# Continuity and Change in Late Antique Irān: An Economic View of the Sasanians

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**Abstract**: Ancient economy has commonly been studied in the context of commerce and trade, less attention being paid to the production side of the economy. Additionally, artificial periodizations based on political change, including the division of Near Eastern history to the pre-Islam and Islamic periods, has prevented historians from considering issues such as economic growth in the long term. The present paper, focusing on the production side of the Sasanian economy, tries to establish certain principles and introduce possible criteria to study the economic history of the Sasanians. Regions of Khuzistan and Tokharistan/Bactria provide useful examples and comparisons for illustrating some of the points.

**Keywords**: Sasanians, Islam, Economy, Agriculture, Late Antiquity, Khuzistan, Tokhāristān, Bactria, Irān

## Introduction

The debate over continuity or break between "ancient" and"mediaeval" worlds is in a sense the *raison d'etre* of the field of "late antiquity" as a whole. The effort to straddle the historiographic "break" between the Classical/Ancient world – characterised by the classical "civilisation" – and that of the "Middle/ Dark Ages" – essentialised as the world of Christian "civilisation" is what created late antiquity as a concern in the study of late Roman history.[1] In the Roman World, arguments over the role of Christianity, Gibbons' main culprit for the decline of the Classical civilisation, are central to the whole of the debate. However, other aspects, such as political continuity of the late Roman system into the "Barbarian" states, as well as the economic continuity despite changes between the late Roman and early mediaeval Mediterranean are also considered.[2]

In the non-Roman, or properly speaking, the non-Mediterranean World, deeper studies of late antiquity have largely been lacking. Attempts were made to argue for the formation of religious commonwealth as the main feature of late antiquity (Fowden 1993) to varying degrees of success. Most successfully, scholars of early Islam demonstrated that the political system maintained a great degree of continuity from the Sasanian system to the caliphate, i.e., the Islamic one (Morony 1984) .In the economic sense, however, although much is said about the relationship between the economies of late antique powers,[3] little has been expressed pointedly about the continuity between the economic systems that extend to both sides of the supposed Islamic break in the history of the West Asia, particularly in the former territories of the Sasanian Empire and its immediate peripheries.

The present paper, then, tries to argue for a degree of economic continuity from the late Sasanian (550 CE onwards) to the early Islamic Period (roughly 750 CE) in the lands which formed the Sasanian domains and its peripheries. The paper will approach this question from both theoretical and empirical points of view, starting from arguments which it perceives have often retarded the study of economy as a viable means of understanding the debate on continuity or break in the history of the region.

1. This is a classical narrative; but a recent work towards the same end is *JHWG* Liebeschuetz. *The Decline and Fall of the Roman City*. Oxford: Oxford University Press, 2003.. The "break" debate has found some new supporters, in the form of Bryan Ward-Perkins, *The Fall of Rome and the End of Civilization*, Oxford: Oxford University Press, 2005. See Hugh Kennedy. "From Polis to Madina: Urban Change in Late Antique and Early Islamic Syria." *Past and Present* 106 (1985): 3–27, for an opposing view towards the "decline" argument, at least in urban development sense.

2. See Michael McCormick. *Origins of the European Economy: Communications and Commerce AD ,300-900*. Cambridge: Cambridge University Press, 2001.; for political continuity of the Roman World into the Barbarian one, and the subtle changes that eventually separate and distinguish both, see Patrick J. Geary, *Before France and Germany*, Oxford: Oxford University Press, 1988.

3 James Howard-Johnston. "The Two Great Powers in Late Antiquity: Comparison." In *States, Resources and Armies*, edited by Averil Cameron. Pp. 157–226. The Byzantine and Early Islamic Near East 3. Princeton: Darwin Press, 1995, provides a survey, although mostly to show the position of the Sasanians as main enemies of the Romans, eventually mattering more for the military abilities of both empires.Michael G. Morony. "Population Transfers between Sasanian Irān and the Byzantine Empire." In *La Persia E Bisanzio*. Pp. 161–79. Rome: Accademia Nazionale dei Lincei;, 2004 argues for a sort of interdependence between the two empires as far as at least one aspect of the economy, labour supply, was concerned.

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It should, however, be clear from the start that the obvious preference of the author for a continuity narrative does not discount the fact that change indeed took place, and this change in fact is at the heart of the debate that needs to be considered in studying the economic history of the late antique west Asian world.[4] However, the main contribution of the paper is to argue for this change to predate the advent of Islam, and up to a point, to have actually been a vehicle for the advancement of the political economy that is known as the Islamic one.

**Late Antique / Islamic Economy?**

In his study of early mediaeval Europe, Wickham expresses concern about the regionalism and the post-Roman historiography which divides European history into "islands, separated by treacherous channels (Wickham 2007: 4). One can argue that the issue is pointedly the opposite in the case of Sasanian Irān, where the aforementioned model of the Mediterranean World and the lack of sources have caused a lumping together of regions and a superficial imposition of a semi-national outlook on the whole history of the Sasanian period. For economic history, specifically, this has caused a widespread tendency to generalize, as mentioned before, the result of the research conducted on individual regions of the empire and to apply them wholly to the entire span of the Sasanian realm.

Another theme discussed by Wickham (2007: 3-4), that of continuity or break from the Roman Empire, seems presently to be the most important issue facing the study of early mediaeval Europe. In the Mediterranean economic history, this has mostly been reflected through the debate on economic retraction or expansion after the third century.[5] Like the Germanic invaders of Europe, the invading Muslim army are commonly treated as an "outside" force in the history of the 'Near East', and their arrival is imagined to have caused a disruption and initiated a new structure in the history of the area between the Mediterranean and the Pamirs (at least for Irān, this 'break' has been quite influential in how the history is conceptualized). In the Islamic world, continuity has been emphasized, although mostly in certain geographical or political and administrative contexts.[6] But in general, we might be able to take advantage of the relative obscurity of the history of the region or the lack of "paradigms" in order to formulate new ways of studying it. Unlike mediaeval European history which needs to present established theories by the likes of Pirenne or Dopsch (Wickham 2007: 2-4), we can take advantage of the "clean slate" in order to study the history of Central and West Asia from a fresh point of view and have the chance of creating paradigms to formulate or "frame" its study, or preferably avoid the paradigms altogether.

Nonetheless, in the fundamental question of the formation of the Islamic state, the question of the economic nature of the incipient religio-political system that came to dominate West and Central Asia in the seventh to tenth centuries cannot be ignored. Often conceptualized through the question of commercial background of the rise of Islam itself, considering the status of Mecca in particular, it has been argued by scholars such as Simon (1989) that the rise of Mecca as the predecessor to the commercial nature of the Islamic state was dependent on the policies of the great powers of the time, the Sasanian and the Byzantine states in their dealings with Arabia. Other scholars argue for a trend towards commercialization of late antique cities, particularly in Syria, and the establishment of industries and artisanal production in urban centers, even before the arrival of Islam (ef. Morony 2004: 178-9; Kennedy 1985: 14-15). One should then consider the role of the exact relationship between the economic changes in late antiquity and the mechanism of the incoming Islamic system.

**Sources for the study of Sasanian Economy**

The fact is that the Sasanian realm is commonly studied through its relation with their neighbors and largely through the eyes of its neighbors. This is mostly due to the dearth of native documents which appeal to the modern historical enquiry, at least as it is commonly understood. For the western parts of the Sasanian Empire, the most widely available sources are the testimonies of Greek and Roman historians whose concern rightfully was to describe the situation in those parts of the Sasanian realm that most pertained to the Roman or Byzantine concerns, namely Mesopotamia. For Central Asia, the situation is even more dire. While the textual evidences that exist, mostly in Chinese, have recently come to light, or at least to consideration, the history of this region is often constructed via testimonies of the same Roman sources. In this case, the Roman sources do not even benefit from the geographic proximity which might have rendered their accounts somehow credible in the case of Mesopotamia,

4. The specific issue of economic boundaries, both temporal and physical, have previously been argued in Michael G. Morony. "Economic Boundaries? Late Antiquity and Early Islam." *Journal of the Economic and Social History of the Orient* 47, 2 (2004): 166–94.

5. Most prominently, the argument for retraction was expressed by A. H. M. Jones. *The Later Roman Empire, 284-602.* Norman: University of Oklahoma Press, 1964: 1038-48. However, since then, a tendency towards seeing continuity between the Roman and late antique periods, caused by the prominence of the field of late antiquity itself, has led some to revise the narrative of economic retraction, including Cécile Morrisson and Jean-Pierre Sodini. "The Sixth-Century Economy." In *The Economic History of Byzantium*. Washington D.C.: Dumbarton Oaks, 2002; Charles R. Whittaker and Peter Garnsey. "Rural Life in the Later Roman Empire." In *The Cambridge Ancient History* 13:337–425. Cambridge: Cambridge University Press, 1998; and B. Ward-Perkins. "Urban Continuity?" In *Towns in Transition: Urban Evolution in Late Antiquity and the Early Middle Ages*, edited by Neil Christie and Simon T. Loseby. Pp. 4–17. Aldershot: Scolar Press, 1996. The last author, however, seems to have picked up the case for a break, at least in the military sense, in Bryan Ward-Perkins 2005.

6. In the debate over the continuity of Sasanian administration to the Islamic one, the most prominent has been Michael Morony. *Iraq After the Muslim Conquest*. Princeton: Princeton University Press, 1984.

and instead, they retell the history of Central Asia via many more intermediaries. Consequently, the modern effort in reconstructing Central Asian history needs to concentrate on material culture and finds of value to art history in order to present a picture of the history of this region. In this way, undeniable links and mutual influences between Central Asia and its neighbors – India, China, and Irān – have been recognized.

The first set of available sources are Roman/ Byzantine, ranging from Herodian to Ammianus Marcellinus, Procopius, Theophylact Simiocatta, and even later historians such as Theophanes the Confessor. Among these, Procopius (1914),[7] Agathias (Cameron 1970; 1969: 67-183), and Theophylact (Whitby 2002; Whitby and Whitby 1986) tend to provide the most comprehensive, and often eyewitness or at least contemporary information regarding the late Sasanian socio-economic conditions. While quite comprehensive in some respects, these sources lack the details requiredfor a deep study of Sasanian history. Thisemanates is an obvious problem, specifically because of the fact that these accounts are not meant to be histories of the Sasanians. They are, rather, histories concerned with Rome or Byzantium and its political and social, and to a lesser extent economic situation. When they do mention Irān or the Sasanians, it is in the context of the relationship with Rome/Byzantium, and naturally, often in a hostile tone and with obvious biases. These accounts also, quite expectedly, concentrate geographically on western Irān, the region of Mespotamia/Asōrestān, and those regions bordering Armenia or Iberia. Even our basic understanding of the history of eastern Irān, thousands of kilometers east of Rome's Asian territories, is also based on these Roman sources.[8]

A second category of sources are the Arabic, early Islamic narrative histories, greatly dominated by the compilation of narratives offered by al-Tabari (1999). These sources, including Baladhuri (1364/1985), Mas'udi, Hamza al-Isfahani (1961), and even a geographical treatise such as that of Ibn Hawqal (1373/1994; 1370/1991; 1345/1966) or later compilations like that of Ibn Miskawayh,[9] largely form the basic structure for our understanding of Sasanian history. These are the sources that give us some basic "facts" about the Sasanians, facts that are often deeply established and only marginally criticized. These are also the sources that give us the basic narrative of the founding of the Sasanian dynasty as a centralized state, to replace the "decentralized" (and intrinsically "unreliable") Arsacid state. These sources, particularly narratives such as those of al-Tabari, are said to have been based on original, Middle Persian sources extant in the late Sasanian period and now lost in the original. These Middle Persian *ur*-texts are also the source for the more legendary, epic tales of the *Shahnameh* of Ferdowsi[10] or the *Khamsa* of Nezami, works that also shape the popular conception of Sasanian history as well. These sources tend to detail the administrative divisions of each province and district, paying attention to urban and rural developments like dams, bridges, and canals, as well as listing the manufacturing or agricultural products of each region. Occasionally, they include tax rates from each district and quote more ancient, often claimed to be Sasanian, tax rates through several authorities.[11]

Most of the source texts of the Islamic histories were, however, composed in the sixth and seventh centuries CE, during the rule of Sasanian kings ranging from Kavad I to Yazdgird III. Consequently, the bulk of the attention in these sources, judging from their Islamic reflections, was also, not surprisingly, focused on the reforms of Kavad I and his son Khosrow II, both of them obvious efforts in centralizing the state and strengthening the imperial power. Naturally, a strong dose of anachronism occurs in the history of the earlier times and the rule of the glorious ancestors of the late Sasanian kings. Centralization, a project of the late Sasanian kings, seems to have also been an aspect of this,[12] if not for anything but for emphasizing the antiquity of the idea, possibly based on a newly developed, religious, understanding of the Sasanian historical geography. [13]

The glaring problem among the aforementioned sources, of course, is that none of them are native, contemporary sources from inside the Sasanian realm itself. To be fair, this has long been noticed and as a result, historians have been looking for alternate sources since almost the beginning of the modern historical enquiry into Sasanian history. Some of the answers have been found in various Syriac or Armenian narrative sources, still written from outside the Sasanian realm, but often in closer contact with the Sasanians than the Romans were. Armenian sources such as the histories of Lazar Parpats'i, Moses Xorenats'i and Sebeos are quite useful for understanding some of the administrative divisions of the Sasanian Empire, as well as its imperial and military elite's involvement in the economy.[14] Syriac sources such sermons, hagiographies

7. Also see Averil Cameron. *Procopius and the Sixth Century*. Berkeley; Los Angeles: University of California Press, 1985 on the specific references of Procopius to the sixth century.

8. Ammianus' account of the presence of the Chionite chief Grumbates is still our most prominent source for dating the arrival of the "Iranian Huns" in Bactria and eastern Irān; Amm. Marc.18.6.22.

9. For a detailed study of Ibn Miskawayh's unique information on the Sasanians, see Zeev Rubin. "The Reforms of Khusro Anushirwan." In S*tates, Resources and Armies*, 227–97. Princeton: Darwin Press, 1995.

10. The best edition is now, Ferdōsī. *Shāhnāmeh*. Ed. Dj. Khaleghi-Motlagh, New York: Bibliotheca Persica, 1987.

11. See, for example, Abdallah ibn Khurradadhbih. *Al-Masalik Wa Al-Mamalik*. Edited by MJ De Goeje. Bibliotheca Geographorum Arabicourm, VI. Leiden: Brill, 1889, particularly the sections about Al-Sawad.

12. The reasons for this are unclear. In a recent work, Pourshariati argues that a breakdown of an ancient "confederacy" between the Sasanian family and their "Parthian" nobility was at the heart of the reconfiguration of the late Sasanian state and the forging of a new, anti-Parthian, narrative of the foundations of the empire: Parvaneh Pourshariati. *Decline and Fall of the Sasanian Empire*: *The Sasanian-Parthian Confederacy and the Arab Conquest of Irān*. London: IB Tauris, 2008.

13. For this, see T. Daryaee, *Sasanian Sacred Geography* (forthcoming).

14. For an excellent survey of Armenian sources on the Sasanians, see now Tim Greenwood. *Sasanian Reflections in Armenian Sources.*

(Walker 2006), chronicles,[15] and meetings of church synods are also useful for these purposes. Among this category a new appreciation for Islamic, non-Arabic (mostly Persian) sources deserves a mention. Histories such as the *History of Sistan, Fārsnāmeh* of Ibn Balkhi, or the *History of Qom* are among these.[16] It is controversial as to what extent epic narratives, such as the Shahnameh, can be used as historical sources, even when concerned with the late Sasanian period (Rubin 1995).

New attention is also being paid to the value of the sources such as the inscriptions which proliferated particularly in the earlier parts of the Sasanian rule. Traditionally, Sasanian inscriptions, including the famed inscription of Shapur I on the Ka'aba Zardosht (Huyse 1999; U. Weber 2004), Narse's Paikuli inscription (Humbach and Skjaervo 1983), and Kerdir's inscriptions (MacKenzie 1970) have been studied thoroughly for their philological information, while there is much that we can still learn from them concerning the political, social, and economic history of their respective historical periods. Art history, especially as it concerned Sasanian royal reliefs, has also contributed a fair amount to our understanding of Sasanian political history.

But the most important development for the study of Sasanian history has been, and needs to continue to be, archaeology, particularly in the form of land-surveys and surface reconnaissance, which can add to a new understanding of Sasanian history and its socio-economic life.[17] Sasanian historiography is often overwhelmed by a political narrative, and equally dominated by a religious historical one. The latter is itself influenced by the wide availability of Middle Persian religious texts. These are commonly attributed to the Sasanian period based on the virtue of their use of Middle Persian, and they similarly present a unified, centrally administered religious authority, and in all likelihood, a similar later narrative attributing its antiquity to the earlier periods. Archaeology, however, can help us look at Sasanian history not from the point of view of the authorities, but rather from that of its people: the farmers, urban dwellers, soldiers, and merchants. A further contribution in this direction has also been the discoveries of material remains in the Sasanian realm and beyond. Among these are the coins, seals and seal-impressions, and documents found in various localities. While the value of coins has been for long recognized, and seals continue to be studied by scholars (Gyselen 1989; Gignoux and Gyselen 1987), the study of documents from the Sasanian period is still in its infancy. This is partially due to the recent time of their discovery, but also due to the language barriers and little communication between the disciplines of history and philology. Many of these sources, however, now seem to be more widely available because of their publication and so the time is ripe for them to be used in historical enquiry.

Below, two case studies of regions inside and outside the immediate sphere of Sasanian political power will be presented. The purpose for the choice of these two regions, Khuzistan and Tokhāristān, is to take advantage of the different types of material available for their study, from textual to archaeological and numismatic. A comparison of these two regions, despite their apparent differences, can help us see similar patterns in economic development during late antiquity, and consider the context for the rise of Islam in both of these regions following the demise of the Sasanian and local political powers.

**Economic Change in Late Antique Khuzestan**

The most prominent debate in the economic history of late Sasanian Khuzestan has been the decline debate, mostly based on the results of archaeological surveys with a limited scope (Wenke 1975-76: 31-221; Neely 2002). The idea of population decline of Late Sasanian Khuzestan and its economic retraction also seem to have much to do with the historical records from which the contexts for most of the archaeological excavations are taken. While these records in themselves will be discussed in a later chapter, and their biases or concerns better analyzed, it would here suffice to point out that the dating of the sites themselves and the decline associated with them is in direct contrast with other sources of information we possess about the economy of Khuzestan, namely evidence from archaeobotany, agricultural history, and coinage. In the

Sasanika. Beverly Hills: Afshar Press, 2008.

15. Amir Harak. *Chronicle of Zuqnin, Parts III and IV, AD 488-775*. Toronto: Pontifical Institute of Medieval Studies, 1999; Joshua the Stylite. *The Chronicle of Pseudo-Joshua the Stylite*. Translated by Frank Trombley and John W. Watt. Liverpool: Liverpool University Press, 2000. Michel le Syrien. *Chronique de Michel Le Syrien*. Translated by J. B. Chabot. Paris: Ernest Leroux, 1899; on the last one, see Michael Morony. "Michael the Syrian as a Source for Economic History." *Hugoye: Journal of Syriac Studies* 3/ 2 (2000): 141–72.

16. One should also pay attention to Bal'ami here. Often ignored as just a translation and compilation of Tabari, Bal'ami seems to have actually preserved many native Persian, possibly even oral, narratives. See, for example, A. Christensen. *Romanen om Bahrâm Tschôbîn: et Rekonstruktions-forsøg*. Copenhagen: Tillge, 1907.

17. Efforts towards this, however incomplete, will continue to benefit our understanding of Sasanian economy: Robert J. Wenke. "Imperial Investments and Agricultural Developments in Parthian and Sasanian Khuzestan: 150 BC to AD 640." *Mesopotamia* 10 (1975): 31–221; *idem*. "Western Irān in the Partho-Sasanian Period: The Imperial Transformation." In *The Archaeology of Western Irān*. Pp. 251–81. Washington D.C.: Smithsonian Press, 1987; and Robert McC. Adams and Donald P. Hansen. "Archaeological Reconnaissance and Soundings in Jundi Shahpur." *Ars Orientalis* 7 (1968): 53–70. for Khuzestan; Jean Claude Gardin and Pierre Gentelle. *Prospections archéologiques en Bactriane orientale: 1974-1978. Paris: Mission archéologique française en Asie centrale*: Diffusion De Boccard, 1989, Bertille Lyonnet. *Prospections archéologiques en Bactriane orientale (1974-1978) Volume 2.* Mémoires de la Mission archéologique française en Asie centrale 8. Paris: Ed. Recherche sur les civilisations, 1997, Gérard Fussman. "Southern Bactria and Northern India before Islam: A Review of Archaeological Reports." *Journal of the American Oriental Society*, 1996: 243-259, and Pierre Leriche. "Bactria: Land of a Thousand Cities." In *After Alexander: Central Asia Before Islam*, edited by Joe Cribb and Georgina Herrmann. Pp. 121–53. Oxford: Oxford University Press, 2007. have been the most useful surveys for Bactria. Other regions, such as Damghan: Katherine M. "Pre-Islamic Settlement and Land Use in Damghan, Northeast Irān." *Irānica Antiqua* 18 (1985): 119–44 have also benefitted from this attention, although the Iranian Plateau as a whole suffers from a lack of comprehensive surveys.

following section, these types of evidence are discussed in order to test a hypothesis, already advanced by Boucharlat (1987:354) that later Sasanian Khuzestan and Deh Luran were undergoing a series of profound economic changes which might have made it better adapted to the greater Late Antique economy and the imminent changes that would be brought in by the invading Muslims.[18]

Most archaeologists draw a picture of southwestern Irān as a region where the larger settlements of the Late Parthian period were slowly depopulated during early Sasanian times. This was then mitigated by the Sasanian imperial investments in the region, supporting the foundation of large urban areas such as Gundišāpur. However, despite the large irrigation systems and city building projects, the Sasanian population of these regions never reached the Parthian levels, the rural areas being sparsely populated and the urban population never reaching the limits hoped for and marked by bold fortification walls. The process continued until the Late Sasanian period when political instability led to the neglect of irrigation canals and dams and an eventual "collapse" of the whole system and the resulting impoverishment and abandonment of sites.

This grim picture, from the archaeological point of view, is mainly painted from the dating of stratigraphic layers and the associated pottery. The expansion or retraction of sites, as well as their supposed population densities, is measured by the collection of ceramics whose expanse is assumed to mark the limits of inhabited area and whose quantity is assumed to reflect a relative number of people who may have occupied the sites in question. The problems associated with dating of pottery, and even more importantly, with the problems of surface collection of sherds were previously mentioned. In this sense, the dating of sites becomes quite a difficult task, and any shift in dating would then be crucial and potentially central, in determining the validity of the above picture.

The problems of using ceramics to date archaeological sites, as well as the issue of surface collection has been discussed before (Wenke 1975-76: 39).[19] However, the specific seriation issues involving both Wenke and Neely's studies have not been pointed out. Wenke bases his study on the study of a relatively large set of ceramics, collected systematically, not randomly, but considering certain criteria to avoid the biases he identifies. These include the collection of all available pottery, again only from the surface of the surveyed sites. In the absolute seriation of these ceramics, Wenke tries to present two mathematical methods, what he calls the "matrix-forming" and the "multi-dimensional" methods, in order to explain the co-occurrence of pottery at the sites he surveys (Wenke 1975-76: 48). His basic assumptions are that the appearance of similar types of pottery at smaller sites would mean similarity of function and purpose for each of the sites, and that the co-occurrence would mean that the sites are contemporary (Wenke 1975-76: 43-44). However, he readily admits that this method is problematic, since the number of ceramics collected from some of the sites is too meager to be useful for inclusion in either of the approaches. Furthermore, these methods both present mathematical problems as to their accuracy, since the matrix-forming method forces a linear format on the whole of the data,[20] assuming a perfect relationship between the elements of the data and supposing that all the sites in which the co-occurring ceramics appear used that type of ceramic for the same length of time and that all the ceramics were produced at the same place and in the same fashion (Wenke 1975-76: 51). Multi-dimensional scaling, which tries to test the linearity of the data presented in the matrix-forming approach, essentially confirms the results gained from that method (Wenke 1975-76: 51-52), making a self-confirming conclusion without having actually factored in small, but potentially problematic details such as occurrence of imported pottery. The methods used consequently present several problems, including the basic fact that by using the same set of samples, chosen from among the larger pool of samples (1600 pieces of ceramics) and dividing them into more manageable sub-sets, the multi-dimentional method is essentially relying, and confirming, the same set of biases on the data that Wenke's "matrix-forming" method did. This would make the results gained from both methods quite similar, rendering the arguments presented essentially circular.

Although Neely does not elaborate on the means by which his own pottery seriation was achieved, he does present the methods under which the ceramic samples were collected (Neely 211: 253). This is essentially the same as Wenke's method and is better detailed in Neely's earlier work with Hole and Flannery (Hole, Flannery and Neely 1969). It involves the collection of all ceramic remains from certain sections of the site, augmented with the systematic collection of ceramics from selected sites. Neely bases his theoretical orientation on Adams' work on Tell Abu Sarifa (Adams 1970:87-119), which is also the inspiration for Wenke's work. In this case, the seriation of the site suffers from the limited number of ceramics available which hinders the ability to draw a sensible generalization for the entire site. Neely's relative seriation being based on comparison with sites close to Deh Luran (Abu Sarifa and Susa), would then impose similar biases on Deh Luran, again assuming the contemporary occupation of sites based on the similarities perceived in the ceramic evidence, without having established the sequence of occupationin Deh Luran itself.

This would then be in direct opposition to Neely's own

18. For this, see Khodadad Rezakhani, *ReOrienting the Sasanians: Eastern Irān in Late Antiquity*, Edinburgh: EUP, 2015 (Forthcoming).

19. Wenke argues that Adams's work in Mesopotamia suffered from a lack of ceramic sequencing, a problem often associated with a lack of proper sounding and stratigraphy.

20. This method assumes a perfect sequential replacement of pottery types in each period, practically ignoring co-existence of different types.

conclusion that during the Parthian and Sasanian times, Deh Luran was marginalized and its development was "retarded" and it shows signs of being left behind by the changes that occurred in Susiana or southern Mesopotamia. He sees the failure of the region to develop large urban areas until Sasanian times (based on one large site, sized 16 ha) as a sign of this, but seems to suggest that by late Sasanian period, the region either caught up with the rest of Khuzestan, towards whose political influence it was moving, or that it was forced by the Sasanian imperial investments to become an overflow area for Khuzestan proper (Neely 1974: 268-9).

Boucharlat's more recent evaluation of the data from Susa, which is the basis for much of the comparison for both Neely and Wenke, might suggest otherwise (Boucharlat 1987: 364-6). Boucharlat sees the chronology presented from Susa as being slightly biased towards dating the site to later times (Boucharlat 1987: 364). This is in fact, but probably unintentionally, also suggested by Kennet (Kennet 2007: 92). Further, the numismatic evidence from Susa prompts Boucharlat to suggest that the decline might belong to an earlier date and proposes that the discovery of large coin hoards points to a period of economic expansion that culminated under the Islamic rule (Boucharlat 1987: 365).

It is hard to properly judge the seriation methods and chronologies assigned to the sites mentioned above. In the first instance, most normal methods of arriving at chronologies, be they absolute or relative seriation, assume absolute beginnings and ends to periods of prominence of certain types of pottery. Furthermore, we have seen that the co-occurrence of the remains is among problematic, yet nonetheless existing, assumptions of these methods. As a result, we might consider that the archaeological records of Khuzestan and Deh Luran could possibly point to a different type of economic environment than the one normally assumed. Judging from the prominence of Sasanian investment in the irrigation system, demonstrable evidence for the increasing population and exploitation of marginal lands, and signs of agricultural change, we might then propose that the economy of Khuzestan was not in decline in late Sasanian times, rather in a form of change and transformation to a different type of production. Below, we will explore one of the possible ways in which this economy was changing.

### Nature of Economic Change: Cash Crops?

If we therefore accept the basic hypothesis that the late Sasanian economy of this region was undergoing change and expansion, then we need to ask the question of the ways and means by which these changes were taking place. Apart from manufacturing and urban production centers, an important way in which archaeology can provide us with information about economy is through agricultural history. As Watson sensibly points out, agricultural expansion does not happen in a vacuum, rather it is part and parcel of a general economic change and expansion outside the boundaries of agriculture itself (Watson 1981: 234). Consequently, a study of the changing and expanding nature of agriculture is thought to be a good starting point for identifying aspects of a changing economy, such as the Late Sasanian economy is thought to be.

Studies on the agricultural history of Khuzestan based on the archaeological records are actually quite numerous. However, they mostly concentrate on pre-historic periods and as mentioned before, are most interested in exploring various origins, including the origins of agriculture in places such as Deh Luran.[21] Occasionally, however, some idea of Sasanian agriculture can be gained through archaeological reports.[22] In Susiana, one of the basic premises of Wenke's survey has been his hypothesis that cash crops such as sugarcane and rice were cultivated in abundance in this region under the support and encouragement of the Sasanian administration (Wenke 1981: 33). Consequently, we are able to trace some of the agricultural changes that might have happened in this region under the Sasanians through archaeological reports.

Indeed, Adams finds much evidence for the cultivation of both rice and sugarcane in Khuzestan (Adams 1962: 118), while Adams and Hansen suggest that the agricultural importance of Gundišāpur was due to the production of commercial crops like rice and sugar (Adams and Hasen 1968: 57-62). Shushtar was also known for its sugarcane production, something that can be attested by the extensive irrigation system that still survives in that city (Canard 2002: 224-6). Irrigation, indeed, was the most important factor in the rise of new agricultural regime and adoption of new crops (Watson 1981: 228-9).

It is also most important to consider the reason for the cultivation of these new crops in Khuzestan. Traditional agriculture of the region usually depended on the cultivation of barley and bread wheat (Potts 1999: 358). Rice was also cultivated in the region since at least the time of Alexander.[23] In the late Sasanian period, we see a proliferation of rice production in Khuzestan (Canard

21. See above, n. 14.

22. This is mainly possible through the archaeobotany of charred seeds and sometimes pollen analysis, the latter of which has been done for Irān only in rare occasions, and usually for the pre-historic period again. Nonetheless, a few publications can be helpful; cf. Naomi F. Miller. "Plant Remains from Ville Royale II, Susa." *Cahiers de La Délégation Archéologique Française En Irān* 12 (1981): 137–42 and ibid. "Paleoethnobotanical Research in Khuzestan." *Paléorient* 11/2 (1985): 125–27 as well as A.I, Woosley, and Frank Hole. "Pollen Evidence of Subsistence and Environment in Ancient Irān." *Paléorient* 4/1 (1978): 59–70. I am most grateful to Dr. Naomi Miller for providing me with some basic understanding of archaeobotany and its application to Irān via personal email correspondence.

23. Potts, *the Archaeology of Elam*, 358, quoting Diodorus Siculus XIX.13.6; Peter Christensen's insistence on the availability of rice since the Achaemenid times seems to be based on later testimonies of Roman historians such as Pliny, which as always with Christensen's work, suffers from an almost total disregard for archaeological records (see: Christensen 1993: 104).

2002: 156), so much that the main diet of the inhabitants of Ahwaz is reported to have been rice, from whose flour a type of bread was baked (Canard 2002: 159). *Fotuh* accounts talk about the availability of rice in the Sasanian territories and unfamiliarity of the Arab troops with the grain (Canard 2002: 154). Rice was reportedly taxed at the same rate as wheat and barley, which shows its importance and prominence (Canard 2002: 154-5). Rice was also highly profitable, more than garden products (Canard 2002: 156).

Rice can be grown both as a summer crop (which requires a very controlled irrigated environment) (Canard 2002: 158) and winter crop.[24] Irrigated rice has a much higher yield and thus can feed more people. Kirkby (1973: 17-18) suggests that during Sasanian period, rice must have been grown as a winter crop, thus eliminating the need for irrigation. However, because of the methods of plot rotation, it would have made sense for the rice to be grown as a summer crop, allowing rotation with traditional winter crops like wheat.

Like many other new crops introduced to the Near East, sugar was also probably introduced in pre-Islamic times (Watson 1981: 221). Crops including sugar, were of important economic and dietary value (Watson 1981: 228). Their adoption also had another benefit. Since the normal method of agriculture in the Near East dictated that crops were mostly winter-crops and in the summer, land usually lay fallow, the adoption of the new crops, most of them from tropical regions like India, meant that the land could also be cultivated during summer (Watson 1981: 230). Of course, this heavy use of land would have led to land exhustion, itself prompting the innovation of new methods of fertilizing and deep plowing of land (Watson 1981: 232). All these methods required a higher amount of capital investment, but even more importantly, more labor (Watson 1981 : 233-4). This could then be one of the explanations for the expanding population in more agriculturally productive regions of Khuzestan, such as the area around Ivan-e Karkha or Deh Luran.

Sugar was certainly among the most prominent of new crops. Khuzestan is reported to have been a center of sugarcane cultivation. Textual evidence from early Islamic times consistently points out the cultivation of sugarcane in Khuzestan, in places such as Gundišāpur and Shushtar. Adams and Hansen found evidence of heavy irrigation systems and speculated that the purpose of this was to water the sugarcane fields (Adams and Hasen 1968: 58-9). Shushtar was another center forsugarcane cultivation, again with evidence for heavy irrigation in the form of weirs and canals (P. Christensen 1993:105). We have much evidence for the prominence of sugar in Sasanian diet of this region, including the following from Middle Persian "fashion manual" *Khosrow i Kavadan*:

anārgīl ka abāg šagar xwarēnd pad hindūg anārgīl xwānēnd ud
pad pārsīg gōz ī hindūg xwānand (ud) bistag ī gurgānīg ka pad
sōrāpag brēzēnd ud naxōd ū tarun ka pad ābkāmag brišt
xwarēnd (ud) xormā ī hēratīg kē pad gōz āgand ēstēd ud bistag ī
tarun ut šiftālūg ī armanīg ud balūt ī šāh-balūt abāg sagar ī
tavarzatag…

"The coconut which is eaten with sugar, in Indian (sic) they call it
*anārgīl* and in Persian *gōz ī hindūg* (Indian walnut), and the
Hyrcanian pistachio nut, when roasted [and immersed] in saltwater, and
fresh peas, when eaten [after being] roasted in *ābkāmag* [and]
the date of Herāt (or Hīrā?) when stuffed with walnut, and fresh pistachio nuts
and the Armenian peach[25] and chestnuts with solid sugar."
(Monchi-Zadeh 1982:74; Now see S. Azarnouche 2013 for an updated translation)

But there should indeed be a real commercial reason for why sugarcane was produced in the region. Sugarcane cultivation is a capital and labor intensive enterprise, and it certainly is not a subsistence crop. The average growing season for sugarcane is 13 months (P. Christensen 1993: 105). The processing of sugarcane also requires much investment and seems to have been done in urban areas instead of rural sites where the sugarcane was cultivated (Boucharlat *et al*. 1979). Considering the fact that sugarcane is a summer crop, its cultivation in April or May would mean harvest in either May or June, thus leaving the land fallow for the entire summer, or allow the cultivation of summer crops such as sesame or cotton.[26] This again would have required investment to support the labor during the growing season. So, sugarcane cultivation by itself suggests a change in the subsistence so often associated with ancient economy, and in conjunction with the cultivation of other new, commercially oriented crops, a hint at a change in economy indeed.

24. Wenke, "Imperial Investments", 88. Wenke argues that the cultivated rice in Khuzestan must have been cultivated during winter, but also agrees that due to lack of evidence (archaeological record of rice paddies) it might have been a summer crop. Canard 2002: 158-159 provides the textual evidence from the early Islamic works of geography about the summer cultivation of rice.

25. Armenia was, and still is, known for its outstanding apricots. This might be a reference.

26. For cotton, see Richard Bulliet. *Cotton, Climate, and Camels in Early Islamic Irān: A Moment in World History*. New York: Columbia University Press, 2011.; Sesame is mentioned as a common crop, alongside rice, by Muslim geographers: Ibn Hawqal: 27; also see Laufer 1919: 288-290.

**Bactriain Late Antiquity**

Ancient Bactria was known as the Land of a Thousand Cities to the classical historians (cf. Strabo. XV. 686). While the statement, as also quoted by later Greco-Roman historians (Justin. XLI. 1.8) was meant to refer to the foundation of cities under Alexander and the later Greco-Macedonian dynasty of Bactria, the highest level of urbanization in the region seems to belong to the Achaemenid period (*ca*. 525-333 BCE) and the period of Kushan dominance (*ca*. first century-260 CE?).[27] Based on the archaeological records, it seems that the period of Greco-Macedonian rule actually had quite minimal effects on the urbanization of Bactria (Leriche 2007:121-148). Indeed, it has been suggested that the process of urbanization in Bactria actually quickened after the departure of the Greeks (Leriche 2007:138) and that the largest city of the region, Termez (MP. Termedh) was actually a foundation by the Kushans, along with other major cities in the region that survived into the mediaeval period (Leriche 2007: 147-8).

The research into the settlements of Bactria was also undertaken by the Soviet archaeologists who mostly focused on the burial mounds (kurgans), as opposed to agricultural settlements that were the focus of the French research.[28] The result of Soviet explorations was the discovery of several sites important to art history, such as the site of Delbarjin, whose painted frescoes are among the most significant examples of a native Central Asian art (Kruglikova 1976: 87-110).

Other cities of the region are ratherunder-studied, some including Balkh/Bactria itself showing archaeological evidence of occupation mostly in the Islamic period (Knobloch 2002: 104-6). In this case, we are not even sure if the present city of Balkh (a small town to the west of the regional capital Mazar-i Sharif) was even the ancient, famed Bactra (Knobloch 2002: 98-9). Archaeological excavations at the city suggest a pre-Kushan occupation level and the walls of the city, which are still preserved, date back to the Kushan times.[29] Further to the north of Balkh, Termez was a large city and the northern capital under the Kushans, and it seems to have survived into the subsequent periods,[30] while Samangān, Khulm, Taluqān[31] and a number of other urban sites were settled and became important in the post-Kushan period (Knobloch 2002: 73-102).

Outside of urban settlements, the study of the patterns of rural settlements is quite limited and land-surveys are scarce. A reason for this might be the old binary view of historians on the relationship between the sedentary and nomadic population which has so far not allowed a proper understanding of land exploitation in Central Asia. More recent surveys on the "right" (northern) side of the Oxus and close to the Chaghanian region seem to emphasize the co-habitation of settled, nomadic, and transhumant populations in the region, a pattern that can be extended to the whole of Tokhāristān.[32] In this sense, the usual methods of calculating the total populated area based on the extent of the spread of pottery sherds and the irrigation systems might not be sufficient for understanding the actual extent of human presence.

In the immediate vicinity of major urban centers, methods of establishing the extent of settlement are still useful. In the plain of Aï Khanom, tracing of old channels, and sometimes old fields and farmsteads, suggests that in the Greek and post-Greek (Kushan) periods, the inhabitants of the Aï Khanoum plain inhabited scattered large farmhouses (Gentelle 2001: 117-29). The sites identified in the plain consist of villages, farmhouses, and plots of cultivated land (Gentelle 2001: 118-22). While small and medium size farms show a consistent continuity from the Achaemenid to Kushan times ($30\times30$ m$^2$ to $60\times60$ m$^2$), larger farmsteads ($120\times80$ m$^2$) proliferate under the Kushans. The Kushan period also displays a tendency for reusing the fields that were occupied under the Achaemenids, but were largely abandoned under Greek rule, a point that might be relevant to Leriche's suggestion about the military value of Aï Khanoum itself (Leriche 2007: 139-148). The sacking and abandonment of the city after the Kushans seems to have contributed to a lack of large population settlement on the plain (Leriche 2007: 139-144). It is only in the Islamic period (11$^{th}$ century CE) that we witness the resettlement of the plain, if we are to judge by the extent of the irrigation system (Gentelle 2001: 61-71). After the fifth century CE, probably with the arrival of the Hephthalites, many of the irrigation systems were abandoned and settlements retracted to lower areas in the piedmont, concentrating around larger towns. The early seventh century Chinese traveler, Hiuen-tsiang tells us that Balkh itself, although well-fortified, was sparsely populated. [33]

The Baghlan Plain, a densely populated region in eastern Tokhāristān, seems to have been a late Hephthalite settlement with a transhumant population, although larger settlements, possibly even the capital of the later

27. The uncertain dates for the Kushan rule over Bactria will be familiar to many involved in the historiography of Central Asia. The discussion is quite extensive and seemingly endless. For several summaries and of course new suggestions, see the contributions of R. Göbl, J. Cribb and Y. Zeymal in Alram, Michael, and Deborah E. Klimburg-Salter. *Coins, Art, and Chronology: Essays on Pre-Islamic History of the Indo-Iranian Borderlands*. Vol. 33. Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 1999. Falk 2001 also seems to offer a problematic, but so far widely accepted – if only out of exhaustion – solution.

28. The results of Soviet surveys were published in many scattered volumes. However, a most useful collection of articles by the Soviet experts appeared in two volumes while the French team was still working in Afghanistan: I. T. Kruglikova 1976.

29. B. Dagens *et al*. *Mem. DAFA*, XIX.

30. For Termez, see Pierre Leriche *et al*. eds. *La Bactriane au carrefour des routes et des civilisations de l'Asie centrale*. Paris: Maisonneuve & Larose, 2001.

31. All these cities are mentioned as major "ancient" cities of Tokharistan by Islamic geographers: Istakhri, 289-291; Yaqubi, 53 & 56. Ibn Khurradadhbeh 1991:30 gives the tax for Taluqan at 21,400 dirhams per year and Khulm as 12,300 dirhams. This is compared to Bamiyan at 5,000 dirhams and Termez (the largest city of the region) at 47,100 dirhams.

32. Stride 2007 provides a magnificent argument to this point based on his work in the Surkhan Darya region of Transoxiana..

33. *Si-yu-ki*, Book I, p. 44. He calls Balkh *Rajagriha*, a Sanskrit word meaning "the Royal City."

Hephthalites, Huolu (Middle Chinese *γwat-lo*), might have been located in this region (Grenet 2002: 214). This is quite interesting, as the proximity of this plain to both the Kushan sites of Surkh Kotal and Rabatak, as well as the kingdom of Rōb, in addition to its position on one of the two major routes from Tokharistan to Kabul (Grenet 2002: 245), makes it indeed a prime location for dense population and economic activities (Grenet 2002: 214-215). The reconstruction of the settlement patterns also shows dense population in the areas of eastern and southeastern Tokhāristān thatwere the last holdings of the Hephthalites (Lyonnet 1997: 277-284). A type of original ceramic and also distinctly Hephthalite kurgans, indicating a concentration of late Hephthalite power in the region (Gardin and Gentelle 1989: 98-100), further suggests concentration of Hephthalite power, although in a new context, in the areas of southern Tokhāristān and Kapisa/ Kabul.

We know that in the same region, a Hephthalite state came into existence after the advances of the Western Turks and the Sasanians in 560 CE. These are the famous *Nezak Tarkhans* who claimed descent from the Alkhon king *Khingila* (Grenet 2002: 218). We know that these Tarkhans controlled the passes across the Hindukush both to Bamiyan and also to Kabul, via the Panjshir Valley (Baker and Allchin 1991). Based on the pattern of the earlier Hephthalites, they established and controlled formidable castles on both sides of the Surkhab River in southern Tokharistan, controlling the trade and military route from Bactria to Bamiyan (Grenet 2002: 218-20). An important pass went through a local kingdom which controlled the areas south of Samingan and immediately to the north of Bamiyan. This was the kingdom of Rōb[34] whose ruler is mentioned in Islamic sources for aiding Arab armies commanded by Qutaiba to fight against a Nezak Tarkhan (Tabari II.1218-27), probably the Hephthalite ruler of eastern Bactria (Grenet 2002: 216).

The same high population density is seen also in the plain of Qunduz, where archaeological surveys by the French team of DAFA revealed high settlement density in the fifth-eighth century, although Qunduz itself was lost to the Western Turks in 560 (Grenet 2002: 214).[35] In all, the French team recorded 471 sites in eastern Bactria and traced the irrigation channels along the Amu Darya and smaller tributaries such as the Taluqān River.[36] Here the Kushan and Post-Kushan period, at least up to 560 CE, are lumped together as the Kushan Period, mainly due to the uninterrupted continuity in the ceramic sequence of the eastern Turkistan region. This is, however, a little unusual as Gardin had earlier identified a clear third century introduction of new pottery types which he sees as continuing until the late fourth century, attributing the change to the "Hunnic" invasions. He, instead, had suggested that after the break in the late fourth century, the Bactrian ceramics display continuity between the early fifth to the late ninth centuries. This might in fact be a geographical difference, as Gardin's survey in the western regions of Bactria, close to Balkh itself also shows a retraction of settlements starting in the fifth century, while the Qunduz River valley instead displays a proliferation of settlements after the fourth century (Gardin and Gentelle: 25ff.). If this is the case, then we see a clear boundary within Bactria itself which might have something to do with the changing political situation of the region after the establishment of the Hephthalites.

**Agriculture in Bactria**

Pre-Islamic evidence such as Chinese travelogues, as well as Islamic accounts, all consider Bactria/Tokhāristān to be a major center of both agriculture and pastoralism. The Chinese traveler Hiuen-Tsiang who visited the area around 630 CE tells us that the region was known for its cultivation of cotton, as well as for raising good horses, and that Bamiyan is known for high yields of wheat, but not fruits (*Si-yu-ki*, Book I, p. 50). The same source tells us about the varied products of the region of Balkh itself, but is generally silent about other regions of Tokhāristān (*Si-yu-ki*, Book I, p. 44).

Islamic sources detail the agricultural production in the region by remarking on the spread of horticulture, particularly in the southern mountainous regions. Muqadasi claims that on the northern shore of the Oxus, between Amul and Termez, there were over 500 vineyards which produced a large amount of "raisins" (Arabic *mawīz*) (Muqadasi, Vol. II, p. 419). Yaqut also talks about the spread of fields and gardens in the region to the south of the Oxus and says that the most productive region was about four kilometers south of the Oxus (Yaqut, Vol. II, p. 568).

Among other products of Bactria, Islamic geographers often recount sesame, rice, walnuts, almonds, and currants, as well as wine and figs (Meftah, *Joghrafiya*: 66). Interestingly enough, sugarcane is also counted among the products of Bactria, alongside "other products of the warm regions" (*Hudud*, p. 61) In later centuries, wine, as well as various types of melons were also counted among the major exports of the region (Mostowfi Qazvini 1381/2002: 190). In the description of Samangan, pistachio is also mentioned as a major product. The presence of wild pistachio in the region of Samangan was known since

34. On the kingsom of Rōb and its importance in the history of this period, see Sims-Williams 2002 and Rezakhani 2015 (Forthcoming).

35. See note. 20. The team of J-Cl. Gardin surveyed the Qunduz Plain, to the east of Bactria, in a systematic and exemplary manner which helps us much in understanding the settlement patterns of the region during this period: Gardin and Gentelle 1989; B. Lyonnet 1997.

36. see Lyonnet 1997 as well as the useful review offered by Fredrik Hiebert, "Review of: B. Lyonnet, 1997. - Prospections archéologiques en Bactriane Orientale (1974-1978). Vol. 2. Céramique et Peuplement du Chalcolithique à la Conquête Arabe et J.-C. Gardin, 1998. - Prospections Archéologiques en Bactriane Orientale (1974-1978). Vol. 3. Description des Sites et Notes de Synthèse. ," *Paléorient* 25 (1999): 173.

at least the first century CE, when Strabo mentions that the soldiers of Alexander saw it growing in the region of Bactria. Muslim authors also mention pistachio as a product of the region of Samangan, specifying that it grew in higher altitudes and is considered a "mountain" tree (Naser Khosrow, *Safarnameh*: 120). An Islamic manual of agriculture mentions that the pistachio tree was to be planted at the end of the autumn, and that it needed little irrigation, making it an excellent choice for dry-farming (*Iršād ul Ziarā'*: 195). Aside from cultivation, the valley of Samangan was known for its game and pastures which allowed breeding of the famous Bactrian camels, as well as other domestic animals (Mostowfi: 191-192).

Archaeologically, the spread of agriculture is best studied in the Surkhan Darya region, to the north of the Oxus and in the plains and valleys around Termez and Chaghanian (Huff *et al*. 2001: 299ff.). The region, consisting of riverine lowlands around the Oxus and narrow valleys in the north, was used for both sedentary and transhumant agriculture since prehistoric times.[37] Both the surface of the plain and the valleys were cultivated and artificially irrigated, mostly devoted to horticulture and viticulture (Gentelle 2001: 167). Foothills and lower elevations were usually settled by sedentary agriculturalists, while higher elevations were utilized more by transhumant populations who seasonally undertook cultivation in the irrigated areas (Genelle 2001: 167-8). The area was irrigated by several major river systems, including the Surkhan Darya, Kafirnigan, and Wakhsh, all three forming important tributaries of the Oxus (Gentelle 2001: 167).

**Sasanian Presence in Tokhāristān**

The relationship between the Iranian empires and Central Asia is largely unexplored, because the basis for understanding the meaning of an "empire" in the Iranian Plateau itself is mostly undefined and vague. The artistic, cultural, political, and economic influences of empires centered in Irān on Central Asia are obvious and easily observable. However, this influence and the extent of the actual control of Iranian empires over Central Asia is based chiefly on the testimony of textual sources. Archaeologically, there has largely been a great chasm between our understanding of the power of an empire in Irān and its actual relationship with the various Central Asian polities (Genito 1996: 401-6).

In the case of the Sasanian presence in Central Asia, we have sufficient textual information regarding their conquest and control of the region in the third and fourth centuries. Starting with the testimony of Shapur I at Ka'aba-ī Zardušt, the Sasanians claimed to have invaded the Kushan territory and to have established their control there (Maricq and Honigmann 1998: 38-51). Direct Sasanian rule of the region, or rule through proxies such as the Kushano-Sasanians is also attested based on the coins found in the region, initially copying the Kushan style and then following the Sasanian types (Frye 1974: 116-119). It seems that for the Sasanians, Marv (or *Merv*), on the border of Tokharistan, was considered a capital of the region of Khorasan.[38] This is further evident by Ardashir's coins minted in Marv, even before the conquest of the Kushan territories (Alarm 2007).

However, the borders and frontiers seem to have been quite uncertain[39] and even major population areas such as Marv could be changing hands. This is important in studying the nature of Sasanian control over Tokhāristān. Certainly at the end of the fifth century, when the Sasanian power in Central Asia was at its lowest point, this ambiguity of borders and zones of influence could have made a large impact on the geo-politics of the region. Marv, for example, seems to have changed hands, from the Sasanians to the Hephthalites sometime during this period, probably for a short time only (Callieri 1996: 397). However, this might have caused a proliferation of Buddhist artistic and cultural activity under the Hephthalites, the center of whose power was in Tokhāristān itself and thus quite firmly in a region of obvious Buddhist presence (Callieri 1996: 396-8). The reverse could also be observed, as when periods of Sasanian presence in Bactria/Tokhāristān are hinted at by textual sources, one can observe the same through archaeology, thus helping us to understand the nature of Sasanian control, and its effect on the population of the region.

North of Bamiyan, and in the region of Madr-Rōb,[40] the centers most mentioned in Bactrian Economic Documents,[41] considerable evidence for occupation during late antiquity are present. In *Hudūd Al-Alam*, a Mediaeval Persian geographical treatise, this region is mentioned as having many fortresses and Buddhist *stupas* and art pieces, as well as producing good fruit (*Hudud*, 61). Although most of these are not yet excavated or properly studied, what is present even on the ground tells us of a significant building activity, mainly in the form of fortifications, in this region.

Just to the south of Rōb (about 50 km north of Bamiyān), a chain of fortresses, dated to the sixth-eighth centuries

37. Huff *et al*. 2001: 222 ff. The archaeologists connect the agricultural development of the region with the Indo-European migrations. Indeed, the Surkhan Darya is part of the famed BMAC (Bactria-Margiana Archaeological Complex) on which see, among others, V. I. Sarianidi, 1998.

38. For the regional administration of the Sasanian Empire, at least in the later ages, see in general Gyselen, *Geographie*; but in particular Gyselen, *Four Generals*.

39. The borders of empires, even highly centralized ones such as the Achaemenid Empire, were not quite set out, particularly when facing semi-nomadic regions such as Transoxiana: Genito 1996: 409.

40. Madr (or Madhr) is named in the Islamic sources and is considered part of Balkh, although it is considerably closer to Baghlan and is basically in the same region of the upper Khulm river as Samangan (Hudud, 184); Ibn Khurradadhbeh 1991:30 lumps Rōb and Samagan together when giving the list of their tax dues.

41. See ( Rezakhani 2015 chapter IV) for a detailed study of these documents and their significance for the late antique economy of Bactria.

based on construction style, dot the country-side.[42] Further south, to the north-west of Madr, ruins of an ancient city are also visible, with clear outlines of a citadel and a fortress (Meftah, *Joghrafiya*: 383). Close to these forts and at the site of *Dokhtar-ī Nushirwan*, are two man-made caves in one of which a large fresco, depicting a seated Plate, shows a merger of local, Iranian/Sasanian, and Indian styles. The whole composition shows a significant Sasanian influence and is quite similar to silver-work known from Sasanian Irān and Afghanistan, with a seated king wearing a zoomorphic crown and surrounded by symbols of power and authority.[43] While we do not know the identity of the king,[44] the composition clearly shows the extent of Sasanian control, or at least their cultural influence, in the highlands of Bactria.[45]

Farther east, near the site of Surkh Kotal and at a place called Rag-i Bībī, evidence of Sasanian control can be seen in a rock-relief depicting the Sasanian king Shapur I. Dating from the third century, this is as yet our most significant evidence for the extent of Sasanian control in Bactria, its location, close to the royal fire-temple of Kanishka, is probably chosen to show the victory of the Sasanians over the Kushans (Grenet 2002:260-3). Other than displaying an early evidence for the control of eastern Bactria by the Sasanians, the relief also shows the continuing importance of the site of Surkh Kotal, as the sanctuary of the Kushans. The composition of the site, strikingly similar to the Sasanian jousting scenes in Naqsh-i Rustam (Heremann 1998: 41) and yet including several indications of Kushan presence, mainly in the style of clothing for the attendants, is also indicative of the Sasanian understanding of the local artistic tradition.[46]

## Conclusion

Khuzestan and Bactria/Tokharistan are geographically quite different, both in their relationship to the center of the Sasanian power in Mesopotamia and also in their ecology. Khuzestan can essentially be called the "backyard" of Mesopotamia, and the long-standing relationship of the Sasanian imperial power with it had made Khuzestan a fully integrated part of the Sasanian administration. Bactria, on the other hand, was to far eastern side of the Sasanian territory, and due to its location on the frontier of the empire, not always politically controlled by the Sasanians. It did, however, form a very important part of the Sasanian world, being among the earliest places for issuing Sasanian coins, as early as the reign of Shapur I (241-272 CE), and also playing an important role in Sasanian imperial diplomacy with the steppe zone that lies beyond the Oxus.

In Khuzestan, imperial investment in the hydraulic systems, as well as a vigorous urban foundation policy, resulted in the intense exploitation of land in the plain above al-Ahwaz, as well as the peripheral regions such as Deh Luran. Archaeological surveys tell us about an increasing tendency towards urbanization in Khuzestan during the late Sasanian and early Islamic times, although the evidence for this is sometimes more textual than archaeologically based. Despite narrative accounts of demographic loss due to pandemics or abandonment of land, archaeology indeed shows little evidence for a large-scale economic decline or loss of population in Khuzestan. Instead, the increased minting of coins, intensity of irrigation activities, use of marginal land and water resources, and movement of population from the region to the other coast of the Persian Gulf and colonization of Eastern Arabia seem to point towards an expanding economy. It is thus suggested that efficient methods of irrigation, as well as an introduction of new cash crops such as rice and sugarcane, might have contributed to an overall increase in the economic production of Khuzestan. This in turn probably resulted in issuing more coins in the region in order to pay the equally increasing tax burden. Evidence of Islamic sources for agricultural prosperity of Khuzestan, as well as presented tax rates, would further strengthen this suggestion.

In Bactria, similar hydraulic systems were founded, although in a more limited fashion and with less involvement from the Sasanian imperial system. Instead, it appears that local foundations might have been more fragmented than Khuzestan, resulting in autonomous, but smaller scale, regional economies. Here, agriculture seems to have been limited to arboriculture and viticulture, relying on natural water resources augmented by smaller local canals serving to bring water to the gardens. It is also in this zone that we find the Rōb-Madr region, the small kingdom which provides an example of fragmented authority in Bactria/ Tokharistan. Documents found from this region, on the other hand, give us a glimpse into the daily economic activities of the people in the region of Rōb. The scope of the documents, and their clear suggestion of the dominance of local authority, serve to further confirm the suggestion that the authority, in the realm of politics as well as economy, was local and regional, without much reference to a larger, hegemonic power. Contracts, purchases, deeds of gifts, letters, and all other types of material in the Rōb archives provide us with the picture of a prosperous, but

42. Minorsky, in his commentary to the *Hudūd al-Alam*, remarks about this fact and attributes the description in the *Hudūd* to the then recent discoveries of Buddhist art and buildings by Godard and Hackin in the area. (Minorsky 1937: 180-184).

43. See Klimburg-Salter 1993: 355-368 for a detailed discussion of this fresco and its influences and significance.

44. Based in the study of the crown, Klimburg-Salter suggests that the painting shows a god and not a king. Although this might certainly be true, the form is obviously reminiscent of the royal portraits available from the later Sasanian kings.

45. Klimburg-Salter 1993: 360 attributes the crown-style to Wahram I or II, based on the coins they minted in Balkh. This might give us a *terminus post quem* of late third century as the date for the painting. However, considering that the basis of the comparison is a silver plate kept at the Hermitage Museum, and the zoomorphic form of the crown, this might be quite superficial.

46. See Grenet *et al*. 2007 particularly the artistic observations by Lee and Grenet.

quintessentially local, economy which was moving towards regional specialization, probably through the rise of a few, land accumulating family enterprises, one of which, that of the Kamird-Far, can be observed through the Bactrian documents.

In answering our original enquiry into the nature of Sasanian economy, particularly the extent to which political boundaries corresponded to the economic ones, we can conclude that the economic boundaries need to be drawn within the Sasanian territory itself. It is certainly true that 'Sasanian economy' is too overarching a concept, not providing for enough diversity in reflecting the true nature of the economic environment of the late antique "Iranian World." Instead, micro-systems such as Khuzestan and Bactria formed autonomous economic units which responded to the environmental and political requirements that surrounded them. Nor does this mean that these regions formed isolated units, bound by their own internal political forces. In case of Khuzestan, we see that the changing local environment was partly responding to the larger imperial activities of the Sasanian state, and partly even to the colonializing efforts that included emigration to other regions. In Bactria, the political system seems to have controlled smaller units which in turn exhibited a complex set of economic relationships which transcended political boundaries, but where at the same time operating in response to local requirements. Further study of the economy of both of these regions would thus require a better understanding of the political environment and the role of the individuals, as well as their early Islamic outcomes and influences.

Additionally, in order to understand better, and more efficiently compare economic trends in Khuzestan and Bactria, more research on the regional economies of the Sasanian territory needs to be conducted. Fortunately, the increasing archaeological activities in the central and northern regions of Irān, as well as another astonishing discovery of primary material, this time a Middle Persian archive, promises to open new vistas for the expansion of this enquiry. By considering the local environmental and political context for each of these regions, we should be able to provide more pieces to study the complete puzzle that is the Sasanian economy.

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