamic rocket from a remote valley in central Afghanistan, an angry knot of men argue in three languages over its fate. Unknown to the West until the 1950s, the Minaret of Jam has miraculously survived earthquakes, Genghis Khan, and a flood this spring that nearly toppled the intricately decorated 12th century structure.

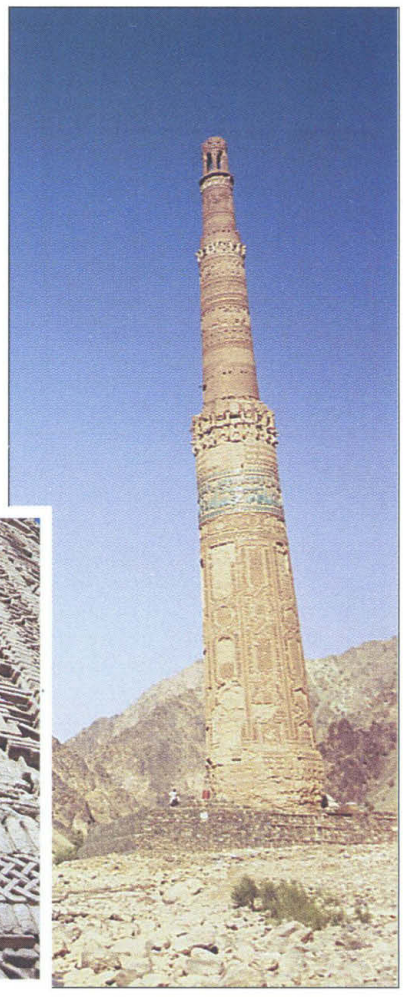
Keeping it from collapsing, however, is not easy in a country plagued for 2 decades by poverty, war, and chaos. Crowding together in the relentless August sun, local villagers and aid workers insist that they need roads to bring food and medicines into this impoverished region. But visiting officials from the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and the Kabul government insist that these roads—which would likely pass close to the minaret in the narrow valley—could easily damage it. They also privately fear that road building will accelerate looting of the area by providing looters access to mechanized tools. After long haggling, a temporary compromise is struck: All roadwork must cease within 1 kilometer of the minaret until a more detailed plan can be worked out.

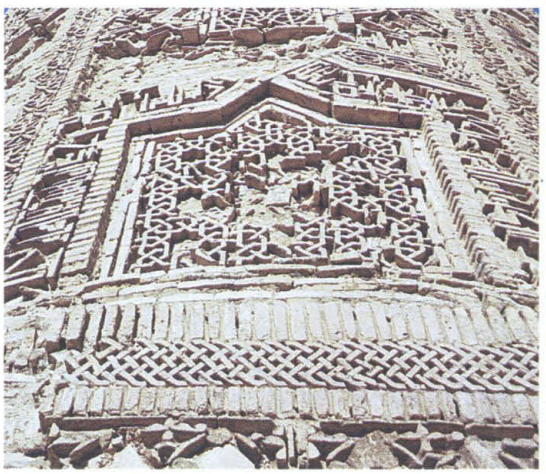
The complicated negotiations during the UNESCO mission are a microcosm of the wider struggle in Afghanistan to honor and rescue its cultural heritage while reviving the economy—and to resolve differences without resorting to the ubiquitous Kalashnikov assault rifles. "Human relations are very delicate in Afghanistan," explains Andrea Bruno, an Italian engineer and UNESCO consultant who has long experience at Jam.

Just the fact that there are negotiations is a sign of progress here. When Bruno visited in 1999, mujahideen and Taliban forces faced each other across the narrow Hari River, which divides the valley. Leaders from the two sides halted their fighting long enough to share tea with him for 45 minutes, but there was no negotiating. "After tea, they went back to fighting," he recalls. Bruno was there because erosion from the Jam River, which feeds into the Hari, was threatening the minaret, which stands at their confluence. Built late in the 12th century, the minaret soars 65 meters above the valley—taller than NASA's space shuttle. The tower features elaborate lacelike brickwork that characterizes architecture from the Islamic Ghorid empire, which was centered here and reached as far as Delhi. Elaborate Kufic script encircles the tower in aquamarine.

The minaret came to the attention of scholars only in 1957, when a French and an Afghan researcher examined the structure. "The sight of this giant decorated tower is just magical," wrote Andre Maricq, the French archaeologist. Its purpose is unknown, but suggestions include a ceremonial gateway to the Ghorid homeland, a victory tower, and part of a mosque long vanished. Or it could mark the site of the legendary city of Firuzkoh, the Ghorid capital, which was destroyed by the Mongols and has never been located. But all remains speculation, as no archaeologist has dug near the minaret.

The erosion and the pronounced lean of the tower alarmed Bruno and UNESCO officials. Once the fighting eased in 2000, UNESCO asked the nonprofit Society





High point. The Minaret of Jam marks the pinnacle of Ghorid architecture.

CREDITS: A. LAWLER

Teamwork. Italy's Andrea Bruno (right) and Afghan colleagues huddle over rescue plans.

for the Preservation of Afghanistan's Cultural Heritage to shore up the banks of the rivers with huge metal baskets, or gabions, filled with stone. They were just in time: On 14 April this year, a flood roared through the valley, carrying tons of debris. "Without the [gabions], the minaret would have been destroyed," says Gulagha Karimi, who heads a local body dedicated to the tower's preservation.

Bruno says that the next step is to examine the minaret's foundations, which lie about 5 meters below the ground, to determine its stability. A geologist did some preliminary work in August, and a UNESCO team accompanied by four Afghan engineers is now at Jam to take exact measurements of the tower's slight lean, which Bruno and others fear has increased in recent years. During the winter, Bruno and an expert on Italy's own leaning tower in Pisa, Giorgio Macchi of the University of Pavia, will examine the data before starting work in earnest next April. Once the engineers understand the tower's foundations and exact position, they will propose how to strengthen the fragile minaret.

Meanwhile, the local, provincial, national, and nongovernmental organizations involved must come up with a new road plan, including where to put a bridge to span the Hari River. The prospect of more road building worries Bruno, who notes that widespread looting in the valley has intensified since 1999. Karimi says that the diggers have found wooden doors, necklaces, and dishes buried near the site. He says he saw one necklace that sold for thousands of dollars.

Work on a road up and down the Hari River, as well as the Jam road, has made "systematic excavation" of the area by looters possible, Bruno says. "They want to build a road to find stuff," he insists. But if archaeologists can move quickly, Bruno predicts that the results will be dramatic. "Jam will be more important than Bamiyan," the famous Buddhist site east of here. University of Rome archaeologist Giovanni Verardi tentatively hopes to conduct a small excavation near the minaret in April.

And international recognition has finally arrived. UNESCO this summer designated Jam a World Heritage Site, the first in Afghanistan, which confers at least paper protection to the minaret and the area surrounding it. Any new structure built nearby—roads or buildings—must undergo strict review. A short digging campaign and paper rules of distant bureaucracy, however, might do little to prevent looting. "There are so many valuables; you just can't stop it," says Karimi.

One piece of good news for Jam supporters is the backing of Ismael Khan, famed warlord, governor of Herat province, and arguably the single most powerful man in Afghanistan. Although Jam technically is not in his province, it is within his control. He told Bruno and other UNESCO officials in a 15-minute audience at his heavily guarded compound that he was worried about the monument's stability and added that the organization's efforts "are good news for us." In a land where raw power is still an important currency, those words might be worth all of UNESCO's paper.

–ANDREW LAWLER

NEWS

'Then They Buried Their History'

Years spent on the front line of a civil war have made a shambles of Afghanistan's once-incomparable National Museum

DARULAMAN—On a frosty February afternoon last year, a group of senior Taliban officials accompanied by a squad of armed religious guards pulled up outside the nearly gutted hulk of the National Museum, a bumpy 10-kilometer drive from Kabul's center. They asked to see the storeroom, where much of what remained of the building's once proud collection of artifacts was held in safekeeping. When unsuspecting employees opened the padlock and swung open the metal door, the visitors began searching for statues.

Then the destruction began, as the horrified staff looked on. "From afternoon until evening they broke statues," says Omar Khan Masudi, the museum's new director. "A few days later, they came back, and they followed the same procedure. They came back many times."

That terrifying time was only the last in a series of blows to one of the world's best collections of Central Asian art, artifacts, and research documents embracing an enormous range of ancient cultures. The museum was both chief repository for the fruits of 60 years of excavations and national display case: Neolithic female figurines, stone Hindu goddesses in togalike robes, intricate ivories combining Indian, Greek, and Chinese styles, gold coins from the time of Alexander the Great, and troves of early Islamic art, as well as an extensive library and a basement full of tens of thousands of pottery shards spanning 10 millennia.

The collection was well protected while the Soviets controlled Kabul in the 1980s. But the fierce civil war that followed placed the venerable building in a hotly contested battleground between rival factions. In the spring of 1993, a rocket ex-

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Reincarnation. A museum worker pieces together an ancient Buddhist statue that was smashed by the Taliban last year.