Article, Published Version

Rogacion, Rosanna C.

Banaue Rice Terraces - An Engineering Marvel Faces Uncertainties

Hydrolink

Banaue Rice Terraces: An Engineering Marvel Faces Uncertainties

Source:
Galimontalbo, Yahoo flickr

Article first published in Suite 101.com www.suite101.com **Reprinted with permission**

The "eighth wonder of the world" faces an uncertain future as modernization lures the Ifuagaos away from the centuries-old rice terraces.

Written by:
Rosanna C. Rogacion
Contributing writer
Suite101.com
imdancingdolphin@yahoo.com
http://www.suite101.com/profile.cfm/roshanna

The Ifugao rice terraces of the Philippines are often referred to as the “eighth wonder of the world.” These rice terraces had been declared a UNESCO World Heritage slte and aside from being a central tourist attraction. the terraces have been the subject of considerable studies by visiting and resident scientists.

The rice terraces cover a vast expanse of cultivated mountain slopes and are a testament to the amount of collective effort used to transform an otherwise unsuitable terrain into one that is both productive and awe-inspiring. Upon seeing the Ifugao rice terraces, one anthropologist declared: “the rice terraces are the most impressive scenes in the Philippines, the highlight of all its marvels.”

Ifugao Province occupies the eastern and central slopes of the Cordillera mountains in Northern Luzon. It is drained by the Magat River, a principal branch of the Cagayan River. The entire area is covered by precipitous highlands, some reaching 2,300 meters. It is on these slopes that the natives used crude tools to carve the terraces which cover an area of 100 square miles. Most are stone - walled and average six to eight feet high. Some walls, however, exceed 25 feet. In all, they span about 400 miles.

What make them so awe-inspiring are their astounding dimensions. Although terracing cultures can be found in other parts of Asia and Central America, only in Ifugao province has such an exceptionally high level of development been achieved.

Henry Otley Beyer was one of the earliest scholars to study Ifugao culture. He postulated that if the walls of the terraces were to be stretched out in one straight line, the total length would be equal to half the earth’s circumference.

Engineering Marvel

The terraces are not only admired for their magnitude. They are also hailed as an engineering achievement. The complex and extensive irrigation systems that have evolved reveal an amazing feat of hydraulic engineering executed by a “primitive people” with tremendous ability in resource management. It took incredible skill and ingenuity to sculpture the mountains, for the natives had to rely mainly on water which they used as carrying agent to transport rocks and huge stones. Nothing was considered non-transportable. Mountainsides were converted into stepped irrigated slopes, and springs, streams and rivers into irrigation canals.

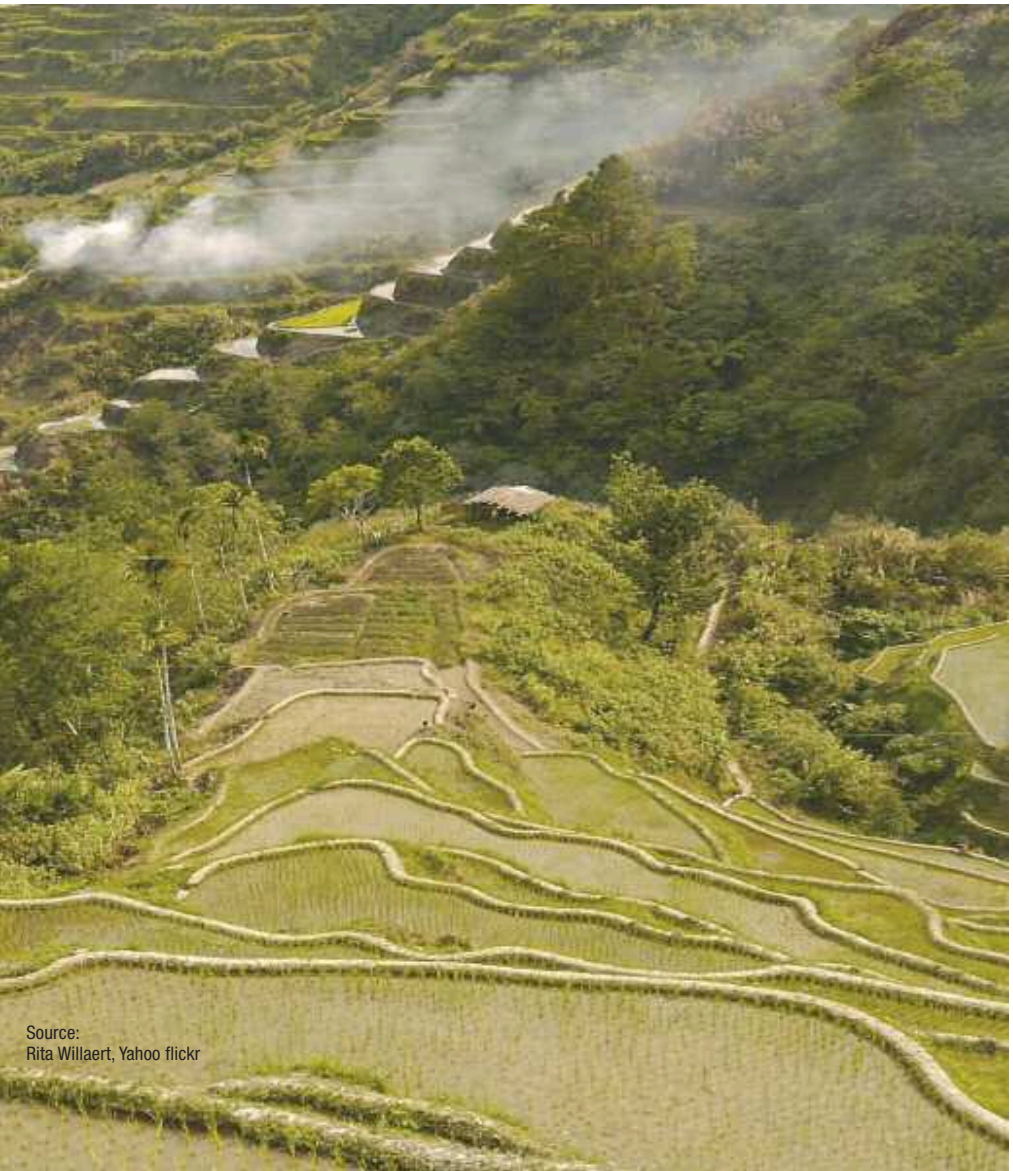
The immensity of the terraces attract the tourists. The complexity of this engineering marvel is what attracts the anthropologists who

want to determine the age of the terraces and the origins of the people who built them.
Radio carbon 14 data on some sites explored by the archeologist Robert Maher support earlier theories that the Ifugao natives have been occupying the mountain slopes for almost 2000 years - could the terraces be 2,000 years old?
As scientists continue to aim at resolving the age of the terraces, archaeologists, engineers, geologists and social scientists continue to arrive.
Indeed, the influx of scientists was such that it led one American archeologist to suggest that "virtually every anthropologist who visits the Philippines must have found himself in Ifugao at some point during their stay."
In the late 1990s officials of the American Civil Engineers (ASCE) conferred the "International Historic Civil Engineering Landmark Award" on the Banaue Rice Terraces - the 19th structure in the world to receive the honor.
Upon conferring the award, ASCE president Luther W. Graef said, "As a civil engineer, I am astounded how the use of civil engineering principles such as hydrology, sustainable development, and efficient use of water resources and water irrigation are all embodied in the careful design of this remarkable ancestral land management program."
Graef added, "Stretching a breathtaking 400 miles long, the terraces represent a rearrangement of the Cordillera mountain range from bedrock to topsoil, and bring forest water from 1,800 meters high, down to the lowest tiers..."

"e8 is a non-profit international company created in response to the 1992 Rio Summit. It is composed of 10 leading electrical companies from the G8 countries"

Rice Terraces Conservation

Those visiting the rice terraces are now confronted by a phenomenon far more pressing than determining the age of the terraces and it is a disturbing occurrence that is more and more visible: the terraces are in a continuing state of decline and neglect. This prompted UNESCO to include the Banaue rice terraces in the list of "World Heritage Sites in Danger."
Farmers have been vacating their rice fields for years. Beyer even went as far as to say the farmers started to leave their terraces 500 years ago. In those early years, however, the problem did not seem immediate because of the more or less equal number of terraces being vacated and new ones being built. Unfortunately, in recent years, the frequency of abandonment has increased while the number of new terraces being built has continued to decline. The old farmers are unable to till their land and their children are lured by city life and have chosen to leave the mountains.
In the past, the government gave incentives to encourage families to continue taking care of the rice terraces. Without the support from the current government, this breathtaking engineering marvel has been slowly losing its luster.
But help is on the way. Early this year, a group of international power companies donated a $1 million hydroelectric project to help save the rice terraces. Japan's Tokyo Electric Power Co., in behalf of e8, built a hydro plant in the Ambangal River.
e8 is a non-profit international company created in response to the 1992 Rio Summit. It is composed of 10 leading electrical companies from the G8 countries and its mission "is to play an active role in global electricity issues within the international framework and to promote sustainable energy development through electricity sector projects and human capacity building activities in developing and emerging nations worldwide."
e8 Executive Director Johane Meagher said, "It is our goal not only to pursue sustainable energy development but to raise awareness of the cultural heritage of one nation. The Ifugao Rice Terraces is a cultural site and must be protected,"
The Ifugao Ambangal hydro plant is expected to generate some $70,000 in annual revenue which will go to the Rice Terrace Conservation Fund.



Source:
Rita Willaert, Yahoo flickr