



ISSN  
2547-989X

Sinop Üniversitesi  
Sosyal Bilimler Dergisi

Araştırma Makalesi

Sinop Üniversitesi Sosyal Bilimler Dergisi, 9 (2), 1058-1073

Geliş Tarihi:24.07.2025 Kabul Tarihi: 19.08.2025

Yayın: 2025 Yayın Tarihi:30.11.2025

<https://doi.org/10.30561/sinopusd.1749990>

<https://dergipark.org.tr/sinopusd>

## AN ASSESSMENT OF TRACKING LOST LIVESTOCK ACCORDING TO SUMERIAN CUNEIFORM TEXTS

Mehmet Yunus AKTÜRK\*

### Abstract

This article examines how cases of lost livestock were recorded, investigated, and compensated within the bureaucratic apparatus of Sumer by analysing cuneiform archives from the Ur III period (2112–2004 BCE). It focuses on three interrelated document types: ration lists, which first register the loss; investigation dockets, which detail the cause, the responsible parties, and witness statements; and compensation tablets, which formalize restitution either by an animal in kind or by its barley equivalent. Terms such as “*gu-gaz*” and “*udu-sikil*” simultaneously denote the quantitative deficit and its juridical status, thereby ensuring institutional consistency. The study shows that oaths, sureties, and a double-entry technique reinforced administrative transparency, while compensation calculations were shaped by social status. In theft (*gazi*) cases, indemnities could rise to 50 percent of the ordinary value, highlighting the system’s deterrent function. Ultimately, incidents of lost livestock served a critical role not only in stock control but also in maintaining social hierarchy and bureaucratic legitimacy within the Sumerian economy. These findings demonstrate that Sumerian administrative practice developed a sophisticated system that integrated quantitative oversight with legal-financial enforcement inside a unified documentary chain.

**Keywords:** Sumerians, Lost livestock records, Compensation mechanisms, Cuneiform administrative tablets.

### Sumerce Çivi Yazılı Metinlere Göre Kaybolan Hayvanların Takibi Hakkında Bir Değerlendirme

### Öz

Bu makale, III. Ur dönemine (MÖ 2112-2004) ait çivi yazılı arşivleri temel alarak Sumer bürokrasisinde kaybolan hayvanların nasıl kayda geçirildiğini, soruşturulduğunu ve telafi edildiğini incelemektedir. Çalışma üç ana belge türüne odaklanır: rasyon listeleri kaybı ilk saptayan metinlerdir; soruşturma defterleri eksikliğin nedenini, sorumlularını ve tanık

\* Dr. Öğr. Üyesi, Gümüşhane Üniversitesi, Edebiyat Fakültesi, Tarih Bölümü, Eskiçağ Tarihi

Anabilim Dalı, [m.yunusakrep@gumushane.edu.tr](mailto:m.yunusakrep@gumushane.edu.tr), <https://orcid.org/0000-0003-3977-6300>

This work is licensed under CC BY-NC-ND 4.0

beyanlarını ayrıntılandırır; tazminat tabloları ise kaybın aynı hayvan veya arpa eşdeğeriyle telafisini resmîleştirir. Bu belgeler, “gu<sub>4</sub>-gaz” ve “udu-sikil” gibi terimlerle niceliksel kaybı ve hukuki statüyü aynı anda işaret ederek kurumsal tutarlılığı sağlar. Makale, soruşturma sürecinde yemin, kefalet ve çift kayıt tekniklerinin idari şeffaflığı güçlendirdiğini; telafi hesaplamalarında ise sosyal statüye bağlı farklılıkların belirleyici olduğunu gösterir. Hırsızlık (*gazi*) vakalarında tazminatın olağan bedelin %50 üzerine çıkarılması, bürokrasinin caydırıcı boyutunu yansıtır. Sonuçta kayıp hayvan vakaları, Sumer ekonomisinde stok denetimi kadar toplumsal hiyerarşi ve bürokratik meşruiyetin sürdürülmesinde de kritik işlev görür. Bu bulgular, Sumer idari pratiğinin niceliksel kontrol ile hukuksal-mali yaptırımını tek dosya zincirinde birleştiren gelişmiş bir sistem kurduğunu ortaya koyar.

**Anahtar Kelimeler:** Sumerliler, Kayıp hayvan kayıtları, Telafi mekanizmaları, Çivi yazılı idari belgeler.

### Introduction

This study addresses the critical role of animal husbandry within the economic and bureaucratic order of Sumerian city-states, with particular attention to the administrative procedures surrounding lost livestock. In Sumerian society, cattle, sheep, goats, and pigs were not only sources of nourishment but also pillars of the sustainable production policies maintained by temples, palaces, and large estates. Ration ledgers, herd registers, and investigation reports preserved in cuneiform archives demonstrate that the phenomenon of lost animals was treated as an administrative issue affecting both individual ownership rights and social order. Accordingly, the monitoring of missing livestock functioned as an institutional surveillance mechanism designed to prevent disruptions in production processes and to ensure the continuity of bureaucratic control.

The large archives centred on the Ur III period not only recorded livestock censuses and ration allocations but also documented in detail the procedures and regulations governing investigations into missing animals. Each case followed a sequential process: the deficit was first identified and entered into the records; authorised officials were then brought in; witness testimonies were collected; and, finally, sanctions for restitution were determined and formalised. Every stage of this process was set out in cuneiform ledgers using columnar layouts and standard

formulae, thereby clarifying lines of responsibility and transforming institutional memory into written record (Kang, 1972, pp. 1-5).

In the Sumerian scribal tradition, terminology for recording lost animals was employed within well-defined conceptual frames. The expression *gu<sub>4</sub>-gaz*, for instance, refers to individual cattle or sheep that have gone missing from a herd, whereas *udu-sikil* serves a comparable function for goats and sheep. These terms play a crucial role in linking daily ration lists to investigation dockets, ensuring linguistic consistency in noting the species, number, and date of each loss. Such terminological precision enhanced both the reliability of the records and the shared understanding among the bureaucrats who archived them.

Institutional investigations into missing livestock began with a preliminary review, followed by a full inquiry conducted by the official responsible within the relevant estate or temple administration. During this stage, witness statements, earlier ration registers, and when necessary older archival ledgers were examined to determine the scope of the incident; the names of liable parties, their positions, and the precise number of lost animals were recorded with absolute accuracy. The inquiry concluded with material restitution: the person held responsible was required either to deliver one or more replacement animals or to provide an equivalent supplementary allotment. In this way, the institution's production system was once again secured.

Compensation mechanisms were calibrated to the economic value of the missing animal: restitution could take the form of a direct monetary payment or the delivery of a replacement animal. Designed to avert disruptions in the production line, these measures functioned simultaneously as deterrents and as means of redress. Moreover, inquiry dossiers on lost livestock yield valuable data on communal responsibility and the division of labour. They make visible the sense of responsibility exhibited by the officials involved, the narratives of loss recorded from witnesses, and the decision-making processes of estate administrators (UET 5. 611: 1-7, Beranger, 2020, p. 254).

In this study, the framework established in the introduction guides the ensuing sections, which classify references to lost livestock in the cuneiform corpus; reconstruct the institutional procedures and documentary protocols underlying investigations; and analyse compensation practices alongside their implications for agricultural production and social organisation. Thus, tracking missing animals in Sumerian cuneiform texts is interpreted not merely as a form of stock control, but as a written manifestation of the bureaucratic will of the period.

### **1. Classification of Lost Livestock Records in Cuneiform Sources**

Monitoring livestock holdings in Sumerian administration (Kramer, 2002, pp. 149-150) constituted the point of departure for a wide range of bureaucratic processes, extending from grain-stock management to labour allocation (Algaze, 2008, p. 84). The Ur III archives (c. 2112–2004 BC) in particular contain numerous texts that document the entire circulation of livestock—from birth to slaughter, from rationing to loss (Kuhrt, 2013, pp. 78-81). Each text genre records a lost-animal incident from a distinct perspective: ration lists first register the deficit; investigation dockets compile the identities of those responsible together with official evidence; and compensation tablets formalise the economic restitution of the loss. Taken together, this tripartite corpus does not merely quantify a shortfall; it frames lost livestock as a critical administrative test of institutional order (Sigrist, 1992, pp. 49-70).

Institutional herds were monitored through ration lists (*še-ba* or feed-allocation tablets) compiled on a daily or monthly basis. Each list followed a standard columnar format that recorded species, age, sex, and place of care in separate columns. Missing headcounts were flagged with the notation “-gaz” (lost) and excluded from the row total. For example, tablet CUSAS 16, 306 notes a deficit of “3 *gu<sub>4</sub>-gaz*,” indicating that three cattle had disappeared under a particular shepherd’s supervision; the ration quantity assigned earlier to those animals remained unchanged in the same line (Garfinkle, Van De Mierop, & Sauren, 2010). Once a loss was entered in a ration ledger, a bureaucratic alarm was triggered and a

summary slip was forwarded to the *zimmi* (investigation) docket. This mechanism conformed to the Sumerian principle of central oversight: the missing asset was first registered quantitatively and then recorded a second time under the heading of responsibility.

Investigation dockets constitute the detailed files opened for animals recorded as missing in the ration lists. The heading line specifies the incident date using the official year-name and month-name; it is followed by the species, number, and where relevant identifying features of the lost animal (e.g., horn colour). The main body then records the name of the responsible official or herdsman, after which a list of witnesses is entered. These witnesses are usually two or three reliable persons either fellow herdsmen from the same flock or neighbouring residents whose statements are introduced with the formula *im-gur* (gave testimony) (Sigrist, 1992, pp. 101-104; Stepien, 1996, pp. 120-123). The number of animals confirmed as missing at the end of the inquiry normally serves as the basis for the indemnity the shepherd must pay; when liability is shared, the compensation is apportioned among multiple parties and entered into the record accordingly.

Compensation tablets constitute the final link in the administrative chain. Restitution for a missing animal is recorded either as the delivery of a replacement of the same species or as a barley payment calculated at the official tariff. According to Robert Englund's equivalency tables, in the Ur III period one adult bovine was valued at roughly 60 *gur* of barley, while a sheep was worth 6–7 *gur* (Englund, 2012, pp. 440-442). In the compensation document these ratios appear in the formulae *gu-bi še-bi* (the barley of the cow) or *udu-bi še-bi* (the barley of the sheep); the entry then names the storehouse that received the grain and the official who collected it. The line closes with the sign *kišib* (seal), which is critical for confirming that the transaction is final. The presence of the seal demonstrates that the chain of ownership remains unbroken and that no open balance lingers in the bureaucratic record (Englund, 2012, pp. 443-445; Molina, 2016, pp. 14-15).

The fixed filing logic that links ration lists, investigation dockets, and compensation receipts provides modern researchers with a rich basis for classification. The first category comprises regular ration lists, whose principal function is to document the herd's current status and to monitor surpluses or deficits. The second category consists of special investigation dossiers detailed files that include explanatory narratives, witness testimonies, and cross-references to earlier records. A third category, compensation tablets, records both the restitution of the missing amount and the definitive identification of the parties liable (Molina, 2012, pp. 9-10).

Terminological consistency is indispensable to this classificatory scheme. The expressions *gu<sub>4</sub>-gaz* (denoting a missing large animal) and *udu-sikil* (recording the number of lost small stock) simultaneously mark the quantitative deficit and the investigative status of the event. Piotr Steinkeller notes that in the Drehem texts, *udu-sikil* appears especially in fleece-account tablets, where it registers losses as a legally relevant category (Steinkeller, 1995, pp. 60-64). Thanks to such formulae, a single line in a ration list effectively pre-selects the subsequent dossier to be opened and the standard phrases to be employed.

Nevertheless, the practical operation of this classification is not always flawless; field exigencies or sudden migrations can introduce unforeseen variables into the bookkeeping system. In his study of flock management in the Umma region, Marek Stepien documents that loss rates rose dramatically during transitional seasons, placing extraordinary pressure on investigation dockets (Stepien 1996, pp. 120-125). This example underscores how sensitive lost-animal files were to the risks inherent in day-to-day herd administration.

Classifying a loss as either "theft" (*gazi*) or "accident" (*gaba*) is a decisive factor that shapes the course of the investigation. When theft is alleged, the dossier is supplemented with reports from security personnel such as the city guard or border patrol whereas in accident cases the file includes topographic descriptions and detailed notes on environmental causes such as floods. In one compensation example

from Marcel Sigrist's Drehem catalogue, two shepherds were ordered to pay a "base indemnity" for eight cattle lost after a flood, the incident being categorised as a "natural disaster" (Sigrist, 1992, pp. 215-219). This nuance clarifies why investigation dockets and compensation tablets are categorised as separate document types: the former is an analytical report describing the incident, whereas the latter is an instrument that records the legal-financial outcome.

The physical format of the tablets is likewise crucial for classification. Daily ration tables are typically written horizontally in ten- to fifteen-line layouts; investigation dockets, by contrast, adopt a vertical column arrangement and contain many more lines; compensation tablets are smaller and focus on a single transaction. This size-format differentiation suggests that archivists developed a form of "document ergonomics" tailored to distinct administrative needs. In his study of the physical organisation of Ur III texts, Walther Sallaberger shows that ration lists were stored on storeroom shelves in annual blocks, whereas investigation dockets were filed in case-specific folders (Sallaberger, 1993, pp. 28-32).

The numerical content of the texts reinforces the tripartite distinction among lost-animal records just as much as the formulaic language does. In ration lists, missing animals are marked not with "0" but with the notation "-gaz" (lost), creating an explicit deficit in the total column; this negative balance is repeated verbatim in the opening paragraph of the investigation docket for verification. Finally, the same figure is converted into a monetary equivalent in the compensation receipt, expressed through the formulae *še-bi* (its barley value) or *gu<sub>4</sub>-bi* (its cattle value). In this way, the three documents present an identical number at three different semantic levels, thereby closing the administrative cycle of the loss (Englund, 2012, pp. 447-449).

Although the primary purpose of lost-animal records was to guarantee economic stability, these documents also encode social equilibrium. Shepherds were typically low-income, free labourers, whereas the herd-owning institution whether temple or estate represented the high ranking priest-administrative class. Responsibility assignments in the investigation dockets reaffirm this hierarchy: the

shepherd pays the indemnity directly, yet the amount of compensation is set at the discretion of the supervising official. Thus, lost-animal files not only textualise the economic system of penalties and rewards in Sumerian society but also reinforce the authority of the administrative order (Steinkeller, 1995, pp. 63-64; Stepien, 1996, pp. 154-156).

## **2. Institutional Investigation Procedures and Recording Protocols**

In Sumerian administration, every entry concerning lost livestock represents not only an inventory deficit but also an administrative process in which bureaucratic credibility is tested. The procedure begins when a deficit marked “-gaz” in flock ration tables (*še-ba* or *nig<sub>2</sub>-ba*) reaches the central authorities; only at this point does it become clear which animal disappeared, when, and under whose supervision (Al-Mutawalli, Sallaberger, 2017, p. 184). Upon this initial finding, the institutional shepherd or allocation officer immediately prepares a summary slip; this slip functions as the trigger document that opens a *zimmi* (investigation) file within the archival hierarchy. The slip’s header records the day and month, while the line showing the loss is subtracted from the total below, demonstrating that the administration has formalised its quantitative controls (Snell, 1986, p.138).

The *maškim* (investigating commissioner) or the provincial governor’s delegate in charge of the inquiry cross-checks earlier ration lists and related shipment documents to confirm the liable party; in this way, the incident is legally categorised as a matter of personal negligence or of environmental causation (Sallaberger, 2015, pp. 22-25).

The most striking feature of the procedure is the use of oath and surety. A suspect herdsman attempts to clear himself by swearing a “by-the-king” oath in the presence of witnesses; if the oath is rejected, the process moves on to calculating compensation. Laura Culbertson’s study of Ur III legal texts shows that, at this stage, the chain of evidence relies on a triad of oral testimony, written record, and physical seal (Culbertson, 2009, p. 78-83). Following the witness statements, the dossier typically closes with a one-line “decision” section: *šu-bi-in-ti* (“accepted and

delivered”). This formula records that the liable party has consented to the payment or the delivery of the replacement animal and thus declares the case resolved.

Compensation is calculated according to a standard table of equivalency values. According to Robert K. Englund’s estimates, in the Ur III economy an adult bovine was valued at 60 gur of barley, while a sheep was worth 6-7 gur; thus indemnities were settled not in cash, but most often by delivering an animal of the same species or by depositing an equivalent amount of barley in the storehouse (Englund, 2012, pp. 427-428). In the compensation tablet, the formula ‘gu<sub>4</sub>-bi še-bi’ or ‘udu-bi še-bi’ specifies the storehouse involved and the sealed official who carried out the collection, while the *kišib* (seal impressions) in the tablet’s low left corner formalise the execution of the decision.

The double-entry technique is another element that enhances bureaucratic transparency. The missing number recorded in the ration list is repeated verbatim in the investigation file, and in the compensation slip, the same figure is converted into its economic equivalent. In this way, the three interrelated documents trace the same event through numerical and textual dimensions, thereby completing the control mechanism. Bertrand Lafont and Raymond Westbrook’s compilation of Ur III legal texts sees the reason why sealed administrative tablets were regarded as *de facto* legal documents precisely in this combination of numerical continuity and seal-based accountability (Lafont, Westbrook, 2003, pp. 184-185).

Archival practice is also an integral part of the procedure. In the Drehem (Puzriš-Dagan) centralized archives, ration lists were stored on shelves in annual blocks, while investigation files were kept in event-based folders. Christina Tsouparopoulou observes that in the central livestock bureau plan she identified at Drehem, each compensation record was placed behind the corresponding investigation file in an 'L-shape' arrangement and labeled with the name of the official whose seal it bore; this physical organization allowed any auditor to verify the integrity of the file at a glance (Tsouparopoulou, 2013, pp. 1-2).

The flexibility in the investigation procedure relates to environmental risk factors. Natural causes such as floods, droughts, or seasonal migrations are evaluated under the category of “*gaba*” (accident); in such cases, compensation is usually calculated based on a 'base value' and no punitive measure is applied. In contrast, losses classified as “*gazi*” (theft) often require payment at one and a half times the value of the lost animal; the aim is deterrence and the rapid restoration of herd size. The study by Walther Sallaberger and Nawala Al-Mutawalli on the Drehem excavation records reveals that the compensation rate in theft cases was on average 50% higher (Al-Mutawalli, Sallaberger, 2017, p. 189).

Witness and evidence management reinforces the legal nature of the process. Culbertson’s analysis of provincial court records reveals that two types of oaths were used during the evidentiary phase: 'promissory' (to remain faithful until the transaction is completed) and 'evidentiary' (to affirm the truth of one’s statement before a divine power). In both cases, the oath text is added as a second column on the reverse of the tablet, separated from the main text; thus, even if the account is closed, the evidentiary section is physically preserved (Culbertson, 2009, pp. 88-93).

All these procedures demonstrate that Sumerian bureaucracy was grounded in the principle of accountability. Every loss begins as a numerical discrepancy; it evolves into a legal investigation; its financial compensation is recorded; and finally, it takes its place in an archive folder sealed on the shelf. The process is not merely about inventory control, but a mode of institutional self-reproduction: the chain of responsibility distributed among shepherd, official, scribe, and auditor is made visible and recorded through texts. Thus, missing animals serve as a critical indicator of both economic balance and administrative legitimacy in Sumerian governance practices.

### **3. Compensation Practices and Their Socio-Economic Dimensions**

In Sumerian society, once the investigation process regarding lost animals was completed, addressing the deficiency within the institutional framework held great importance for ensuring both economic stability and the preservation of

institutional reputation. The compensation practices activated during this process typically took the form of direct in-kind restitution (delivery of the same type and number of animals) or payment calculated based on an equivalent value in grain (mostly barley). The functioning of the compensation mechanism aimed not only to redress the economic loss but also to reinforce institutional discipline and social order. In this context, the frequently encountered compensation practices in cuneiform texts can be examined across various dimensions, ranging from economic calculations to the distribution of social responsibility.

The most common form of compensation in Sumerian records is the in-kind replacement of the lost animal. For example, in the case of a missing large livestock animal, the responsible person or persons are required to deliver an animal of the same type and age. This practice is aimed at promptly restoring the economic balance of the institution concerned (Zeder, 1994, pp. 180-181). Such entries, frequently found in the Drehem texts studied by Marcel Sigrist, clearly specify which storehouse or herd administrator received the in-kind compensation. Thus, the reintegration of the animals into the inventory is formally completed in terms of institutional order (Sigrist, 1992, pp. 103-104).

In cases where in-kind compensation was not possible or not preferred, payment was made in grain, particularly barley. Barley functioned as a standardized unit of value in the Sumerian economy. The grain equivalents for lost animals were calculated according to pre-established standard conversion tables. As clearly demonstrated in the works of Robert K. Englund, during the Ur III period, an adult bovine was equivalent to approximately 60 *gur* of barley, while a sheep or goat was worth around 6-7 *gur* of barley. These ratios are frequently indicated in compensation records using the formulas “*gu<sub>4</sub> še-bi*” (the barley of the ox) or “*udu še-bi*” (the barley of the sheep) (Englund, 2012, pp. 428-432). The granary to which the grain was delivered and the name of the official who received it are confirmed by a seal (*kišib*) placed at the bottom of the text. These sealed records formalize the payment obligation and confer legal validity to the compensation.

The social dimensions of this economically implemented compensation mechanism are also noteworthy. Lost animals were typically under the custody of shepherds or herd supervisors; therefore, the economic liability for the loss was primarily imposed on these individuals. Since shepherds were often from lower income groups, the financial burden resulting from the loss could have serious consequences for them. This situation laid the groundwork for the effective functioning of internal disciplinary mechanisms and responsibility systems within institutions. Researchers such as Piotr Steinkeller and Bertrand Lafont emphasize that these compensation practices played a role in reinforcing the institutional understanding of accountability and discipline (Lafont, Westbrook, 2003, p. 186; Steinkeller, 1995, pp. 60-64). Within this framework, incidents involving lost animals become not only records of economic relations but also written evidence of social hierarchy and administrative discipline in Sumerian society.

Social inequalities and sanctions are also an undeniable aspect of compensation practices. In institutional documents, cases where high ranking officials or administrators were held responsible for losses reveal that the form of compensation was applied more flexibly or alternative payment methods were employed (Veldhuis, 2005, pp. 116-119). In contrast, lower-status individuals such as low ranking officials or shepherds were subjected to stricter discipline and financial sanctions during the compensation process. Marek Stepien's study on the Umma texts clearly demonstrates how such status differences are reflected in the documents (Stepien, 1996, pp. 124-125). Thus, compensation practices become a mechanism that reproduces the social hierarchy within Sumerian society.

In cases of animal losses due to natural disasters or unavoidable circumstances, compensation obligations are reduced or entirely waived. In the texts, the term *gaba* (accident) is typically used for animals lost due to events such as floods, droughts, or sudden illness, and compensation rates are kept low. In contrast, in cases such as theft (*gazi*), a punitive element is introduced and the compensation rates are increased. As noted in the study by Walther Sallaberger and Nawala Al-

Mutawalli on the Drehem archives, in theft cases, compensation can reach up to fifty percent above the standard value (Al-Mutawalli, Sallaberger, 2017, pp. 190-191). Such differentiations demonstrate how the compensation mechanism was applied flexibly according to the nature of the incident.

Finally, the economic impact of compensation practices is directly linked to the sustainability of agricultural and institutional production processes. In production areas dependent on livestock, compensating for losses not only ensures the financial stability of the institution but also allows the production cycle to continue without interruption (Liu, 2021, pp. 120-130). In this respect, compensation practices constitute a significant bureaucratic instrument that guarantees the continuity of the economic order. The detailed nature of institutional records clearly reveals that these practices are a critical component supporting economic sustainability.

The compensation practices and their socio-economic dimensions discussed in this section demonstrate that institutional discipline, economic sustainability, and social order were tightly interconnected in the Sumerian system of governance. Records of lost animals are not merely administrative documents registering economic loss, but also concrete evidence of bureaucratic practices that safeguard social structure and economic balance.

### **Conclusion**

This study has examined how cases of lost animals an important issue in the context of livestock activities central to the economic and administrative organization of Sumerian cities were recorded, monitored, and resolved. Focusing particularly on cuneiform texts from the Ur III period, the analysis demonstrates that the phenomenon of lost animals was not seen merely as an economic loss, but also as a critical matter for ensuring institutional discipline and preserving social order.

The first section of this study provides a comprehensive evaluation of the classification of lost livestock records in cuneiform documentation. Within this framework, it has been determined that three distinct types of administrative texts ration lists, investigation dossiers, and compensation records form an interconnected

sequence that ensures the continuity of institutional operations. Ration lists enable the systematic monitoring of herds and constitute the primary means of identifying losses; investigation dossiers aim to establish the causes, responsible parties, and contextual circumstances of the deficiencies; and compensation records serve to rectify the loss through economic restitution, thereby restoring both institutional and fiscal balance. This tripartite documentation framework clearly reflects the organizational capacity of the Sumerian bureaucracy and its ability to preserve institutional memory through structured archival practices.

The second section addresses institutional review procedures and record-keeping protocols, shedding light on the legal and administrative responses of the Sumerian bureaucracy to cases of livestock loss. The investigation dossiers and procedural reports analyzed in this section reveal the implementation of a highly structured and detailed process in such instances. Particularly, the taking of witness testimonies, collection of evidence, administration of oaths, and the official sealing of documents demonstrate the legal rigor underpinning these inquiries. These texts also illustrate the application of the double-entry system, which reinforces the principle of bureaucratic transparency. The adoption of a consistent and systematic recording tradition at every stage of the process strengthens institutional accountability and administrative oversight, thereby ensuring that incidents of animal loss are meticulously documented and managed.

The third and final section of this study evaluates compensation practices and their socio-economic dimensions. The common mechanisms encountered in cuneiform texts demonstrate that these measures were primarily designed to expedite the redress of economic losses. Two principal forms of restitution emerge: in-kind delivery of replacement animals and monetary compensation in barley. Moreover, the documentation reveals a direct correlation between compensation arrangements and social status: high ranking officials and administrators often benefited from more flexible or preferential terms, whereas low ranking personnel faced stricter discipline and heavier financial penalties. Such differentiation in the restitution process played

a crucial role in maintaining and reproducing the social hierarchy within Sumerian society. Additionally, the separate treatment of special circumstances natural disasters versus theft and the corresponding adjustment of compensation rates underscore the flexibility and contextual adaptability of Sumerian bureaucratic practice.

In the first section of this study, a detailed assessment is presented on the classification of lost-livestock records within cuneiform sources. It identifies three interlinked categories of documents ration lists, investigation dossiers, and compensation records that together form a coherent chain ensuring the continuity of institutional operations. Ration lists enable systematic herd monitoring and serve as the initial means of detecting losses; investigation dossiers then establish the causes, responsible parties, and contextual circumstances of each incident; and compensation records effect economic redress for the deficits, thereby restoring both institutional and fiscal equilibrium. This tripartite documentary framework vividly demonstrates the organizational sophistication of the Sumerian bureaucracy and its capacity to enshrine institutional memory through structured record-keeping.

## References

- Algaze, G. (2008). *Ancient Mesopotamia at the dawn of civilization: The evolution of an urban landscape*. University of Chicago Press.
- Al-Mutawalli, N., & Sallaberger, W. (2017). The cuneiform documents from the Iraqi excavation at Drehem. *Zeitschrift für Assyriologie*, 107, 184–191.
- Béranger, M. (2020). Les troupeaux des temples d'Ur (20e–18e s. av. J.-C.): Aspects administratifs, religieux et archéologiques. In *Nouvelles recherches sur les archives d'Ur d'époque paléo-babylonienne Archibab 4*, pp. 233–304.
- Culbertson, L. E. (2009). *Dispute resolution in the provincial courts of the Third Dynasty of Ur* [Doctoral dissertation, University of Michigan].
- Englund, R. K. (2012). Equivalency values and the command economy of the Ur III period in Mesopotamia. In J. K. Papadopoulos & G. Urton (Eds.), *The construction of value in the ancient world* (pp. 427–449). Cotsen Institute of Archaeology.
- Garfinkle, S. J., Van De Mieroop, M., & Sauren, H. (2010). *Ur III tablets from the Columbia University Libraries* (CUSAS 16). Eisenbrauns.
- Kang, S. T. (1972). *Sumerian economic text from the Drehem Archive*. (Urbana: University of Illinois Press)
- Kramer, S. N. (2002). *Sümerler* (Ö. Buse, Trans.). Kabalcı Yayınları. (Original work published in English)

- Kuhrt, A. (2013). *Eski Çağ'da Yakındoğu (M.Ö. 3000–330)* (D. Şendil, Trans., Vol. 1). Türkiye İş Bankası Kültür Yayınları. (Original work published in English)
- Lafont, B., & Westbrook, R. (2003). Neo-Sumerian period (Ur III). *A History of Ancient Near Eastern Law*, Vol.I, pp. 183–226.
- Liu, C. (2021). Prosopography of individuals delivering animals to Puzrish-Dagan in Ur III Mesopotamia. *Akkadica*, 142(2), 120–130.
- Molina, M. (2016). Archives and Bookkeeping in Southern Mesopotamia During The Ur III. *Comptabilités*, 8, 9–15.
- Owen, D. I., & Mayr, R. H. (Eds.). (2007). *The Garšana archives* (CUSAS 3). CDL Press.
- Sallaberger, W. (1993). *Der kultische Kalender der Ur III-Zeit* (UAVA 7). de Gruyter.
- Sallaberger, W. (2015). Special cases and legal matters: Diction and function of letters in the state of the Third Dynasty of Ur (2110–2003 BC). In S. Procházka, L. Reinfandt, & S. Tost (Eds.), *Official epistolography and the language(s) of power: Proceedings of the First International Conference of the Research Network Imperium & Officium* (pp. 15–30). Austrian Academy of Sciences Press.
- Sigrist, M. (1992). *Drehem*. CDL Press.
- Sigrist, M., & Ozaki, T. (2009). *Neo-Sumerian administrative tablets from the Yale Babylonian Collection. Part One* (BPOA 6). CSIC.
- Snell, D. C. (1986). The Ram of Lagash. *Acta Sumerologica*, 8, 133–218.
- Steinkeller, P. (1995). Sheep and goat terminology in Ur III sources from Drehem. *Bulletin for Sumerian Agriculture*, 8, 49–70.
- Stepien, M. (1996). *Animal husbandry in the ancient Near East: A prosopographic study of third-millennium Umma*. CDL Press.
- Tsouparopoulou, C. (2013). A reconstruction of the Puzriš-Dagan central livestock agency. *CDLJ*, 2013(2), 1–2.
- Veldhuis, N. (2005). [Review of the book *Cuneiform texts from the Ur III period in the Oriental Institute, Vol. 2: Drehem administrative documents from the reign of Amar-Suena* (OIP 121), by M. Hilgert]. *Orientalia*, 74(1), 116–119.
- Zeder, M. A. (1994). Of kings and shepherds: Specialized animal economy in Ur III Mesopotamia. In G. Stein & M. S. Rothman (Eds.), *Chiefdoms and early states in the Near East: The organizational dynamics of complexity* (pp. 175–191). Prehistory Press.