

The Greeks and the Sassanids - A new Glorious Era for Agriculture (330-625 AD)

Nasrat Adamo¹ and Nadhir Al-Ansari²

Abstract

The Achaemenid Empire collapsed after the failure of King Darius III to stop the sweeping advance of Alexander in Anatolia towards Persia. Therefore, Alexander entered Babylon in 331 BC before advancing into the heartland of Persia itself and occupying its other major cities and advancing from there into India. At this point, begins to describe the period of the Greek domination at the return of Alexander to Babylon, which was followed, later on by yet another period of Persian domination of Mesopotamia. During his stay in Babylon Alexander looked into the conditions of the irrigation and water works. Although the canal networks were in good conditions when they were left from the Archimedean's time, he nevertheless ordered the cleaning of all the canal intakes on the Euphrates River. His major undertaking, however, was to solve the problem of the canal called the Popallacopas. This canal was used to pass the floodwater of the Euphrates down to the marshes and from there to the Persian Gulf while the Euphrates continued its course through Babylon in the reach, which was known, as the Babil River. Every flood season the Popallacopas closing dike was breached to pass the flood but the task of constructing it back afterwards was very difficult. The closure was necessary to ensure suitably high water levels to serve Babylon itself during the low water season, the closing operation of the intake, which was located in a ground of sandy soils, needed large working force of not less than 10000 men. Following the advice of his engineers, Alexander solved this problem by excavating a new head reach channel from another location above the first one but located in good and firm ground. Alexander's next move was aimed at the reclamation of the marshy lands located near the present day of Najaf and to this end he constructed a massive earthen dyke between Babil River and the marsh north of the present day town of al-Shanafiyah as a preliminary step to dry the marsh and then prepare it for canalization and cultivation. Alexander premature death in June of the year 331BC

¹ Consultant Engineer, Norrköping, Sweden.

² Lulea University of Technology, Lulea, Sweden.

however put an end to this work. In the aftermath of Alexander's death his empire was divided between his generals; Persia, Mesopotamia and Anatolia passed to Alexander's general Seleucus I Nicator who founded the Seleucid Empire (648-312BC) and succeeded in extending it also to cover the whole region of the Fertile Crescent. Various Persian satrapies (vassal kingdoms) such as Aria, Parthia, Fars, Media, Atropatene, paid taxes to the Seleucids but ruled with a great deal of independence. Seleucus inaugurated his reign by building a new capital for the empire, which was the Seleucia-on-Tigris on the western bank of the Tigris 60 kilometers northeast of Babylon, not far from the confluence of Tigris and Diyala. The lands of Mesopotamia at this point in time, had been already irrigated successfully by a system of canals maintained under the supervision of the State and agriculture was as usual the prime and most important basis of all the prosperity the empire had enjoyed. However, being a corridor between east and west Mesopotamia remained at the middle of conflicts with other outside powers and new rising tribal forces seeking to have their own kingdoms and empires. This was the case with the Parthians coming from the Persian heartland that had rebelled against the Seleucids after being vassals to them, and then vanquished their empire and took over its domains including Mesopotamia. In establishing themselves in Mesopotamia the Parthians moved their capital to Ctesiphon on the eastern bank of the Tigris opposite to Seleucia-on-Tigris about 58 BC, and remained the capital of the this empire until it was passed to the hands of the next Persian dynasty of the Sassanid. During the Parthian empire rule the economic prosperity was directly related to the upkeep of the irrigation systems and agricultural practices. Mesopotamia and the Persian lowlands of Khuzestan were the traditional centers of growing wheat, barley, and other cereals, while dates and other fruits were regularly produced and often exported. In the highlands of northeastern part of Mesopotamia and the Persian plateau, pastoralism and other forms of animal husbandry outweighed farming, although sowing various grains, most importantly wheat, as well as growing fruits, was also common. An earlier presence of rice in west Asia especially Mesopotamia might have also occurred through initial farming in eastern Persia and Transoxania. In the middle and south of Mesopotamia the Parthians looked well over the irrigation systems. In northeastern part of Mesopotamia and in Transoxiana the Kariz underground systems were used and maintained for the water supply of agriculture. The maintenance of all these systems was an important task of the Parthian Empire, often hinting on the strength or weakness of the government in certain periods of its history. It was also the case that in times of chaos and destabilization, that the maintenance of both the Kariz and the irrigation canals were neglected, causing further problems by weakening the agrarian, economy and causing further destabilization. Land tenure during the Parthian era did not differ much from the Babylonian or the Achaemenids eras. There were always two groups of people, either landlords or landless population, owners with large land holdings, usually members of the nobility and the court, controlled most of the productive land in the empire and, therefore families having such vast land areas would provide the basis of the later decentralized system under the Parthians. Another class of

land-owning gentry, called the Azatan, also existed who were entitled to royal property in exchange for military service. The Azatan cavalry formed the hard core of the Parthian army and was mainly responsible for the Parthian success in external wars and in the quick initial expansion of the empire.

Keywords: Greeks, Sassanids, Achaemenid Empire, Alexander, Iraq

1. The Greeks and the Sassanids

A new era for Mesopotamia and the near east was inaugurated at the rise of *Alexander the Great (Alexander III of Macedon)*. Following the steps of his father Philip by uniting all Greek cities and quelling dissidents, he then directed his attention towards the east where the *Persians* posed a major threat to Greece. He led 35,000 soldiers across the *Hellespont* into Anatolia, Figure 45. In a battle at Granicus River (334 BC), he managed to destroy the *Persian* army sent to meet him by *Darius III* the king of *Persia*. *Alexander* continued his charge instead of waiting for the *Persians* to make the next move and a huge army of between 50,000 and 75,000 men, which was led by *Darius III* himself was ready to meet him in *Issus*.

The battle was fierce and swift, and to avoid capture *Darius* fled followed by his panicked army. This victory gave *Alexander* control over Anatolia, and that was in 333 BC. From there he left to conquer the coastal towns of *Phoenicia* to secure his back from the threats of the *Persian* fleets. He laid siege on *Tyre*, entered it in 332 BC, and moved to *Gaza*, which was taken after three unsuccessful assaults on its fortress. In a swift move, he marched into *Egypt* where the Egyptians, who hated the *Persians*, welcomed him as their king, placed him on the throne of the Pharaohs, giving him the crown of Upper and Lower Egypt.

Upon his return from Egypt *Alexander* focused then his attention towards the east, where the heartland of the *Persian Empire* was. He crossed the Euphrates and then the Tigris at upper Mesopotamia and marched forwards to where *Darius* was waiting for him again with a great army at *Gaugamela*. The two armies fought a bitter battle marking *Alexander's* victory in October (331 BC). The battle of *Gaugamela* also known as the *Battle of Arbela* was fought actually at about 75 kilometres north-west of *Erbil* close to the city of Duhok in the present day Iraqi Kurdistan. *Erbil* itself was a flourishing town since the *Assyrian* era which was mentioned in paper (4) in connection with the *Sinnecharib* Kariz irrigation project. This victory marked the transfer of Mesopotamia from the *Persian* to the *Greek* hands. In his following march *Alexander* made his way to *Babylon* taking the Royal Road, passing through inhabited region rich in supplies. The Roman historians *Quintus Curtus Rufus* (mid-1st century AD), in his book translated and printed in 1809 described the countryside along the trail to *Babylon* by the following:

“His road lay over levels. The pasturage between the Tigris and the Euphrates is represented as so rich and luxuriant, that the inhabitants restrain the cattle feeding, lest they should die by a surfeit. The cause of this fertility is the humidity circulated through the soil by subterranean streams, replenished from the two rivers” ^{[1], [2]}.

Babylon, renowned and ancient city, strongly fortified was embellished by the preceding dynasties that ruled from it. It was the capital of the *Satrapy of Babylonia* even since *Cyrus the Great*. It was also one of the Great Kings' palaces sites. Lying at the heart of a region made arable by irrigation, *Babylon* was a very wealthy city, as were its religious shrines. It was run like great estates by administrations drawn from local artisans and owned mostly by the king and the nobility. Instead of resistance, the *Satrap Mazaes* rode out with his sons to meet *Alexander*, escorted by the city's civic and religious leaders. This move and the presentation of rich gifts were clearly a token of submission [3].

Staying for a short period in *Babylon*, *Alexander* left after leaving a military force under Macedonian command and reinstating *Mazaes* as the *Satrap of Babylonia*. His new destination was *Susa* at the heart of *Persia*, which surrendered to him in early 330 BC. Finally, *Persepolis* and *Pasargadae* fell while *Darius* was at *Ecbatana*. Learning of the *Alexander's* approaching army he retreated to *Bactria* where he was murdered on July 330 BC by *Ochus*; an officer of his own guards, who was in turn crucified by *Alexander*.

Even with the death of *Darius* the empire did not, strictly speaking, end. *Alexander* reigned in Iran as *Artaxerxes V*, and adopted Persian ways and customs and religion, although he was never *Zoroastrian*. The ambitious *Alexander* continued his drive and invaded *India* in 326 BC, winning an important victory over the *Pauravas*, in the present *Punjab* region in the northwestern part of the *Indian subcontinent*, at the battle of the *Hydaspes*. He eventually turned back to *Babylon* and arrived there in April 323BC at the demand of his homesick troops. The Map in Figure 45 shows the route of *Alexander's* progress, which marked the extent of the *Hellenic advance* in *Asia*.

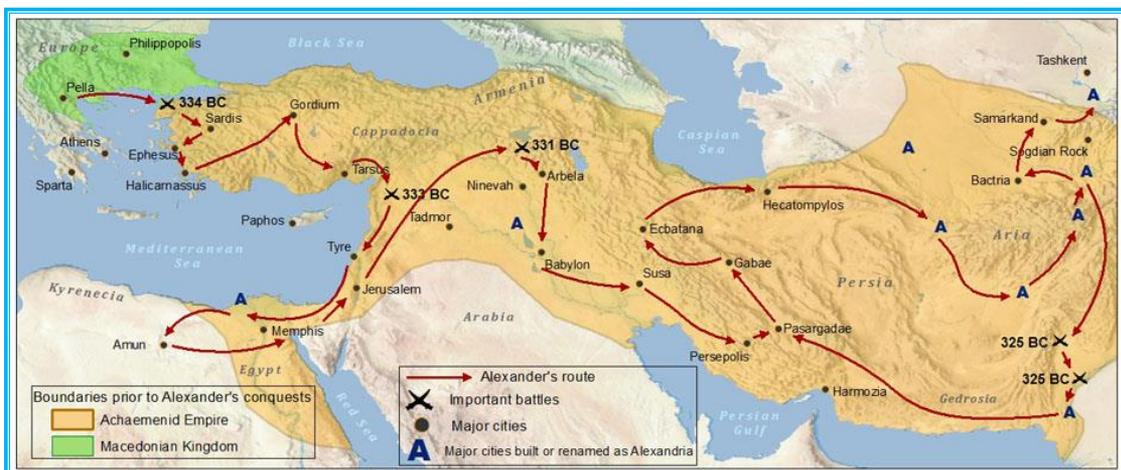


Figure 45: Alexander the great route of his military conquests.

In his administration, *Alexander* was very shrewd. He adapted the local habits and religions of the regions he conquered and even showed himself as a *Persian* king in his clothing and actions and got married to the most beautiful *Roxana*. She was the daughter of a *Bactrian* chief *Oxyartes* who was taken captive with his family during the assault on *Sodigana* at *Alexander's* advance in *Persia* in his 328 BC campaign [4]. Moreover, *Alexander* did not change the *Persian* laws current at the time, nor altered the administrative system of the agricultural lands or ownership and tenure, and he knew well that the most important source of *Babylonian* wealth was irrigated agriculture. Although he did not live long enough in *Babylon* which he had planned to make as his capital, he actually had grand plans for the city and for the surroundings. The first public work *Alexander the Great* undertook in *Babylon* was the excavation of a new head reach canal on solid ground for the *Pallacopas*.

The canal known as *Pallacopas*, originally *Pallukkatu* was in existence at least by the 6th century B.C. as attested by cuneiform documentation. It served as a mean of preventing the agricultural lands along the river *Euphrates* and the city of *Babylon* on its banks from becoming flooded when the river rose in the spring.

Early travelers to this region made the first mention of the remnants of this canal in their writings, which appeared during the 16th and 17th century. This “rediscovery” is attributed to the famous Danish explorer/mathematician *Carsten Niebuhr* who was the sole survivor of the Danish expedition to the Near East of 1761.

In 1765, when passing through *Iraq*, he noticed what seemed to be the remnants of a large canal lying west of the *Euphrates*, named *Dsjarri Zâade*. He assumed the canal ran from *Hit*, on the Middle *Euphrates*, to the *Persian Gulf*, but this view was not unanimously accepted. Thus, the 1799 map by *Dean Vincent* showed the canal under the name of *Sa'deh* running from the lower *Euphrates* rather than from *Hit*, and indicated the ‘*Pallacopas of Nieb.*’ originating below *Hillah* (and thus below *Babylon*), which was a clear alteration of the original image.

During the following years, a lot of discussion and arguments raged on the actual location and the course of this canal. Numerous examples of this can be noted throughout the 19th century writings. For instance, *J. W. Winchester*, the doctor on the famous *Euphrates* expedition, which would bring steamboat navigation to the *Euphrates* and the *Tigris*, noticed a large canal leaving the river some 36 miles north of *Babylon*. He suggested that this was probably the head of the *Pallacopas*, regardless of the fact that, as he was travelling on the river, he never actually observed more than this head reach [5]. *James Macdonald Kinneir*, who wrote his *Geographie Memoir on the Persian Empire* in 1813, wrote on the nature and the location of the *Pallacopas*, which he claimed to contain water from the *Euphrates* to *Najaf*. Its dry bed between *Najaf*, and the *Persian Gulf* would also still have been visible. The *Pallacopas*, he stated, was abandoned after the desertion of *Kufa* during the middle ages, only to be cleared out and reopened in the late 1700s. He obviously believed that the western *Euphrates* branch was the same as the *Pallacopas*, yet he did not mention this branch by name, rather opting to state speculation as fact [6].

A similar case is presented in *James Baillie Fraser's* account of travels in the Middle East in 1834. He states that the lands between *Najaf* and *Basrah* are a vast marsh,

due to the destruction of the banks of the *Pallacopas*. The remark may go back to an actual bursting of the banks of the Euphrates and subsequent flooding of the lands along the Hindiya branch and along the lower Euphrates in the late 18th and/or early 19th centuries [7]. Certainly not the entire region between Najaf and Basrah was a swamp; but rather there were individual spots of marshland [8]. The fact remains, however, that the first public work of *Alexander* was to rectify the head reach of this canal, a sign that the head of the canal was very close to *Babylon* where he had stayed.

The problem that faced *Alexander* with respect to this canal that he wanted to solve, was concerning its head reach, which had hitherto been in sandy soil. This branch was normally dammed and kept closed in the low water seasons, but had to be opened in high floods to escape the excess waters of the Euphrates and then immediately to close it again, so that after the flood the full discharge would flow in the main stream passing *Babylon* keeping the stream full.

This closing operation was a work of extraordinary difficulty, entailing the presence of 10,000 men. What *Alexander* did was to excavate a new intake at a further up location in firmer ground, which could make the opening and closing operation much easier.

In the words of the famous British irrigation, engineer Sir William Willcocks (1917):

“Next to building a masonry barrage, solving this problem was the wisest thing he (Alexander) could have done”.

Willcocks also added that, immediately after controlling the head waters of the *Pallacopas*, *Alexander* moved down the river and constructed a massive dyke between *Babylon* branch and the Najef marshes, north of Shanafiya. He did this as a preliminary work for the reclamation of this extensive area; and the dyke can be followed today and its alignment admired [9].

To make one point clear to the reader, we may add that the *Pallacopas* is the Euphrates River branch known now as “*Shatt al- Hindiya*”.

Strabo the Greek geographer, philosopher and historian (63 BC- 24AD) gave further lengthy details on the state of hydraulic works at his time and of *Alexander* works in Mesopotamia. He implied indirectly the hard work required to open and close the mouth of the *Pallacopas* without mentioning it by name, and for other similar canals in Mesopotamia, for he stated the following:

“He also paid careful attention to the canals; for the Euphrates rises to flood-tide at the beginning of summer, beginning first to rise in the spring when the snows in Armenia melt; so that of necessity it forms lakes and deluges the ploughed lands, unless the excess of the stream, or the surface water, is distributed by means of trenches and canals, as is the case with the Nile in Egypt. Now this is the origin of the canals; but there is need of much labour to keep them up, for the soil is so deep and soft and yielding that it is easily swept out by the streams, and the plains are laid bare, and the canals are easily filled, and their mouths choked, by the silt; and thus it results again that the overflow of the waters, emptying into the plains near the sea, forms lakes and marshes and reed-beds, which last supply reeds from which all kinds of reed-vessels are woven. Some of these vessels, when smeared all over

with asphalt, can hold water, whereas the others are used in their bare state. They also make reed-sails”.

Then Strabo went on to say:

“Now it is impossible, perhaps, altogether to prevent overflows of this kind, but it is the part of good rulers to afford all possible aid. The aid required is this: to prevent most of the overflowing by means of dams, and to prevent the filling up affected by the silt, on the contrary, by keeping the canals cleared and the mouths opened up, Now the clearing of the canals is easy, but the building of dams requires the work of many hands; for, since the earth readily gives in and is soft, it does not support the silt that is brought upon it, but yields to the silt, and draws it on, along with itself, and makes the mouth hard to dam. Indeed, there is also a need of quick work in order to close the canals quickly and to prevent all the water from emptying out of them. For when they are dry up in the summer, they dry up the river too; and when the river is lowered it cannot supply the sluices with water at the time needed, since the water is needed most in summer, when the country is fiery hot, and scorched; and it makes no difference, whether the crops are submerged by the abundance of water, or are destroyed by thirst for water. At the same time, also, the voyages inland, with their many advantages, were always being thwarted by the two above-mentioned causes, and it was impossible to correct the trouble unless the mouths of the canals were quickly opened up and quickly closed, and unless the canals were regulated so that the water in them neither was excessive nor failed”^[10].

In another place, Strabo quoted Aristobulus of Cassandreia (375–301 BC), a Greek historian, who accompanied Alexander the Great in his campaigns, and served throughout as an architect and military engineer as well as a close friend of Alexander:

In describing the abundant crop yield in *Babylonia* at that time, Strabo went on:

“The country produces larger crops of barley than any other country (bearing three hundredfold, they say), and its other needs are supplied by the palm tree; for, this tree yields bread, wine, vinegar, honey, and meal; and all kinds of woven articles are supplied by that tree; and the bronze-smiths use the stones of the fruit instead of charcoal; and when soaked in water these stones are used as food for oxen and sheep which are being fattened. There is said to be a Persian song wherein are enumerated three hundred and sixty uses of the palm tree; and, as for oil, the people use mostly that of sesame, but this plant is rare in all other places”^[10].

While Alexander was back at *Babylon*, he embarked on a plan for invading *Arabia* from both land and sea. He dispatched orders to the *Phoenician* ports, directing that a very large fleet should be built; and that the ships should then be taken to pieces, and conveyed across to *Thapsakus* on the *Euphrates*, whence they would be reassembled and sail down to *Babylon*. At that place, he directed the construction of other ships from the numerous cypress trees around as well as the formation of an enormous harbor in the river at *Babylon*, adequate to the accommodation 1000 ships of war. *Mikkalus*, a *Greek* of *Kalsomines*, was sent to *Phoenicia* with 500 talents, to enlist; or to purchase seamen for the crews. It was calculated that these preparations (probably under the superintendence of *Nearchus*) would be completed

by the spring, for which period contingents were summoned to *Babylon* for the expedition against *Arabia* ^[4].

Alexander, however, did not live long enough to accomplish all his projects, and he died in mid-June 331BC, after developing fever. Historians are divided on the reason of his premature death. While some of them think, he was poisoned, others believe that he contracted typhoid or malaria during his tour of the marshes of *Mesopotamia* to find the best water route to the Gulf in preparation for invading *Arabia* from the sea ^[11]. His wife *Roxana* survived him.

Soon after *Alexander*'s death conflict over choosing his successor broke out between his top generals. A temporary arrangement in which *Arrhidaeus*, *Alexander*'s half-brother, who was 34 years old but suffered from epilepsy and was considered feeble minded, was made king and sharing power with *Alexander*'s son (*Alexander IV*). *Perdiccas* was appointed as *Chiliarch* (basically Prime Minister) and the provinces of the empire were divided and handed out to *Macedonian* generals and loyal *Persians*.

Antipater was named as regent and *Craterus* was named as *Guardian* of the king. *Eumenes*, *Alexander*'s secretary, was given the province of Cappadocia to govern. This arrangement lasted for almost two years until 320 BC, when the generals realized that *Perdiccas* was going to set himself up as sole ruler of the empire. This led to a series of battles, which started in May 320 BC and continued over the next two decades and finished by the division of *Alexander Empire* into five empires or kingdoms, Figure 46.

Persia, *Mesopotamia* and *Anatolia* passed to *Alexander*'s general *Seleucus I Nicator* (the Victor), who founded the *Seleucid Empire* (648-312BC) and who succeeded in extending it also to cover the whole region of the Fertile Crescent. Various Iranian *satrapies* (vassal kingdoms) such as *Aria*, *Parthia*, *Fars*, *Media*, *Atropatene*, etc., paid taxes to the *Seleucids* but ruled with a great deal of independence.

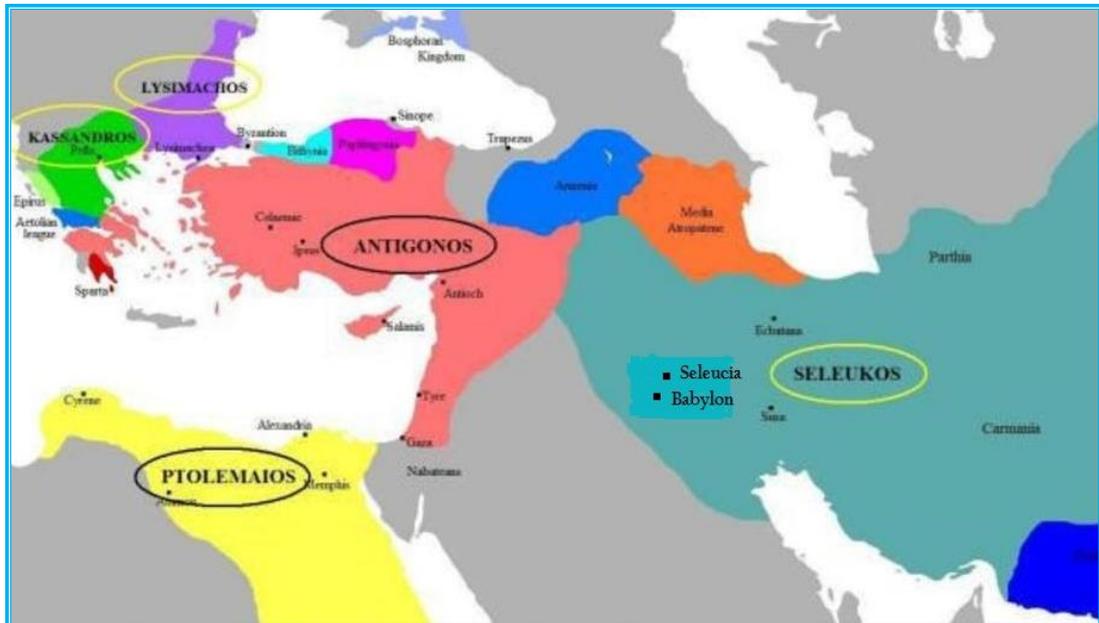


Figure 46: Alexander's Empire after its division.

Seleucus I Nicator inaugurated his reign by building a new capital for his rule, which was, *Seleucia-on-Tigris* on the western bank of the Tigris, 60 kilometers northeast of *Babylon* at the site of an older town *Opis*, not far from the confluence of Tigris and Diyala. This city was situated on the so-called *Royal Road*, which connected *Susa* with the *Assyrian* heartland and later on the *Lydian* capital *Sardes*. Ancient texts claim that the city even after it had fallen in the *Parthian* hands in 141 BC remained as a flourishing city of six hundred thousand inhabitants of *Babylonians*, *Greeks* and *Jews*. A senate of three hundred elders governed it while it still had its customs run by the *Greeks*.

In 117 AD, *Seleucia* was burned down by the *Roman Emperor Trajan* during his conquest of Mesopotamia, but the following year it was ceded back to the *Parthians* by *Trajan's* successor *Hadrian*, then was rebuilt in the *Parthian* style. It was completely destroyed by the *Roman* general *Avidius Cassius* in 165 AD.

The function of the *Seleucid Empire* in history was to give to the Near East that economic protection and order which *Persia* had provided before *Alexander*. The valleys of the Tigris and the Euphrates, the Jordan, the Orontes, the Maeander, the Halys, and the Oxus, were fertile then beyond the conception of present imagination.

In this period as it was in the preceding times the land was irrigated by a system of canals maintained under the supervision of the state. The king, the nobles, the temples or private individuals owned the land; in all cases, serfs transmitted with the land in bequest or sale or inheritance performed the labor.

Trade was based on agriculture and manufactured goods, and commerce was flourishing. Money transactions now almost completely replaced the barter system

that had survived for such a long time in past history. Bankers provided public and private credit; ships were made larger and faster, which shortened voyages by crossing the open sea. On land, the *Seleucids* developed and extended the great highways left as part of *Persia's* legacy to the east. Caravan routes converged from inner Asia upon *Seleucia*, and opened out thence to *Damascus*, *Berytus* (Beirut), and *Antioch*. It was for control of the last two routes that the *Seleucid* and *Ptolemaic* dynasties fought the six "Syrian Wars", which continued intermittently over the period (274-168 BC). These wars finally weakened them both to the point of falling vassals to Rome. The prime and most important basis of all this prosperity remained, however, depended on the agricultural infrastructure, which was kept in good working order by continuous maintenance.

All great empires as a fact from history carry the seeds of their decline the minute they are born. After the death of *Seleucus I Nicator*, things became bad for his successors, and during the successive reigns of *Antiochos I*, *Antiochos II*, *Seleucus II* and *Seleucus III* whose death marked the end of the *Seleucid Empire* as a great power, the empire was troubled by the rebellions of *Bithynia*, *Pergamum*, *Bactria* and *Parthia*, together with the indecisive Syrian wars against the *Ptolemies*. Internal struggles began during this time, which continued until the empire's end. The *Seleucids* also had to fight the *Galatians* who devastated Anatolia, and also against rebellious elements at all levels. *Seleucids* collided with the *Romans* during the reign of *Antiochos III* in (190 BC) not without disastrous results, but the final blow which ended this empire was delivered by the invasion of the *Armenian King Tigranes II* in (83 BC). Even if after *Tigranes*, if some rulers of Syria claimed to be *Seleucid* kings, they were no more than Roman vassals. The influence and marks of the *Seleucids* culture on Mesopotamia were clearly traced all over *Babylonia* and *Assyria*, from *Seleucia-on-Tigris* to other Mesopotamian cities, and archeological excavations uncovered remains from the *Seleucid's* period in *Uruk (Warka)*, *Ur*, *Nippur*, and *Babylon*, in addition to *Nineveh* and *Nimrod* ^[12]. The end of the *Seleucid Empire* in Mesopotamia led the way to the second Persian occupation of this land.

Mesopotamia, as may be observed from its long history, remained always during these times at the middle of conflicts between empires dominating it and new rising tribal forces seeking to ascertain their identities and achieve their aspirations for independence and forming their own kingdoms and empires.

This was the case with the *Parthians*, another People from the *Persian* heartland, who had rebelled against the *Seleucids* and succeeded in forming their own empire. Giving a brief history of the rise and fall of this empire may be justified on the ground of its long domination of Mesopotamia which lasted for almost five hundred years and the changes it brought to this land.

The *Parthian Empire*, (247 BC- 224 AD), which is also called in some references as the *Arasacid Empire*, became a major political and cultural power in ancient *Persia* and Mesopotamia. This took place after *Arsaces I* of *Parthia*, who as the leader of the *Parni* tribe, had established the kingdom in the mid-third century BC after he had conquered the region of *Parthia* in *Persia's* northeast which was then a

satrapy (province) of the *Seleucian Empire*.

In the following years, it was *Mithridates I of Parthia* (171–138 BC) who formed the empire by seizing *Media* and Mesopotamia from the *Seleucids*. At its height, the *Parthian Empire* stretched from the northern reaches of the Euphrates, in what is now central-eastern Turkey, to eastern Iran, and the empire being located on the Silk Road trade route between the *Roman Empire* in the Mediterranean basin and the *Han Empire* of China, became the center of trade and commerce. The rulers bore the title of "King of Kings"; as they had accepted many local kings as vassals within the empire. The royal court, however, did appoint a small number of *satraps*, largely for provinces outside Iran, but these *satrapies* were small and not so powerful.

With the expansion of the *Parthians* Empire, they moved their capital to *Ctesiphon* on the eastern bank of the Tigris River opposite to *Seleucia-on-Tigris* in 58 BC, which remained the capital until it passed to the hands of the next *Persian* dynasty; the *Sassanids*. In its expansion towards the west, the empire came into conflict with the kingdom of *Armenia*, and eventually with the late Roman Republic whereby in the battles of *Carrhae* in 53 BC, and in (40–39 BC the *Parthian* forces captured the whole of the *Levant* except *Tyre* from the Romans. But the following years were years of recurrent wars with the Romans, who had invaded Mesopotamia many times during these wars. The Romans captured the cities of *Seleucia* and *Ctesiphon* on multiple occasions during these conflicts, but were never able to hold on to them. Frequent civil wars between *Parthian* contenders to the throne proved more dangerous to the empire's stability than a foreign invasions, and *Parthian* power evaporated when *Ardashir I*, ruler of *Estakhr* in *Fars*, revolted against the *Parthians* and killed their last ruler *Artabanus V*, in 224 AD. *Ardashir* established the *Sassanid Empire* (AD224- 651), which ruled *Persia* and much of the near east until the Muslim conquests of the 7th century AD.

The *Parthian Empire* enjoyed central location between China and the near east and controlled the road between *Mesopotamia*, *Persia's* lowland and *Transoxiana*, which is known in the Arabic sources as (*Mā Warā an-Nahr*) corresponding with modern day Uzbekistan, Tajikistan and southwest Kazakhstan.

Trade had played an important role in the economy of the empire and at the same time traditional economic activities in Mesopotamia during this period continued to be based on agriculture and trading with the abundant agricultural products. So, irrigation continued to have an important role in shaping the lives of most of the population and in generating exuberant revenue to the treasury and remained as major source of income to the empire.

As in most of all the times of the previous empires, the *Parthians* continued watching over the irrigation networks, which they had inherited in Mesopotamia and in the southwestern lowlands of *Persia*. Economic prosperity within the *Parthian Empire* was directly related to the upkeep of the irrigation systems and agricultural practices. *Mesopotamia* and the *Persian lowlands* were the traditional centers of growing wheat, barley, and other cereals, while dates and other fruits were regularly produced and often exported in large quantities. In the highlands of northeastern part of Mesopotamia and the *Persian* plateau pastoralism and other

forms of animal husbandry formed a major part of the agrarian activities and rain fed irrigation was practiced in growing various types of grain, most importantly wheat; and growing fruits was also common. An earlier presence of rice in west Asia, especially Mesopotamia might have led to the same in eastern *Persia* and *Transoxania*.

The vast *Parthian* territories, much like the earlier and later empires of the region, were homes to people following many different lifestyles. Mesopotamia and the western sections of the *Persian Plateau* had been centers of settled population and agricultural civilizations which continued in the same way as before, while the traditionally nomadic northeast held on to its pastoral lifestyle. In *Elam* and *Mesopotamia*, human life was concentrated around agricultural villages in irrigated plains, often dotted with large urban centers such as *Babylon* and *Susa*. These areas were the most densely populated parts of the empire and were economically most productive, both in agriculture and commerce; the latter concentrated in towns and cities. Agriculture was made possible by complicated irrigation canals that watered the fertile but water-poor soil. In the highlands, mostly in the central *Persian Plateau* and northeast Mesopotamia, the poor soil farming was supplemented by a well-organized cattle breeding and occasional nomadic pastoral production.

The highland farming yielded more fruits and some grain production, but its major agricultural contribution was in form of animal products of all sorts which often distinguished it in commerce as well. Sheep, Cows, goats and water buffalos yielded dairy products not to mention also meat, wool and leather.

Guaranteeing of water supply, particularly in the agriculturally active Mesopotamia, was among the most important functions of successful empires in this part of the world. From the *Sumerian* times, the success or failure of every empire in Mesopotamia was closely tied to its ability to control the water flow of Tigris and Euphrates Rivers, and their tributaries.

This was also the case under the *Parthian* rule. Maintenance of already existing canals and digging of new ones was central occupation for the *Parthian Empire* in Mesopotamia, but in the central valleys of the *Persian Plateau*, northeastern part of Mesopotamia and in *Transoxiana*, the *Kariz* underground systems were used and maintained for the water supply of agriculture and personal use. The maintenance of these systems required more man-power than the Mesopotamian irrigation canals and was thus another important task of the *Parthian Empire*, often hinting on the strength or weakness of the government in certain periods of its history. It was also often the case that in times of chaos and destabilization, the maintenance of both the *Kariz* and the irrigation canals were neglected, causing further problems by weakening agriculture and thus the economy and causing further destabilization.

Land tenure during the *Parthian* period did not differ much from the *Babylonian* or the *Achaemenids* times. Generally, there were the rich landlords and the less affluent or the poor population. Owners with large land holdings, usually members of the nobility and the Royal Court controlled most of the productive land in the empire; and, therefore, families having such vast land areas would provide the basis of the later decentralized system under the *Parthians*. Small land-owners consisted of

village chiefs and petty farmers. These village chiefs usually wielded much local power and often acted as agents of the nobility in managing their lands as well. Land was thus rented to the peasants who were entitled to the products of their labor and had to pay rent for the use of the agricultural land. Local chiefs were also responsible for the collection of taxes, which were often paid in kind. Another class of land-owning gentry, called the *Azatan*, also existed who were entitled to royal property in exchange for military service.

The *Azatan* cavalry formed the central core of the *Parthian* army and was mainly responsible for the *Parthian* success in external wars and in the quick initial expansion of the empire. The Empire was however, not very centralized, and as it may be imagined there were several languages, several peoples and several administrations, but the loose ties between the different parts were the key not to its survival only but finally to its collapse also. In the history of the empire, more precisely in the second century AD, the most important capital *Ctesiphon* was captured not less than three times by the *Romans* (in 116, 165 and 198 AD), but the empire survived because there were other centers where the empire could hold on. On the other hand, the fact that the empire was a mere conglomerate of kingdoms, provinces, and city-states could at times seriously weaken the *Parthian* state as a whole. This explains why the *Parthian* expansion came to an end after the conquest of Mesopotamia and *Persia*.

The end of the loosely organized *Parthian Empire* came when its last king was defeated by one of his vassals named Ardeshir, son of the priest *Papak*, who claimed descent from the legendary hero *Sassan* and had become the *Parthian* governor in the *Achaemenid* home province of *Persis (Fars)*. In (224 AD) he overthrew the last *Parthian* king (*Vologases V*) and established the *Sassanid* dynasty, which was to last more than 400 years ^[13].

The *Sassanians* in their turn established an empire roughly within the frontiers achieved previously by the *Achaemenids*, Figure 47, with the capital at *Ctesiphon*, and they consciously sought to resuscitate the *Persian* traditions and to obliterate the *Greek* cultural influence. Considerable centralization, ambitious urban planning, agricultural development, and technological improvements characterized their rule. *Sassanians* rulers adopted the title of *Shahanshah* (king of kings), as sovereigns over numerous petty rulers, known as *Shahrdars*. Historians believe that society was divided into four classes: the priests, warriors, secretaries, and commoners. The royal princes, petty rulers, great property owners, and priests together constituted a privileged stratum, and the social system appears to have been fairly rigid and the *Sassanians* who inherited the economic conditions left by the *Parthians*, were quick to forge an economic state so powerful and distinctive that its fame spread well beyond their political frontiers and their period. The economy was fundamentally conditioned by two sets of factors: natural elements and human intervention. Among the former were climate, topography, water streams, fertility of the soil, richness of the subsoil, and availability of water and among the latter were the activities of peasants, administrators, priests, nobles, and rulers, as well as the impact of foreign relations.

The *Sassanian Empire* has often been considered as a centralized state, but as far as the economy was concerned, state control remained at the beginnings relatively circumscribed. Royals were comfortable with running their own lands while most of the economic activities were in the hands of private citizens. The government at these early times was more concerned with the collection of taxes, levies, and customs duties from these activities, but the revenues from part of its territories remained outside its control, in particular, the large estates in the hands of powerful nobles. This could not be tolerated by later kings, and it must have been the reason which led to a new policy of centralization that culminated in the administrative reorganization by *Kavadh I* who reigned intermittently between (488- 496 AD) and (498- 531 AD) and *Khosar I* (531-579 AD) before successfully bringing the entire country under direct control ^[14]. During *Sassanian* period, Mesopotamia reached the climax of its development throughout its whole history so far. According to (Adams (1965) ^[15], this was a direct result from the centralized policy of governance, which was supported by military successes on the frontiers against *Byzantium* and showed itself in centralized planning. This was also strengthened by the desire to reform the fiscal bases of the empire.

Clear relationship can be traced in this period between the economic situation and successes in the agricultural fields which was due to changes in the agricultural land ownership and taxation of agricultural lands and crops.

The king mainly owned the land, the nobility, and the kings tended to build new royal cities and extend royal ownership of land and agricultural districts around them, which were hitherto indirectly taxed or escaped taxation. One example of this was *Ardashir I* (224- 240 AD) who put all the newly won territories under his direct rule and established new cities in his name.

The first step that *Ardashir I* had taken in his reform policy was to carry out an extensive survey and measurement of cultivated lands and registering them for the purpose of better tax collection. Taxes that were levied previously on urban land holdings that were under direct royal control were extended under his rule to all other holdings, then a specialized system of taxation was applied to the lands according to the crop type raised and the productivity of these lands. Examples of the tax rates applied some rates may be cited; lands growing wheat and barley were taxed at a rate of one dirham per jarib (0.1592 hactar), for rice, it was a five- sixth of a dirham, seven dirham for lucerne or clover, and eighth for grapevines. Six olive trees or ordinary palms were also taxed one dirham. Actions to increase profitability such as tax rates schedules favored the expansion of summer cultivation or shift to crops with a greater unit value. Later on during the reign of *Kubadh I* near the end of 5th century AD this taxation system was extended and tax rates were applied on the area of the cultivated land regardless of its fertility or state of cultivation resulting in a tremendous increase of revenue so that it amounted then to one hundred million dirhams per year.

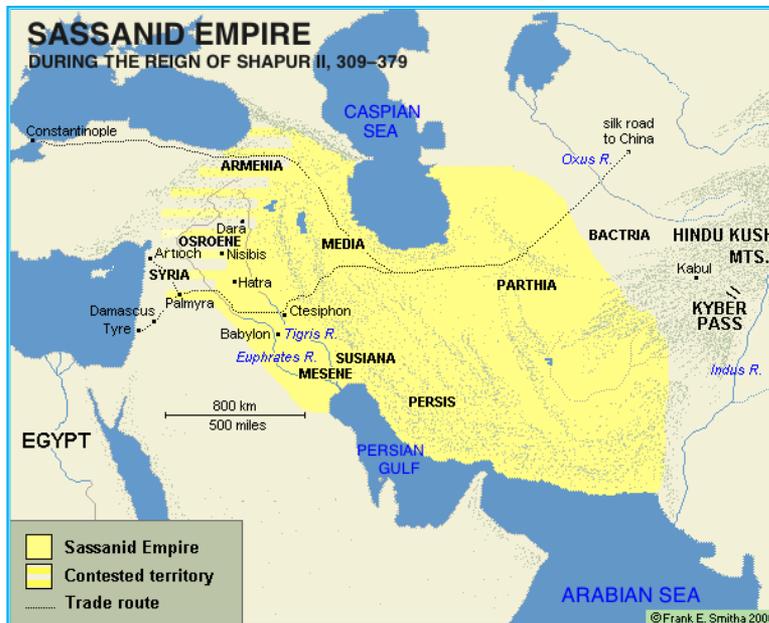


Figure 47: The Sassanian Empire during the reign of Shapur II (309-379).

After *Kubadh I*, as his son *Khusraw I Anushirwan*, took the throne, the whole empire, including Mesopotamia flourished as a direct result of his reform policies and to the prevalence of security and rule of law, and tax revenue during his time reached two hundred and seventy million dirhams ^[16]. The surplus money thus collected made it possible to embark on extensive construction and renovation of irrigation works especially in Mesopotamia and the low lands of south west *Persia* (Khuzestan). The capital investment spent on the agricultural development which included local investment and labor, was mainly devoted to the irrigation systems, improved field canalization and drainage.

A great deal of information on the agriculture in Mesopotamia during the *Sassanians* period could be derived from the collection of writings of the Jewish rabbis who participated in the compilation of the *Babylonian Talmud*. They had described the life of the Jewish communities and settlements in *Babylonia* on the transverse canals connecting the Euphrates with the Tigris during the third and fourth centuries when the *Sassanians Empire* was at its greatest times ^[15] and so revealing much of the general condition surrounding them.

According this information, it appears that wheat was the staple crop, at least in wealthy families' homes. Following in order were barley, spelt, rye, oats, rice and millet. Pulses were also considered important, and following them in order was the cultivation of all sorts of vines, dates, sesame, flax, vegetables. Animal husbandry included breeding and fattening sheep, cows and oxen, chickens, ducks and geese. Cultivation practices, which were described, included fallow irrigation and crop rotation, intercropping of grain and vines, and cross plowing by oxen. Irrigation canals were spread everywhere, and lift irrigation was used on many of these canals

where it was needed. Manuring of fields was wide spread, usually by arrangement between a land owner and a herd owner covering the maintenance of a flock in a particular field, and perhaps because of the extensiveness of this practice, fields were fenced.

Apart from keeping the canal network in good working conditions by repair works and cleaning them from silt, many of the *Sassanian* kings constructed new canals. We are told that *Khusraw I Anushirwan* (531- 579 AD) or *Khusraw the Just* as some historians like to call him had excavated a new canal named (*Al- Katul*). It branched from the eastern side of the Tigris upstream of *Sammara* and poured into *al-Nahravn* canal supplementing its flow and making it possible to cultivate all the land located above the town of *Nahravn* and extended to the eastern bank of the Tigris. Construction of many other canals in Mesopotamia was also attributed to *Khusraw*, including one canal close to *Ctesiphon*, which was called the *Din* canal [16].

In spite of all the successes that the Sassanids had achieved, there were also periods of failures and weaknesses, which had hit public works, including irrigation systems and flood protection works. Mesopotamia, as well as other parts of the empire suffered from neglect and lack of attention and maintenance in such periods resulting in some irreversible changes. An account of such changes was reported by the Arab geographer and historian (*Al- Baladhuri*) who lived during the *Islamic era* following the Sassanid period and reported one of the most important historical events, which changed the geography of lower Mesopotamia and led to the formation of the ‘*Great Swamp*’ called in Arabic ‘*Al Batayih*’. This swamp did not exist on such large scale before during the *Sassanid* period, but it grew in area to this extent after the occurrence of a flood event in the reign of the *Sassanid* king *khusraw II Parwiz* (The Victor) (590-628AD). This ‘*Great Swamp*’ covered at the time of (*Al Baladhuri*) an area of 50 miles across and 200 miles in length, and came down to the neighborhood of Basrah. It got its constant supply of water from the Tigris River some 60 miles below Wasit close to present day city of Kut in addition to irrigation channels, which ended in it.

In his description of this event (*Al Baladhuri*) reported the following:

“during the reign of Kubadh I, the Sassanian king who reigned near the end of 5th century AD, the dykes existing along the Tigris channel, as it then ran, having been for many years neglected, waters suddenly rose, and pouring through a number of breaches flooded all the low-lying lands to the south and southwest but finally the breaches were closed with difficulty. During the reign of Khusraw I Anushirwan (531- 579), son of Kubadh, the dykes were partially repaired and the lands brought back to cultivate; but under Khusraw Parwiz, the contemporary of the prophet Muhammad, and in about the year 7 or 8 after the Flight (Hejra) (629 AD) the Euphrates and the Tigris rose again simultaneously, and in such a flood as had never happened before. Both rivers burst their dykes in innumerable places, and finally laid all the surrounding country under water”.

A-l Baladhuri then adds:

“King Parwiz himself, when too late, superintended the re-setting of the

dykes, sparing neither treasure nor men's lives; indeed, he crucified in one day forty dyke-men, at a certain breach, and yet was unable to master the flood. The waters could in no possible way get back, and the swamps thus formed became permanent; for during the succeeding years of anarchy the Sassanian monarchy perished, the dykes, such as still existed, naturally remained uncared for, and breaches came in all the embankments, as no one gave heed, and the Dihkans (namely the Persian nobles, who were the landlords) were less to repair the dykes, so that the swamps continued to be lengthened and widened”.

Another historian (*Ibn Rustah*) of the 9th century described one more aspect of this flood event reporting how subsequently under the late *Sassanians* the Tigris River changed its course as it had done so many times during history, but this time the Tigris River beyond *Madharaya* (village known now as Kut Al-Amarah) abandoned its eastern course and shifted to the western channel (Shatt al Hayy which is known today as (Shatt Al Garaf). This change in the river course had turned the country bordering the older eastern course into a desert, and so it remained in the 9th century. After the event of the floods so described by *Al-Baladuri* and *Ibn Rustah*, the lower Tigris remained in its western course in all the centuries during the *Abbasid Khilafa* and poured into swamps down the western channel past Wasit ^[17], and the Great Swamp took its permanent present extent as it is today. But to add to the reader knowledge, it was on this branch that the city of Wasit was built later on after the Islamic conquest of Iraq. Sometime in the fifteen century, however, the Tigris River went back to its original course and Wasit was deserted.

The canalization systems during the *Sassanian* times which were inherited later by the State of the *Abbasid Khilafa* was vividly described in a book by *LeStrange*, who wrote it basing his account on the writings of Muslim authors of the *Abbasid* period and he could state the following:

“The existence of the Great Swamp and the consequent change in the courses of both Euphrates and Tigris is the chief matter of note in the physical conditions of lower Mesopotamia during the Khilafa; but of almost equal importance, was the system of canalization inherited by the Arabs when, after the conquest, they took over the country from the Persians. Briefly, as already stated, find that “Iraq” north of the swamp, and between the two rivers, was then traversed, like the bars of a gridiron, by a succession of canals, which drained eastward into the Tigris; while east of the Tigris a canal, 200 miles in length, called Nahrawn, starting from below of Tikrit and re-entering the river fifty miles north of Wasit. This effected the irrigation of the lands on the further or Persian side of the Tigris”^[17].

In another testimony given by the British Engineer Sir William Willcocks, who studied the conditions of irrigation in Iraq at the beginning of the twentieth century, he said:

“Perhaps the greatest prosperity witnessed by the delta of Iraq was in the days of the Sassanian Persians in the first Christian era. At this time, Al Nahrawn canal, which was four hundred feet in width and fifteen feet in depth, irrigated the whole area east of the Tigris River, and the Dujail River (Canal) irrigated the entire region west of the river. As for the four canals mentioned by Xenophon, which

flowed out of the Euphrates, and the other canals which derived their water from the Babylonian branch near to Babylon, they all irrigated the area that extended to the old Tigris river course or the Hay River (Present day AlGaraf River). It was Amyan Merklan, who visited Iraq in the fifth century after Christ, who described to us the conditions of this region, and reported that it was a forest of greeneries, which extended all the way from one end to the other”^[9].

The Sasanian provinces of Iraq and Khuzestan in the low land of southwest Persia were among the first regions to be conquered by the Muslim Arabs, and they were major agricultural zones, which the Sassanians had paid exceptional attention to, and invested heavily in making them agricultural heavens with high productivity rates that could be taxed efficiently. Both Khuzestan along with Iraq were the breadbaskets of the Sasanian Empire, and they were the most important regions to every empire that ruled those two regions. The two regions were the scene of great imperial contributions and enormous agricultural investments during the Sasanian times. Khuzestan was the second most vital province of Ērānšahr (Iran), after Āsōristān or Iraq and its conquest by the Muslims was a huge blow to the Sassanians [18].

All of these accounts testify to the great extent of irrigation systems in Mesopotamia during the Sasanian times, but it should be kept in mind that these works mostly had passed to the Sassanians as a heritage from the previous empires which in more than one case date back to Babylon.

In all fairness, it must be mentioned, however, that the Sassanians spared no effort in developing these systems and keeping them in good working conditions. Water and water works were always central themes of the Sasanian Kings works. This fact is clearly reflected, not only in actual works by themselves, but also shown in the Sasanian water law, which was current in those days.

One of the most important surviving legal sources from the Sasanian period is ‘The Book of a Thousand Judgments: a Sasanian Law Book’, which is a compilation of legal cases composed during the reign of Khusraw I and derived its legitimacy from the Zoroastrian Avesta.

Beyond religious interpretations, this Law Book revealed the high level of centralization achieved by the time of Khusraw I. The sophisticated and thorough treatment of legal rights reflected Sasanian irrigation management practices and as an example, one of the papers was on a particular legal case regarding water rights during the Sasanian era, which had transpired in Mesopotamia, and it revolved on partner’s sharing of irrigation water sources.

Indeed, due to the large presence of the Sassanians in Mesopotamia, scholars can follow the Sasanian law from the Babylonian Talmud, which is a central rabbinic text, second only to the Torah in the Jewish faith since the Babylonian Talmud was compiled by Jews living in Mesopotamia during the course of Sasanian rule from the 3rd to the 5th centuries. In this way, therefore, the Talmud recounts many legal and even cultural aspects of the Sasanian Empire ^[19].

Dr. Yaakov Elman in his analysis of the Sasanian irrigation law and management from the ancient Mesopotamian rabbinic text argues that the Persian’s hunger for

arable land was due to the aridity of the Iranian plateau; in addition, the *Babylonians* hunger for increased agriculture productivity was due to the overpopulation of Mesopotamia.

In this way, the *Sassanians* sought to maintain tight control over Mesopotamia to ensure an influx of surplus food into the arid Iranian plateau. Increased agricultural wealth in Mesopotamia also allowed for higher taxes to be collected by the *Sassanians* from this wealthy region. This had also provided support for agricultural growth, which included the construction of irrigation projects and maximizing the irrigation potential of the Euphrates and Tigris rivers. Elman notes that the *Zoroastrian* religion highly encouraged agriculture, and argues that the *Sasanian* dynasty's nearly constant war campaigns led to increased demands for agricultural productivity from areas such as Mesopotamia during times of warfare. Furthermore, based on the legal indications of water rights, Elman confirms that *Sasanian* society was highly feudalistic and even capitalist in nature. Towards the end of the dynasty, *Sasanian* kings encouraged wealthy families to invest in irrigation works. In fact, during the *Sasanian* era, canal building was a profitable business ^[20].

One more reason for the *Sassanian* dynasty kings to be so highly interested in water works was the place that water had occupied in *Zoroastrianism*. Many of the most famous *Sasanian* rock reliefs depict the water goddess *Anahita* investing the kings with holy legitimacy or "grace".

The goddess *Anahita* existed in Persia before the creation of *Zoroastrianism*, and in fact, it was only with the *Achaemenid* king, *Artaxerxes II* (404-358 BC) that *Anahita* became incorporated into this faith. *Artaxerxes* commissioned the spread of images and temples dedicated to *Anahita* throughout his empire.

The area of modern day *Armenia* became a center for the *Anahita* cult and *Armenia* was the birthplace of the *qanāt* or *karez* system, the ancient irrigation technology that to this day nourishes arid soils throughout the expanse of the former *Persian Empires*. We may say therefore, that water was integral, both spiritually and materially to ancient *Persians* and this was another driving element in water works development in the *Sassanian* period.

The *Sassanian Empire* continued to rule vast territories of the of old world for more than 400 years. It occupied some of the wealthiest regions of those days which included the prosperous Mesopotamia, the rich agricultural lands of southwest Persia and other extensive fertile lands in the east and north while irrigation canal networks in these regions continued to function well and produce every possible sort of crop in abundance.

The *qanāt* or *karez* systems were constructed in a most extensive fashion all over *Persia* where topography was suitable and this development was brought about by the sanctification of water by *Zoroastrianism*.

Apart from all this, the Empire had full control over the trade routes between east and west, which had added to its wealth and strength. The *Sassanian* Empire also had the might, vigor and the military strength, which allowed it to expand and defend its borders, and also to crush all uprisings and dissidents within it and keep the unity of its land. However, when any empire ages, it is like any other living

organism; signs of weakness and decay that were dormant in the past start to appear and gradually work to overcome it and become reasons of its fall.

The fall of the *Sassanian Empire* was an outcome of the gradual disintegration of the socio-political regime that had held the empire together. As we have seen the empire was formed by an alliance between the *Persian* house of *Sassan* and the *Parthian* noble families. The latter being great feudal families who owned many large agricultural estates in the empire and provided at the same time the bulk of military manpower for the *Sassanian* armies, especially the heavy cavalry which was the backbone of the army.

This type of feudal regime allowed the nobility to have great influence on the Crown and the affairs of the State, while the socio-political reality was a good ground for corruption, court intrigue, and tyranny; as it was based on exchanging benefits between the two sides. This system gave power to the Crown, and gave at the same time fertile land, wealth and influence to the nobility. In such a situation, it was only expected that when a king would clash with the nobility, he was usually removed with not less than some chaos and upheaval. Only powerful monarch like *Khosrow I* was able to have a relatively free hand in running the affairs of the empire.

According to the new administrative reforms *Khosrow* introduced, the *Parthian* noble families were shuffled around in line with the newly introduced administrative division of the empire into four quadrants ruled by four generals; this caused disorganizing all the arrangements made by those noble families in running their vast agricultural lands and estates, and it was a very unpopular measure. It meant that one family found its agricultural lands under the rule of members from other families. In addition, *Khosrow's* reforms greatly interfered with the economic and military management of the *Parthian* realms; which hitherto were mostly private and untouched by central authority. The *Parthians* never forgot that *Khosrow I* had disrupted the 'natural order of things, so they showed their discontent and worked against his successors leaving the empire in disorder and anarchy.

We may also conclude that the question of the agricultural recourses' ownership and administration was one of the main reasons leading to the downfall of the empire. This situation in the empire was coupled with many recurrent wars along the empires borders as the *Sassanian Persians* and *Eastern Roman* empires waged wars with each other, on and off between (602 AD) and (628 AD). Though each had marginal triumphs, neither managed to conclusively destroy or subjugate the other. The general idea conveyed in most works of history, is that the cost of this long war left both empires practically helpless in a face of an unexpected and mutual enemy which was the early *Islamic Arabs*.

By the middle of the seventh century, the Muslims had devoured *Sassanian Persia*, and had reduced the *Roman Empire* to a fragment of its former self.

When the Arabs first attacked the *Sassanian Empire* in (628 AD), it was shortly after the end of the *Roman-Persian* war during the reign of the child King *Ardashir III* (628- 629 AD), when the *Persian-Parthian* confederacy was disintegrating and at a time the empire was consumed by chaos and division. The military effort against the invading Muslim Arabs lacked determination, coherence, consistency, and

strength.

Many military encounters between the *Sassanians* and the *Muslims* were fought during the reigns of *Ardashir III* and the short reign of the usurper *Shahrabaraz* (27 April to 17 June 629 AD). All of these battles ended in *Persian* defeat. The first reign of king *Borandokht* (17 June 629 to 16 June 630 AD) followed in which three more battles were fought and also lost by the *Persians*. The first and last *Persian* victory against the Arabs was won in the Battle of the Bridge (Al- Jisr) during *Borandokht* second reign (631- 632 AD) but the *Persian* could not take advantage of this victory to pursue the Arabs and destroy them. So the next battle of *Qadisiyah* in (635 AD) left the empire completely disorganized where the *Persian* army was nearly decimated, and the *Persian* leader *Rostam* was killed.

The last blow that finished the empire came in the battle *Nehavand* in (642 AD) during the reign of *Yazdgerd III* (631- 651 AD) the last king of the *Sassanian* dynasty, who himself was killed in *Marv* in (652) by people who realized that the *Sassanian* dynasty was already a thing of the past.

Therefore, the last paper on the history of once a very powerful and prosperous empire was closed to usher a new era which has continued to have its influence all over the world; namely the era of the new religion of Islam.

References

- [1] Rufus, Q. (1809). History of the life and Reign of Alexander the Great. Translated from Latin, printed in London.
<http://lweb2.loc.gov/service/gdc/scd0001/2010/20100409003hi/20100409003hi.pdf>
- [2] Crosby, W.M.H. (1854). Quintus Curtius Rufus: Life and Exploits of Alexander the Great. New York.
<https://ia802604.us.archive.org/19/items/quintuscurtiusr00cellgoog/quintuscurtiusr00cellgoog.pdf>
- [3] Briant, P. (1954). Alexander the Great: Man of Action, Man of Spirit. Translated by Jeremy Legatt. First Published 1954. Reprint published by Harry N. Abrams 1996.
https://www.goodreads.com/book/show/372962.Alexander_the_Great
- [4] Grote, G. (1809). History of Greece Military Operations and Conquests of Alexander after his winter quarter in Persia down to his death in Babylon. Vol. XII, Part II. John Murray, London.
<https://ia802205.us.archive.org/22/items/historyofgreecef12grotiala/historyofgreecef12grotiala.pdf>
- [5] Winchester, J. W. (1838). Memoir on the River Euphrates during the last Expedition of the H. C. Armed Steamer "Euphrates". Proceedings of the Bombay Geographical Society, Vol 2, pp.1-22.
[https://babel.hathitrust.org/cgi/pt?id=uc1.\\$b233979;view=1up;seq=9](https://babel.hathitrust.org/cgi/pt?id=uc1.$b233979;view=1up;seq=9)
- [6] Kinneir, J. M. (1813). Geographie Memoirs of the Persian Empire. John Murray.
<https://archive.org/details/geographicalmemo00kinnuoft>
- [7] Fraser, J. B. (1840). Travels in Kurdistan, Mesopotamia Including an Account of those Countries Hitherto Unvisited by Europeans. Richard Bentley Publishers, London, Vol 2 page 20.
https://ia800103.us.archive.org/8/items/Travel18341835FraserKoordistan/Travel_1834-1835_Fraser_Koordistan.pdf
- [8] Ooghe, B. (2006). Vision of the Pallacopas 18th-20th century. CRLV, center de Resherch sur la littérature des Vogâes.
<http://www.crlv.org/viatica/d%C3%A9cembre-2006/visions-pallacopas>
- [9] Willcocks, W. (1917). Irrigation of Mesopotamia. 2nd edition, London.
https://www.europeana.eu/portal/en/record/9200143/BibliographicResource_2000069327903.html
- [10] Strabo, (1932). The Geography of Strabo. Vol. VII Loeb Classical Library.
http://penelope.uchicago.edu/Thayer/e/roman/texts/strabo/16a*.html
- [11] Campbell, D. B. (2018). Death in Babylon, Who killed Alexander the Great? Academia.edu. downloaded on 14th May 2018.
https://www.academia.edu/1037563/Death_in_Babylon_Who_killed_Alexander_the_Great

- [12] Al-Nasiri, S. (2018). When Seleucia-on-Tigris was one of the capitals of the Hellenistic culture. Studies on Iraq cultural history, Sabah Al-Nasiri blog spot, (Arabic). Accessed on 2018-5-15
الناصرى : صباح عندما كانت سلوقية دجلة إحدى عواصم الثقافة الهيلنستية" مدونة الدكتور صباح الاصرى دراسات عن تاريخ للعراق ألتقافى
<https://sabahnassery.wordpress.com/2017/01/10/%D8%B9%D9%80%D9%86%D9%80%D8%AF%D9%85%D9%80%D8%A7-%D9%83%D9%80%D8%A7%D9%86%D9%80%D8%AA-%D8%B3%D9%80%D9%84%D9%80%D9%88%D9%82%D9%80%D9%8A%D9%80%D8%A9-%D8%AF%D8%AC%D9%80%D9%84%D9%80%D8%A9-%D8%A5%D8%AD/>
- [13] Facts and Details (2018). The Parthian Empire. Internet website, last updated April 2016, Accessed in May 2018.
http://factsanddetails.com/central-asia/Central_Asian_Topics/sub8_8a/entry-4502.html
- [14] Cervantes, A.C. (2013). Sassanian Empire. Ancient History Encyclopedia.
https://www.ancient.eu/Sasanian_Empire/
- [15] Adams, M. (1965). Heartland of Cities, Surveys of Ancient Settlement, and Land Use on the Central Floodplain of the Euphrates. Chicago, IL: University of Chicago Press.
https://oi.uchicago.edu/sites/oi.uchicago.edu/files/uploads/shared/docs/heartland_of_cities.pdf
- [16] Al- Adhami, A D. (2017). History of the Persian States in Iraq. In Arabic, Hindawi Organization for teaching and culture, Cairo
الاعظمى : علي ظريف:مؤسسة هنداوي للتعليم والثقافة القاهرة
<https://www.hindawi.org/books/48242959/>
- [17] Le Strange, G. (1905). The Land of the Eastern Caliphate. Cambridge University Press.
<https://archive.org/details/landsofeasternca00lest>
- [18] Jalalipor, S. (2018). A study of the province of Khuzestan at the time of Muslim Conquest in the Seventh Century. Master of Arts degree thesis presented to the California State University, Fullerton. Uploaded on www.Academia.edu, accessed on 28th May 2018.
https://www.academia.edu/13427130/A_Study_of_the_Sasanian_Province_of_Khuzestan_at_the_Time_of_Muslim_Conquest_in_the_Seventh_Century
- [19] Montakab, S. (2013). Irrigation Management in Ancient Iran: A survey of Sassanian Water Policies. Department of History University of California Irvine. Graduate chapter 8.
<http://docplayer.net/42326719-Irrigation-management-in-ancient-iran-a-survey-of-sasanian-water-politics.html>
- [20] Elman, Y. (2004). Up to the ears in horse neck. JSIJ 3, 95-149.
<https://www.biu.ac.il/JS/JSIJ/3-2004/Elman.pdf>