

# Other Innovations in Dar al-Islam

# 1. The University

The first university in the world was established by a woman, Fatima al-Fihri, in Fez, Morocco in 859 CE. The University of al-Qarawiyyin opened as a mosque and madrasa—a center for higher education, usually for the study of religion and law. It is not only the first university, but also the world's longest running university. Education began at a young age, especially as Muslims are expected to be able to read the Quran.

Universities and madrasas opened throughout the Islamic world, providing studies in law, theology, medicine and mathematics. Cairo's Al-Azhar University (opened 975 CE) was the first to offer postgraduate degrees such as doctorates. Universities also opened in Seville, Cordoba, Baghdad, and Damascus and many other Islamic cities.



The University of al-Qarawiyyin in Fez

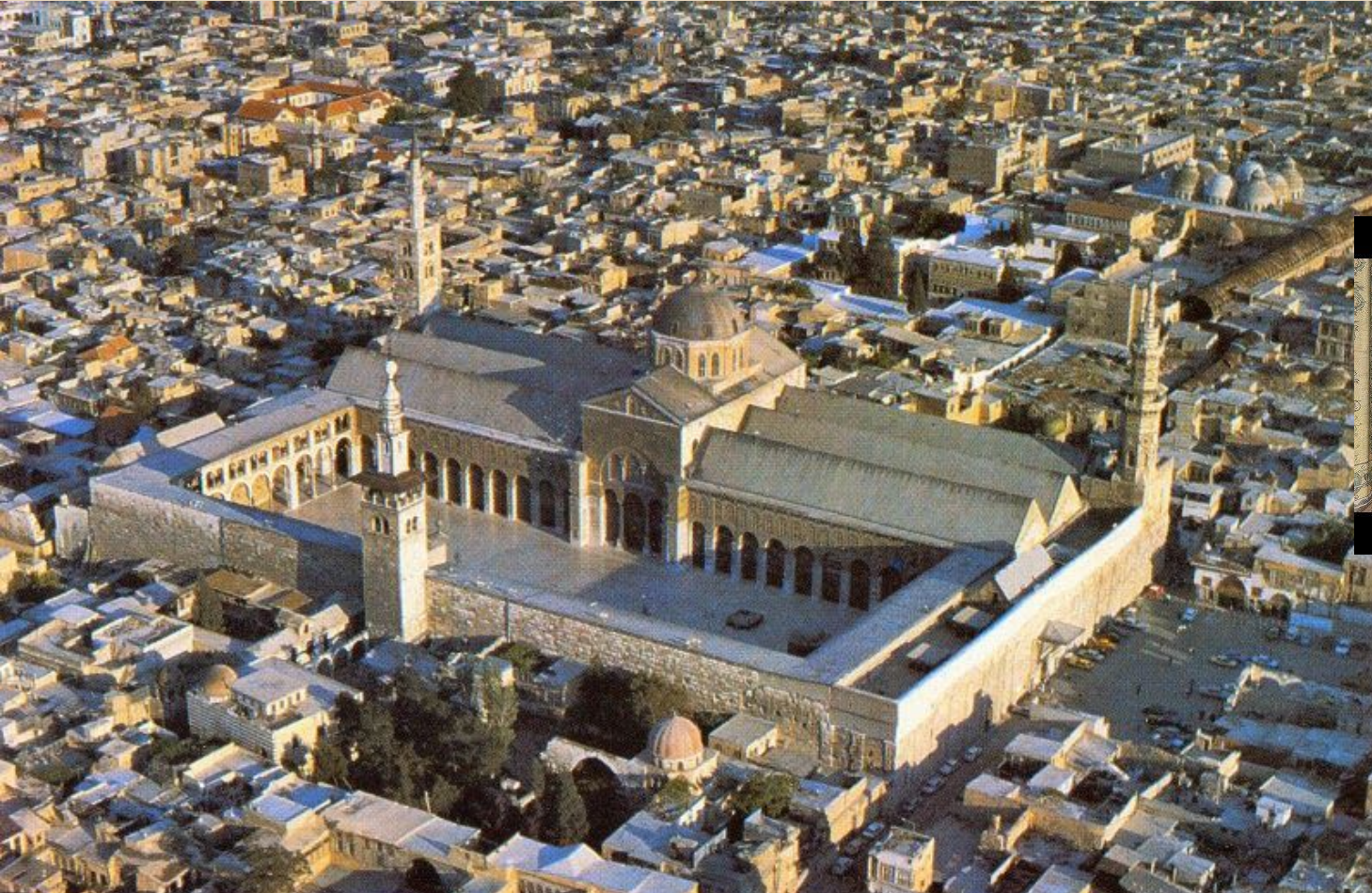
# The Mustansiriya Madrasah University and Medical School in Baghdad, established by Abbasid Caliph al-Mustansir in 1227



## 2. Architecture

Geometry played a key role in Islamic architecture and is reflected in many mosques, libraries and other buildings in the medieval era. Islamic architecture in the Middle Ages was characterized by vaulted ceilings and domes that combined Roman and Persian influences, as well as minarets (towers used for calls to prayer). Complex geometric patterns and calligraphy adorned buildings and represented spiritual concepts. The Umayyad, Abbasid, and Fatimid Caliphates all incorporated their own architectural styles infused with ancient styles as well as with the styles of the regions with which they came into contact, such as Muslim Spain and Egypt.

The Umayyad Mosque in Damascus (aka the Mosque of Damascus) is one of the largest and oldest mosques in the world (built 715 CE).



Watch the video for a 360 degree view of the mosque



The Umayyad  
Mosque at night

# The Dome of the Rock

The Dome of the Rock in Jerusalem (691) is one of the most important buildings in all of Islamic architecture. Its construction under the Umayyad Dynasty was patterned after the nearby Church of the Holy Sepulchre and Byzantine Christian artists were employed to create its elaborate mosaics against a golden background. The great epigraphic vine frieze was adapted from the pre-Islamic Syrian style. The Dome of the Rock featured interior vaulted spaces, a circular dome, and the use of stylized repeating decorative arabesque patterns.



# The Mosque of the Prophet, Medina

The Mosque of the Prophet was first built by Muhammad in 622, but was renovated under the Umayyad Caliphate in 707 CE.





The Great Mosque of Kairouan is one of the greatest mosques in North Africa (Tunisia). Here you can see one of its minarets. It is an example of the syncretism of eastern Islamic architecture and North African Islamic architecture/



Raised  
arcades  
inside the  
Great  
Mosque  
of  
Kairouan



# The Mosque-Cathedral of Cordoba

Starting with Adb al-Rahman, the founder of Muslim Spain, the Spanish Muslims began construction of the Great Mosque at Cordoba in 785 marking the beginning of Islamic architecture in Spain and Northern Africa. It was built in part to demonstrate the linkage between Al-Andalus and the ancestral land of the Arabs in Syria, and it shares many features with the Great Mosque of Damascus (Syria). It is most known for its semi circular arches (seen to the right).





The Mosque-Cathedral of Cordoba

# The Mosque-Cathedral of Cordoba





Interior of the  
Mosque-Cathedral  
of Cordoba



Interior of the  
Mosque-  
Cathedral of  
Cordoba

# The Alhambra in Granada, Spain

Moorish architecture reached its peak with the construction of the Alhambra, the magnificent palace/fortress of Granada (southern Spain), with its open and breezy interior spaces adorned in red, blue, and gold. The walls are decorated with stylized foliage motifs, Arabic inscriptions, and arabesque design work, with walls covered in glazed tiles. It was built atop the ruins of a Roman fortification in the mid-13th century by the Emirate of Granada.







Muslim rule in Spain brought a new architecture, including gardens with water engineering, as in the Alhambra's Palacio de Generalife



The Great Mosque of Aleppo, built by the Umayyad Caliphate in 717 CE



The Great Mosque of Aleppo, courtyard

# 3. Literature

The most well-known work of fiction from the Islamic world was *The Book of One Thousand and One Nights* (Arabian Nights), which was a compilation of many earlier folk tales told by the Persian Queen Scheherazade. The epic took form in the 10th century under the Abbasids and reached its final form by the 14th century; the number and type of tales have varied from one manuscript to another. Various characters from this epic have themselves become cultural icons in Western culture, such as Aladdin, Sinbad and Ali Baba. However, no medieval Arabic source has been traced for Aladdin, which was incorporated into *The Book of One Thousand and One Nights* by its French translator, Antoine Galland, who heard it from an Arab Syrian Christian storyteller from Aleppo. The stories range from tales of scandal and treachery to tales of adventure. Go [here](#) if you want to read summaries of some of the best stories from *Arabian Nights*.

The Islamic Golden Age was also renowned for its poetry, most notably that of Rumi and A'ishah al-Bā'ūnīyah. You can see some examples of Rumi's poetry by skipping ahead to [this slide](#) and read more about A'ishah al-Bā'ūnīyah [here](#).

# The Poetry of Rumi

Rumi was a 13th century Persian poet who is regarded as one of the greatest and most widely read poets of all time and he continues to be a bestseller in the US. His works transcended ethnic and cultural divisions.

## From *Open Secret*

For years, copying other people, I tried to know myself.  
From within, I couldn't decide what to do.  
Unable to see, I heard my name being called.  
Then I walked outside.

The breeze at dawn has secrets to tell you.  
Don't go back to sleep.  
You must ask for what you really want.  
Don't go back to sleep.

## From *Unseen Rain*

Don't let your throat tighten with fear. Take sips of breath all day and night. Before death closes your mouth.  
There's no love in me without your being,  
no breath without that. I once thought  
I could give up this longing, then though again,  
*But I couldn't continue being human.*

## From *Unseen Rain*

**There are two kinds of intelligence: One acquired, as a child in school memorizes facts and concepts.. With such intelligence you rise in the world. You get ranked ahead or behind others**

**There is another kind of intelligence, one already completed and preserved inside you. A spring overflowing its springbox. A freshness in the center of the chest.**

**This second knowing is a fountainhead from within you, moving out.**

# A'ishah al-Ba'uniyyah

'A'ishah al-Bā'ūnīyah (d. 1517) was one of the greatest women mystics in Islamic history. A Sufi master and an Arab poet, Ā'ishah wrote of her great devotion to God and His prophet Muhammad, and spoke of love and longing on her mystical quest for union.

She was clearly well educated, and her many writings were read and copied by later generations of admirers who preserved her substantial literary and mystical legacies. This excerpt from one of her poems demonstrates her belief in the benefits of devout praise:

Praise of God's Prophet moves the soul;  
it drives away doubt, worries, and grief.  
Spirits find rest, eyes cry in delight,  
and bodies dance—you can't hold them back!

# 4. Libraries

The importance of literature was reflected in the proliferation of libraries in Dar al-Islam. During the Abbasid Caliphate, the Bayt al-Hikma (House of Wisdom) started as a large collection of Persian, Greek and Latin works that built off the Umayyad library (in Damascus) of the same name and later became a center of scholarship for the Translation Movement. Almost every madrasa in Baghdad reportedly had a library of its own. The Fatimid Caliphs who later ruled Egypt and parts of Africa after the Abbasid fragmentation wanted to rival the Abbasid elegance. The al-Azhar Mosque in Cairo was fitted out as a large library and called Dar-al-Ilm (House of Knowledge) with 6,500 volumes on astronomy, architecture and philosophy. The third great public library was created at Cordoba on the model of the Abbasid libraries of Baghdad. It was a huge library, purportedly with some 400,000 volumes and a catalogue in 44 registers of 20 sheets each. The Buyid Persian dynasty boasted a library in Tehran of over 200,000 books (possibly an exaggeration). During the Delhi Sultanate, schools and libraries spread across northern India.

# Modern Day Baytul Hikma (House of Wisdom), Baghdad





Scholars at the Abbasid library in Baghdad



Reading room of the world's oldest library – Al-Kairouan (Fez, Morocco) is home to approximately 4,000 manuscripts, including 9th century Qurans.



# 5. Philosophy

Ibn Sina (Avicenna) and Ibn Rushd (Averroes) played major roles in preserving and interpreting the works of Aristotle (ancient Greek philosopher), whose ideas came to dominate the non-religious thought of the Christian and Muslim worlds. Averroes, considered the “father of modern philosophy” sought to reconcile religious and secular ideas, which greatly influenced St. Thomas Aquinas (an Italian philosopher), who proposed that reason could be found in God in the 13th century. Averroes played a pivotal role in the rise of secular thought in Europe.

Avicenna wrote extensively on logic, ethics and metaphysics. His aim was to prove the existence of God and God’s creation of the world scientifically and through reason and logic, helping to form the foundation of curriculum at Islamic schools and madrasas. He relied on deductive reasoning—reaching logical conclusions by starting with a hypothesis and examining possibilities or premises until reaching a conclusion. In his “Floating Man” thought experiment, he argued for the existence of the soul by arguing that a man who was blindfolded and prevented from feeling sensory experiences would still be aware of his own existence.

# 6. An Agricultural Revolution

Arabs in Spain especially influenced agricultural expansion and improvement. Muslim rulers in Al-Andalus restored Roman irrigation and aqueducts. They also introduced Persian qanats for transporting water from underground wells or aquifers to the surface (these could transport water hundreds of miles). Foods from Persia and India such as rice, sugarcane, citrus fruits, bananas, and carrots reached Spain and Sicily and were further diffused in Europe and Africa.

Treatises on botany and agricultural practices circulated, and combined with water and wind technology helped increase quality of life. Muslim rule in Spain also provided property rights for both landowners and renters. Thus, a new system of crop rotation, fertilization, and irrigation was put into place under a new legal framework of land ownership and tenancy.

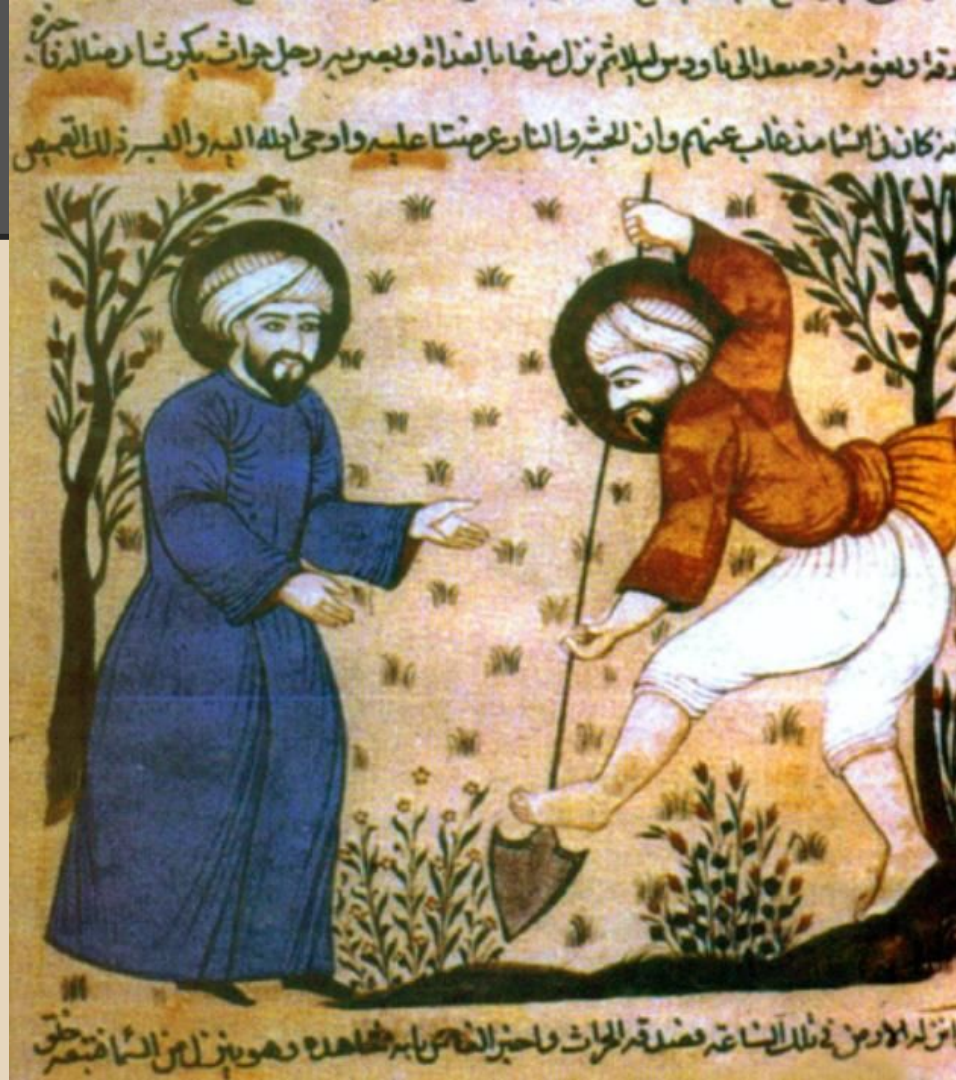
# Agricultural Treatises

Ibn Bassal of Al-Andalus wrote several treatises on agronomy (the science and technology of using plants and animals in agriculture). His most famous work, *Dīwān al-filāha*, describes over 180 cultivated plants as well as various methods for improving soil fertility.

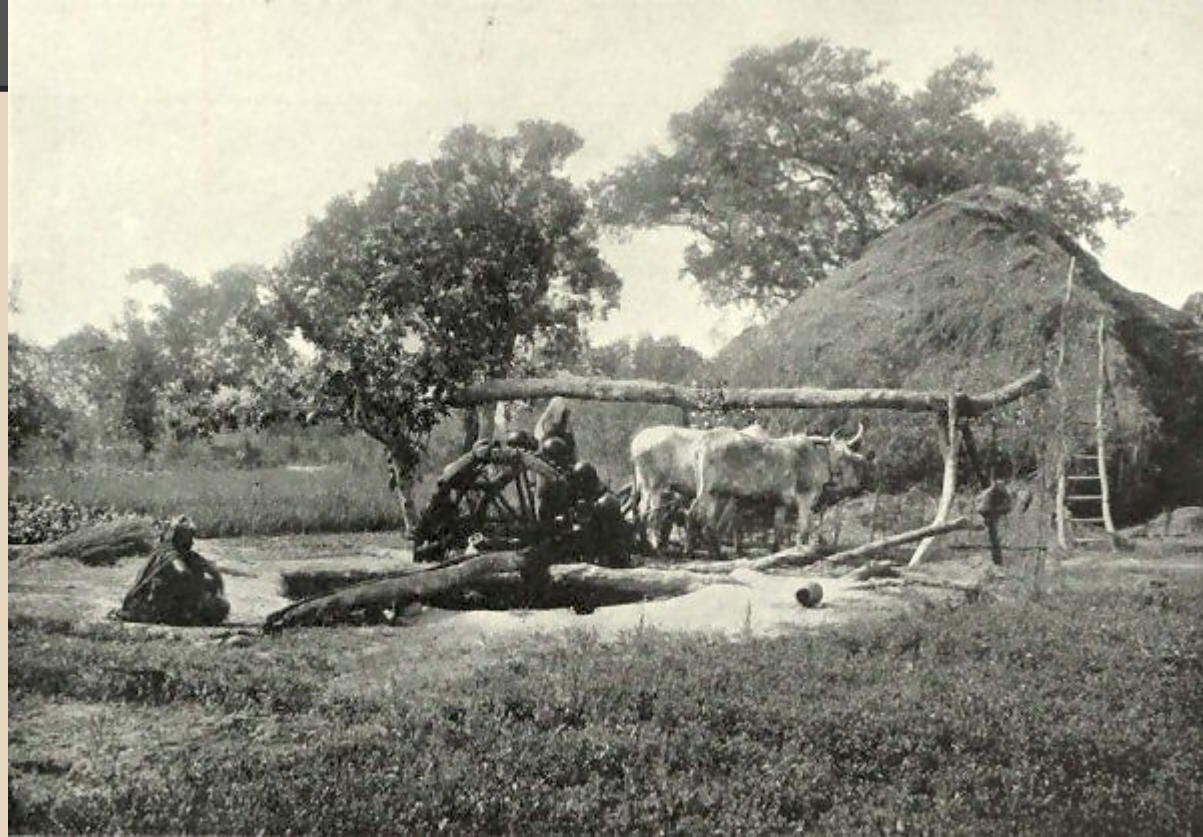
Right: Ibn Bassal and Abū I-Khayr al-Ishbīlī described in detail how to propagate and care for trees such as olive and date palm.



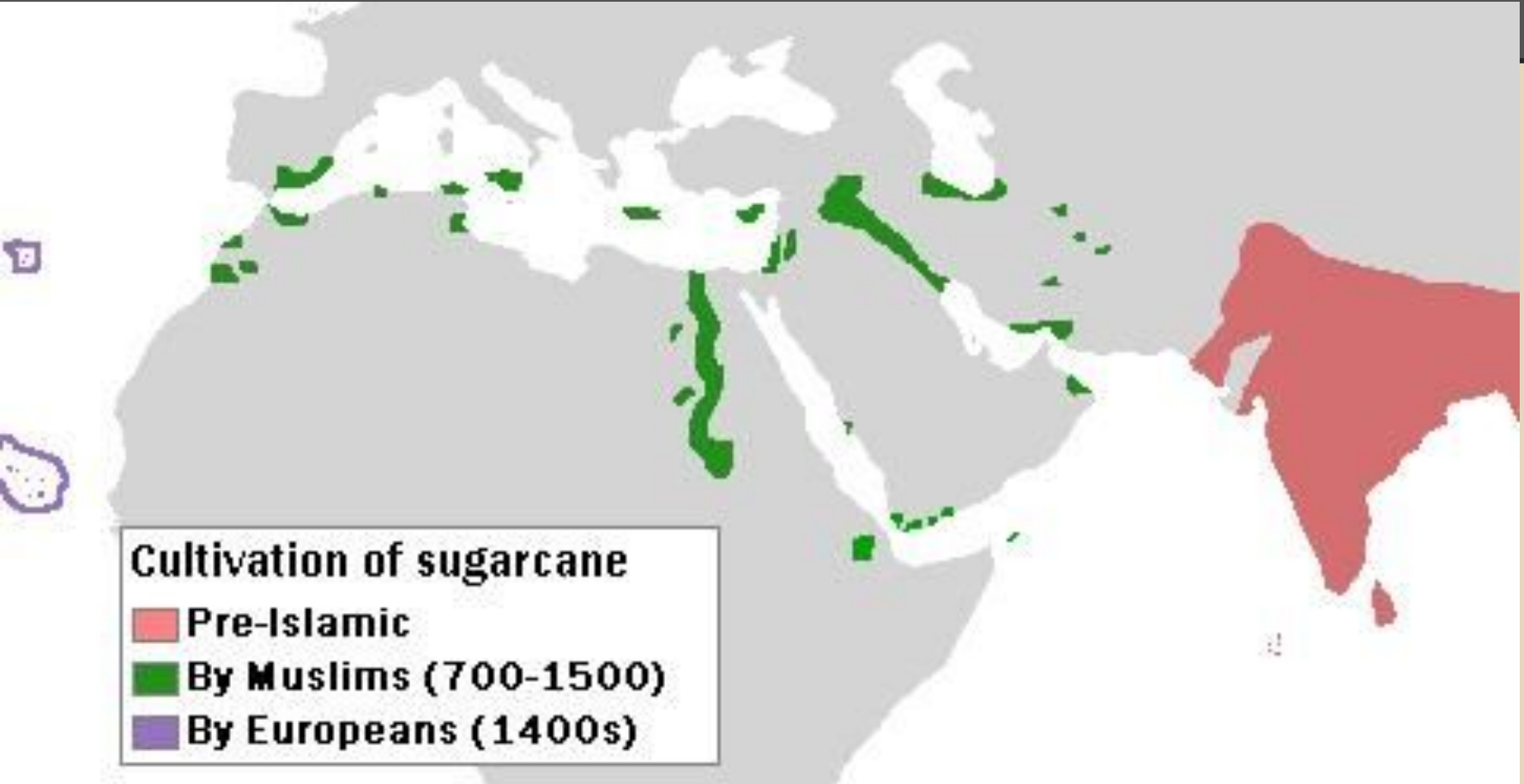
Agricultural scene from a  
mediaeval Arabic manuscript from  
Al-Andalus c. 1200



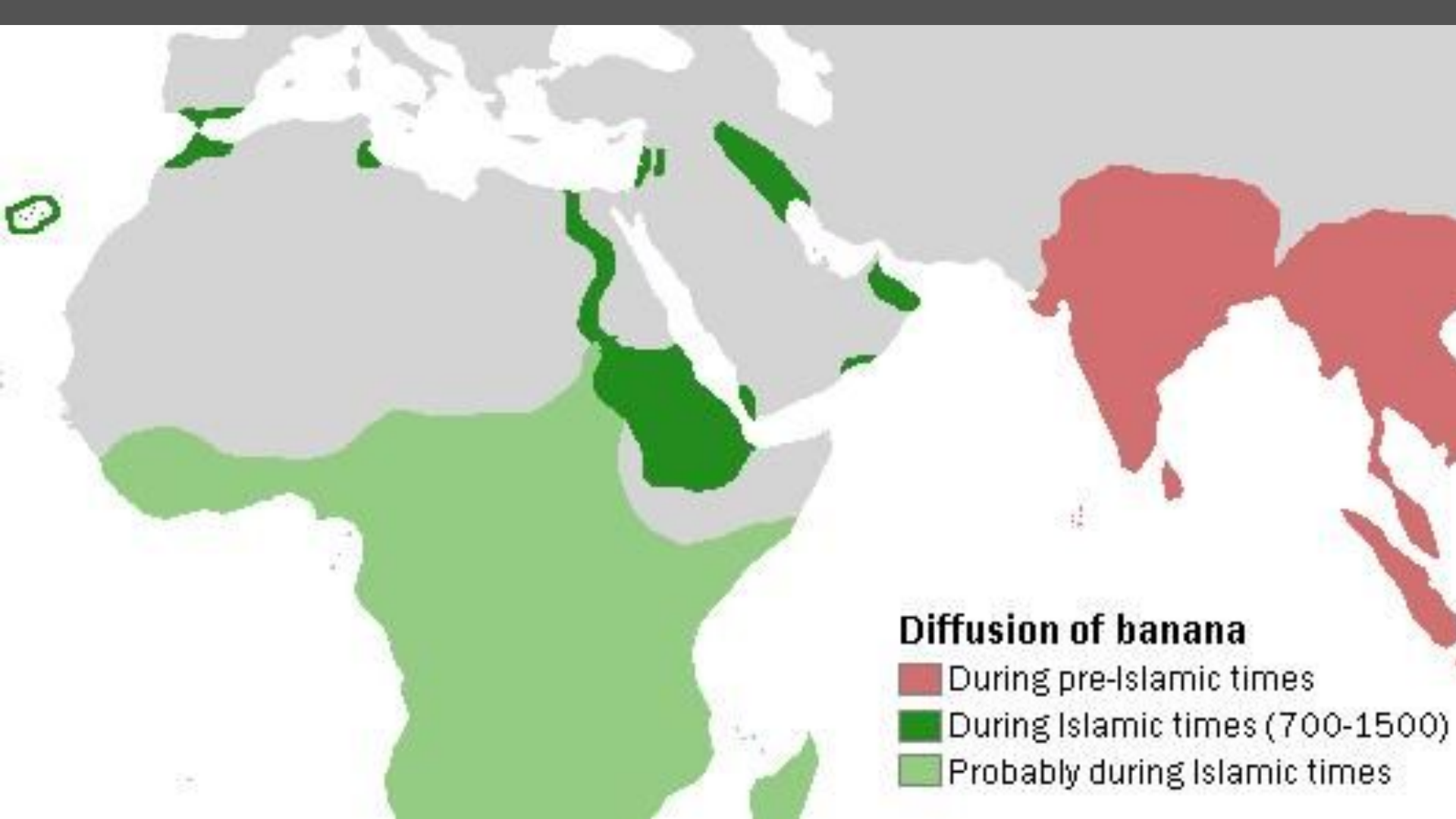
The animal-powered *sakia* irrigation wheel was improved in and diffused further from Islamic Spain.



# Spread of Sugarcane Cultivation







### Diffusion of banana

- During pre-Islamic times
- During Islamic times (700-1500)
- Probably during Islamic times