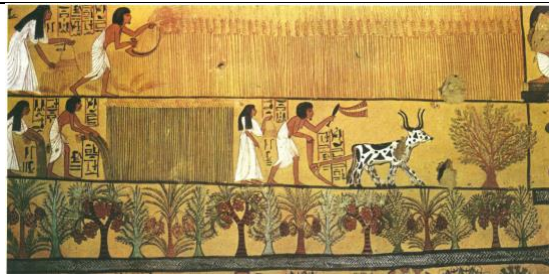


### 3. THE ECONOMY

#### Importance of the Nile: agriculture, animal husbandry, transport

##### Agriculture

- Supported the agriculture that fed the people and sustained the Egyptian economy
- Either side of the Nile was a fertile strip of land and beyond that was desert
- The annual floods created work for most of the population for 8 months of the year with ploughing, planting, irrigating and harvesting the staple crops of wheat and barley
- These crops were the foundation of the taxation system
- Insufficient water may have meant economic disaster; if the annual floods were late or did not come at all, famine was a threat



Sources from the tomb of Sennedjem of him and his wife ploughing the fields in the afterlife

Shows the importance of irrigation and the Nile in agricultural work, with the channels surrounding Sennedjem and his wife as they work.

##### Animal husbandry

- A range of animals like cattle, donkeys, goats, sheep, geese and ducks were domesticated
- Animals were a good source of milk, wool, meat, eggs, leather, skins, horns and fat; dung was also utilised
- They pulled the ploughs and during threshing, walked over the harvested grain to separate it from its stalks
- Cattle were cared for by herdsmen
- Donkeys were used to carry heavy loads and could travel long distances
- Goat skins were used to make water skins
- Sheep wool was used for wigs
- Geese and ducks were reared in enclosures and fattened before eating

Harris Papyrus mentions fattening houses containing fat geese

Evidence of the type of animals that they kept and killed for food, as well as the fact that they had a method for producing the best possible meat by fattening the geese up.

##### Transport

- Major route for trade
- The Nile and canals provided the main means of transport for both people and goods
- Simplest boats were made from bundles of papyrus, others were made from timber
- Oarsmen were essential on boats along with a rowing crew, which ranged in number from 2 to 50 depending on the size of the boat
- Source of leisure activities
- Passenger vessels ranged from small boats with open decks for a few standing passengers to larger boats with cabins and awnings
- Barges carried a range of cargo including blocks of stone and grain



Sailors leaving the boat carrying sacks of grain that were transported on the Nile (Tomb of Ipuy).

Demonstrates how the Nile and boats were used as a source of transport for goods.

### Modern opinion

- “The Nile is a unique and enormous oasis, a garden in a wilderness.” (J.E. Manchip White)
- “Efficient supervision of the Nile was the first requisite of good government.” (J.E. Manchip White)
- “Geographical considerations affected every phase of human activity in the valley of the Nile.” (J.E. Manchip White)
- “Thus, for its crops Egypt is entirely dependent on the Nile.” (A. Gardiner)
- “At the most flourishing moments of her history, Egypt’s material resources were incomparably great.” (A. Gardiner)

## Crafts and industry: wood, stone and metal

### Crafts and industry

- Large numbers of craftsmen in workshops throughout the land were engaged in the manufacture of furniture, musical instruments, wagons and chariots from wood, statues and steles and household objects from stone, and the manufacture of tools, weapons, jewellery and household objects from metal
- The finest products were intended for temples and tombs of the elite

### Wood

- Imported timber: cedar, cyprus and pine from Lebanon and ebony from Nubia
- Carpenters cut timber for beams, door frames, doors of houses and planks used for boatbuilding
- Joiners produced statues, coffins, shrines, musical instruments and furniture for houses and tombs (decorated with inlaid patterns or veneer)
- Wheel-making was a specialised form of joinery
- Ramesside joiners were expert at cutting and joining pieces of timber to produce strong, six spoke wheels that were perfectly round
- Joiners also manufactured bows, arrows and javelins
- Carpenters and joiners used a variety of tools including axes and adzes, saws, chisels, drills and saws

### Stone

- Egypt had a good supply of stone including limestone, alabaster, quartzite (of various colours), sandstone, granite, obsidian and schist
- Stone-workers included masons, sculptors and engravers
- Stone-workers produced stone columns, lintels and cornices for temples and the houses of the wealthy, statues for temples and tombs, and steles of different shapes and sizes
- They also produced inscriptions and reliefs on the walls of tombs
- During the Ramesside period, stone-workers produced a number of obelisks and colossal royal statues
- Produced a range of household objects including cups, amphorae, bowls, jars and jugs made from schist and alabaster
- Canopic jars were made of stone

Abu Simbel	Example of the extraordinary level of stone work that the Egyptian craftsmen were able to execute.
------------	--

## Metal

- Metalworkers worked mainly with gold, silver and copper
- As a precaution against theft in workshops, the metal was weighed before it was distributed to the workers
- Gold and silver were melted over an open flame, formed into wire, strips or sheets, then fabricated into objects such as jewellery, cups and jugs
- Small statues and ritual objects were made from metal
- Metal tools included axe-heads, adze blades, chisels and saws
- Metal weapons included daggers, swords, spears, arrowheads and battle-axes
- Metal was also used for household objects such as cauldrons, basins, ladles, and items for personal use like razors, mirrors, tweezers and pins
- Objects made from metal were highly prized and often stolen from tombs to be melted down

The Harris Papyrus lists spectacular offerings to the gods made by Ramesses III which included numerous objects of gold, silver and burnished copper.	Examples of types of metals that the Egyptians used.
Metal objects that have survived from the Ramesside period include tools from Deir el Medina, weapons from Per-Ramesses, a variety of silver and gold items from 2 burials at Bubastis, and two caches belonging to Seti II found in the valley of the Kings.	Again, demonstrates the wide variety of metals that they used and how they were prized since they were included in the tombs of royalty.

## Economic exchange: unit of value (*deben*), taxation, tribute and trade

- Economy was based on bartering
- Value of goods was based on a measurement called Deben
- A measure of weight that was used for gold, silver and, most commonly, copper
- One Deben of copper weighed between 90 and 91 grams

## Deben

- 1 sack of wheat (c.58 kg) = 1 to 2 Deben
- 1 sack of barley = 2 Deben
- 1 loaf of bread = 0.1 Deben
- 1 litre of beer = ½ Deben
- 50 fish = 2 Deben
- 1 shirt = 2½ Deben
- 1 razor = 2 Deben
- 1 mirror = 6 Deben
- 1 fly-swat = 1 deben
- 1 'Book of the Dead' = 100 Deben
- 1 slave girl = 4 Deben



Evidence of economic exchange and how it was recorded and meticulously kept track of.

At Deir el-Medina during the New Kingdom, prices were recorded on papyri and on numerous ostraca that date to a 150-year period during the 19th and 20th dynasties.

### Economic exchange

- Few people would have paid for goods with copper, silver or gold- they would have reached an agreement about the value of the goods being offered in exchange
- Barter prices were much more fluid than the fixed prices in modern day western markets
- Prices were set by the strength of each individual's desire to conclude an exchange and each individual's skill at arriving at a good price. If there was a shortage of baskets, the price could go up

In Ramesses II's time, the scribe Penanouqit sold an ox for the price of 130 deben of copper.

Evidence of the use of deben in Egyptian society and the prices expected for certain goods.



A woman is selling bread and possibly beer (top left), beside her a sailor is exchanging grain for fish. On the right, a buyer checks out a cake or a loaf of bread while beside him another is acquiring some vegetables. (Tomb of Ipuy).

The exchange of grain for fish demonstrates the bartering that took place instead of a monetary system.

### Taxation

- Considered by some to have been the most heavily taxed nation
- The state relied on revenues in forms of labour and taxes
- Taxes were taken as part of produce, merchandise or property
- Taxation system was based on agricultural production and calculated by teams of scribes, who measured the crops and estimated yield
- Amount of tax paid was carefully recorded and taken to government storage and holding facilities
- Collection of taxes was often performed by coercion
- Grain, livestock and other goods were then redistributed as wages to officials, artisans, priests and others not in food production jobs e.g. workers at Deir el-Medina
- Farmers owing taxes were either forced to hand over arrears (debt) on the spot or were brought before the courts
- Peasants were the highest and most consistently taxed part of the population
- Grain was the most important taxed commodity
- Temples owned as much as a third of the arable land and were exempt from paying taxes

## Tribute

- Tribute paid by vassal states to foreign power as sign of submission; revenue from conquered territories
- Extracted tribute from Nubia, Kush, Syria and Lebanon
- Tribute consisted of gold, ivory, ebony, cedar and incense
- Average annual tribute from Nubia was 2154 deben in gold (196 kg), 20 slaves and 94 cattle
- Egyptian term *in* – translates to tribute as well as things brought – refers to gifts and goods exchanged in trade

## Trade: imports

- Main imports were luxury items for wealthy and temple treasuries
- Exotic goods came from Africa through Nubia
- Imported goods:
  - Sinai: copper, turquoise, malachite
  - Nubia: gold, ivory, ebony
  - Mediterranean: olive oil, pottery
  - Syria-Palestine: silver, copper, wine, timber, wood oils, resins
  - Byblos: silver and gold
  - Afghanistan: lapis lazuli, ornaments, oils, resins and wine for consumption or religious offerings
- Timber was a valuable import, because Egypt is a desert, and was used in:
  - Buildings
  - Wagons
  - Chariots
  - Furniture
  - Tombs of wealthy people for the coffins and funerary furniture
  - Mummification with cedar oil
  - Perfumes and medicines with wood oils
  - Masts and rudders of ships
- Egypt was wholly dependent on imports for iron from European countries such as Greece, which put the country at a disadvantage against the rising empires of the east during the New Kingdom

<i>Report of Wenamun</i> (20th Dynasty) details purchased timber on behalf of the government with cargo of gold and silver vases, linen tunics, textiles, rope, ox hides, lentils and fish.	Demonstrates how the government secured timber from neighbouring countries, as well as the variety of goods and commodities that they were able to provide as payment.
Relief from temple of Ramesses II at Beit el-Wali shows the king receiving gold, ebony, ivory, live animals, animal skins, feathers, fans, bows and shields from hides.	Shows the types of luxury goods and commodities that Egypt and the pharaoh had imported.

## Trade: exports

- Food (wheat and barley to Canaan)
- Luxury goods like alabaster vases, bowls, fine linen cloth
- Papyrus
- Egyptian figurines, amulets, scarabs, and beads found in sites around the Mediterranean, and were probably souvenirs or personal trinkets
- Gold and silver vessels, which were appreciated for the metal and craftsmanship
- Egyptian linen, which is considered the finest ever produced

## Technological development: tools, building materials, techniques and construction, shadouf

### Tools

- Workers used ploughs, hoes, rakes, grain scoops, and mallets
- Women used spindles and looms in the home
- Foremen used measuring rods, strings, plumb-lines and set-squares
- Workmen used buckets, baskets, hoes for mixing, and used straw/chaff and standard sized wooden moulds to make the mud bricks, which was carried in yokes (beam placed across workman's shoulder, from each side of which loads such as water or brick were suspended)
- Copper was extensively used in ornaments, vessels, weapons (such as axes, knives, harpoons and arrow tips), needles, saws, scissors, pincers and adzes (tool used by carpenters to hack wood into smaller pieces and shape objects)
- Bronze was used for chisels, arrow heads, fishing hooks, and nails
- Iron was later used and replaced both copper and bronze
- In construction work, wooden pegs, mortice, Tenon joints and glue were used to assist in fitting timber together



A piece of ostraca from Deir el Medina showing a badly carved image of a craftsman wielding a chisel.



Demonstrates the types of tools that workmen used and had access to, as this man utilises a chisel and hammer in his work.

### Building materials

- Mortar was a mixture of gypsum and quartz with small amounts of lime used to hold bricks in place; suited the dry climate
- Mud bricks, made from the Nile mud and straw, were the main material in most building structures in the New Kingdom
- Homes as well as palaces were constructed from mud bricks
- Stone was mainly used for the construction of temples, tombs and monuments
- Most common type of stone was limestone, which is relatively soft when freshly quarried and hence easily reshaped
- Granite was occasionally used
- Other materials include alabaster, quartzite, sandstone, calcite, diorite, basalt, obsidian and schist
- Expensive materials like quartz, marble and coloured granite were used for decoration
- Wood was used in the construction of doors, shutters, ceiling pillars, upper storey floors and furniture like chairs, tables, cabinets and chests, as well as in vessels like boats
- Wood was imported from Lebanon and Syria and included cedar, Cyprus, pine, acacia, tamarisk, sycamore fig, fir and other conifers
- Ebony was bought from Nubia
- Variety of metals used like copper, tin, coppery alloys like bronze, lead, silver and gold
- Tin had to be imported to make bronze



- Minerals were ground and mixed with glue to make pigments to colour wall paintings and reliefs (white was made from gypsum, black from carbon, blue and green from azurite and malachite, reds and yellows from iron oxides, and yellow from orpiment)

 <p data-bbox="108 725 774 790">Carving from a tomb in Saqqara of workmen pouring water onto the ground to transport stone.</p>	<p data-bbox="794 259 1492 369">Demonstrates the rather advanced methods used by the Egyptians to more easily secure and transport various materials.</p>
 <p data-bbox="108 1182 774 1254">Quartzite and sandstone used to construct the Barque Chapel of Seti II.</p>	<p data-bbox="794 804 1492 875">Shows the various materials that went into the crafting of buildings.</p>

### Techniques and construction

- Construction was controlled by architects, engineers and master builders
- Architects and stone masons planned buildings by using ground plans, sections and contours which were drawn on surfaces covered with grid lines
- Due to advances in architectural technique, tombs of the 19th and 20th dynasties were more elaborately decorated
- The newer technique in tomb building was introduced due to increased incidents of tomb robberies, which led to smarter tomb designs (like relocating tombs to high cliff faces)
- There is evidence of arched doorways and corbels (supporting projections of wood or stone on the face of the wall) used in stone or mud brick buildings
- When building foundations were laid, the pit was first filled with water and the horizontal lines were marked on the walls to ensure the monument would be sturdy



Limestone and plastered reliefs and embossed text in the tomb of Nefertari.

Displays the highly advanced craftsmanship of the Egyptians with use of plaster, limestone and pigments crafted from various minerals to a beautiful end result.



Entrance to a tomb in Saqqara, designed with flat surfaces and symbolic depictions.

Another type of tomb decoration, with no raised plaster reliefs, but instead flat surfaces with pigments painted on top. A different method, but no less signifying of their advanced construction and decoration methods.



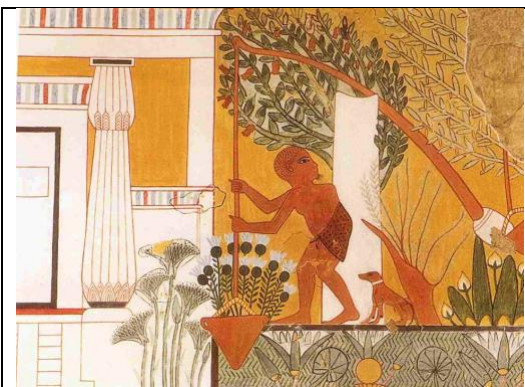
Mud brick vaults that form the Ramesseum.

Demonstrates the use of mud bricks in ancient Egypt, even in buildings considered highly significant and important to royalty, showing that this method of construction was not restricted to the lower classes of society.

### Shadouf

- An irrigation system that transported water from the Nile into channels that ran through the fields
- Consisted of an upright column on which rested a moveable beam; at one end was a counterweight and at the other was a bucket attached to a rope; when the bucket was full and its weight was matched by the counterweight, the labourer can pull the bucket up and empty the water out
- Made cultivation possible in Ancient Egypt and allowed agricultural workers to more easily maintain their crops
- Incredibly functional as it could be easily operated by an individual





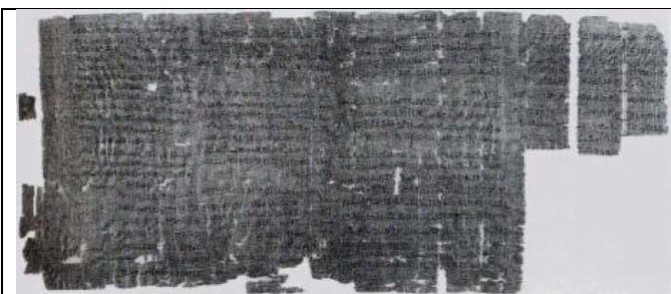
Relief of a labourer using a shadouf (tomb of Ipuy).

Demonstrates a worker using a shadouf to easily transport water to the personal garden. This device is an example of Egyptian innovation that allowed them to more easily care for their crops and increase productivity.

## Workers' strike, tomb robberies and corruption

### Worker's strike at Deir el-Medina

- Royal tomb workers went on strike in the 29th year of Ramesses III's reign as they worked on Medinet Habu, the mortuary temple of Ramesses III
- First recorded strike in history
- Occurred because on two separate occasions, the supplies they should have received as wages didn't arrive
- They staged a sit-down demonstration and sent complaints to the administration at Thebes
- Provisions were provided but the workers staged further strikes throughout the year
- May have been a reflection of the corruption of the officials or a breakdown in administration



*"It is because of hunger and thirst that we came here. There is no clothing, no ointment, no fish, no vegetables. Send to Pharaoh our good Lord about it and send to the vizier our superior, that sustenance may be made for us."*

Record of the workers strike at Deir el Medina, written by the scribe Amennakhte.

Written record of the event shows that workers were willing to demand quality conditions as they worked, but also may reveal a failing in the administrative system or perhaps corruption.

### Tomb robberies

- Became increasingly common in the 20th Dynasty due to deteriorating social and economic conditions and increase in official corruption
- Tomb of Queen Isi, wife of Ramesses III, and the tombs of the Ramesses II and Seti I were robbed resulting in a shift in the burial practices of the royals
- There were secret mass burials of important leaders and reburials of kings in remote caves or tombs which were easier to protect
- However, this may have been a fallacy encouraged by corrupt officials in order to rob the tombs

A letter sent by the general and high priest of Amen, Piahnk, commands that his followers search the tombs.

Implies that the Theban administration was using the excuse of protecting the bodies of their royals but instead

	was stripping the tombs of valuables and using them to aid in the declining wealth of Egypt.
--	--

**Corruption**

- Many pharaohs, such as Ramesses I, implemented actions against corruption
- Ramesses III was forced to inspect and reorganise many temples due to corruption of the priests
- “Thus the earliest moral development which we can trace in the ancient East was suddenly arrested, or at least checked, by the detestable devices of a corrupt priesthood eager for gain.” – Will Durant, Heroes of History

The Nauri Decree (Seti I) has many examples of corruption, mismanagement and incompetent government. It reports military misconduct, including the theft of boats and animal hides, as well as beating civilians and taking bribes.	Demonstrates that Seti attempted to implement actions preventing and discouraging corruption, and provides examples of the large scale and severe counts of corruption that were occurring in Egypt.
An example of corruption in administration is the persistent theft by a ship’s captain named Khnum-nakht who transported grain for the priests of the Temple of Khnum at the First Cataract during the reigns of Ramesses IV and Ramesses V. Khnum-nakht’s contract was to carry 700 sacks of grain each year from the Delta to the temple. Over a nine-year period, he did not once deliver agreed number of sacks.	The fact that this serious breach went on so long is an indication of an inefficient or corrupt system.

**Modern opinion**

- “The lack of focus in the workers’ complaints shows the diffuse air of demoralisation which had spread throughout the villages.” (John Romer)
- “Tomb robbery was the most execrated of all offences the ancient Egyptians would commit – by his ruthless destruction of the brittle mummy he robbed the deceased person of eternity.” (J.E. Manchip White)
- “During the reign of Ramesses IX, the tombs became the prey of an organised gang.” (Morris Bierbrier)
- “By the end of the first decade of king Ramesses IX, the proceeds of tomb robbery seem to have become an important part of the Theban economy.” (John Romer)