

A Glance in Common Livestock Population Within Kerkuk City, Iraq

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ABSTRACT

Objective: Holding a precise estimation of livestock populations helps in both, establishing vital future national strategies and in controlling the public needs for meat, dairy, wool, and other products. While similar surveys on livestock are already performed in some Iraqi governorates, no such investigations are available for Kirkuk city, nor is there a reliable local official body to hold an approximate record of livestock except slaughterhouses that serve to assess the capacity of the city residents to consume meat per year. **Method:** Data are collected from the "Kerkuk Slaughter House" for four years (2022-2025) to estimate approximate numbers of livestock consumed by the public. **Results:** Iraqi livestock bio-diversities included sheep e.g. mostly, Awassi, Hamdani, Karadi, and Arabi types, meanwhile, goat population primarily consisted of 3 indigenous groups e.g. black goat, the Meriz (Kurdi) goat, and less prominent various hybrid crosses. Iraqi cattle were categorized into native or local breeds and exotic with high-yield breeds, while buffalos referred to the traditional, centuries-old water buffalo herded of the southern marshes. Average number of the 4 livestock slaughtered annually -in Kerkuk city- has been $103,593 \pm 3,180$ that made 70%, sheep, 19.6% cattle, 12.3% goat and buffalo 1.04% buffalo. **Novelty:** These data reflect underscored numbers of the livestock in only Kerkuk city used for meat consumption, while the real population may elevate 10% higher. Increase in the livestock population in Kirkuk city for years 2023-2025 is attributed to improvement in hygienic conditions following corona-virus pandemic (2019-2021).

INTRODUCTION

Primarily, while Mediterranean region has a huge landscape heterogeneity due to human activities i.e. cultivation and grazing, Iraq, as a part, is an agricultural country with a considerable number of people engaged in pastoral activity and animal husbandry [1]. The mosaic of plant diversity and animal population in Iraqi land, have created flourishing areas of agriculture and husbandry in plains, meadows and mountainous zones affecting, directly, agriculture and livestock husbandry [2], [3], [4]. Moreover, the diverse landscapes of the Iraqi lands have fostered significant animal genetic diversity manifested by a large number of local breeds [5], [6]. Such diversity had affected animal types and species where there might not be a single pure diverse of livestock exist in the country, unless they are preserved in special farms by professional breeders, who, unfortunately, are so rare. According to the annual report of Basra University in 2020, livestock farming is a cornerstone of Iraq's agricultural economy, accounting for about 30-40% of the total agricultural production value [7]. The world's small ruminant population is estimated at 2.551 billion heads, consisting of 1.363 billion sheep and 1.188 billion goats [8]. The distribution of sheep and goat populations in the Mediterranean area was recently investigated [9]. With about 153 million heads of sheep and 40 million heads of goat, the Mediterranean accounts for around 15% of the world's small ruminant

population. Indeed, decrease in numbers of livestock has been recorded in other Mediterranean countries during corona-virus years (2019-2021) e.g. Turkey, Greece, Italy and France.

The sector primarily consists of sheep, goats, and cattle, with highly concentrated populations in the northern region i.e. Suliymaniya and Erbil cities and the southern marshlands e.g. Thikar and Basra cities meanwhile, a very few proportion of camels and deer are not excluded though [10]. Local breeds in Iraq are precious genetic resources, adapted to the local environment and able to provide meat, milk, wool, and agricultural ecosystem services. Recently, in 2025, a survey was carried out concerning the development of livestock aimed to uncover the reality of livestock in some cities of Iraq for the period (2014-2024) had involved some most common animals e.g. sheep, goat, cattle and buffalo aimed to solve few outstanding problems facing the national livestock in the country e.g. numerical development of livestock per geographical distribution for the years [11]. Kirkuk governorate is an urbanized, agriculture, and forestry, as well as some other cities has not been included in [12].

The current investigation was designed to fill in a part of missing data regarding same animals focusing on their actual populations and frequencies collected from “Kirkuk Slaughtering House”, that encounters the numerical data as one of the most reliable official source of information as a source of meat production. The objectives of this research was to estimate the total number of livestock in Kerkuk city, for 4 years following corona-virus pandemic using records of city Slaughter House as the most reliable source of such census of local livestock.

RESEARCH METHOD

This investigation was designed as a retrospective descriptive study, analyzing data previously recorded in the “Kerkuk Slaughter House” during the period from 2022-2025. The data were obtained from the official records that are documented by expertise veterinarians during daily routine examinations. The records contain information on number of ruminant animals i.e. sheep, goats, cattle, buffalo and camels slaughtered on daily basis. All animals recorded in the slaughter house for years 2022–2025 involved healthy and complied with national health and hygienic terms and conditions. The data considered are reliable source that documented regularly post-examination by official expertise veterinary. The data was analyzed using descriptive bio-statistics programs i.e. Student T-test for four years (2022–2025) and are tabulated.

RESULTS AND DISCUSSION

The current results show that the annual average number of slaughtered animals in Kerkuk city has been $103,593 \pm 3,180$ within four years (2022-2025) but had insignificantly ($p \leq 0.06$) increased starting from year 2023 (Table -1). The annual average of sheep population, particularly, was around $69,464 \pm 873$, [70%], followed by cattle $20,302 \pm 1,107$ (19.59%), as a second; meanwhile, the goat became thirdly with $12,752 \pm 2,573$ heads (12.31%) and finally buffalo, the least, with $1,070 \pm 305$ heads (1.04%). The number

of slaughtered deer and camel were very few and therefore, excluded from the estimation. Topping up these head numbers of livestock with extra 10% of the average heads would bring the numbers of these livestock up to almost (114,000) heads per year. Considering the size of human population, this number, is very close to results of other researches carried out for other Iraqi cities.

Table 1. Numerical details of four most common livestock slaughtered at “Kerkuk Slaughter House” for the years 2022-2025.

Animals/year	Sheep	Goat	Cattle	Buffalo	Total
2022	68,754 (69.1%)	8,905 (8.95%)	21,192 (21.3%)	639 (0.64%)	99,490 (100%)
2023	68,500 (66.7%)	13,952 (13.59%)	19,001 (18.5%)	1,190 (1.162%)	102,643 (100%)
2024	70,100 (66.4%)	14,052 (13.31%)	20,215 (19.14%)	1,200 (1.137%)	105,567 (100%)
2025	70,500 (66.6%)	13,100 (12.37%)	21,001 (19.84%)	1,250 (1.18%)	105,851 (100%)
Total (%)	277,854 (67.05%)	51,009 (12.31%)	81,208 (19.59%)	4,299 (1.04%)	414,370 (100%)
Annual averages $\pm$ sd	69,464 $\pm$ 873	12,752 $\pm$ 2,573	20,302 $\pm$ 1,107	1,070 $\pm$ 305	103,593 $\pm$ 3,180

Numerical investigation in any developing countries i.e. Iraq cannot promote to ambitious accuracy for several reasons (1). Lack of obligatory registration of livestock heads at city Agricultural and Animal Wealth body council by the breeders and farmers; (2). Preference of public to get their livestock slaughtered by private butchers at home rather than at official slaughterhouses; (3). Dispersed herds spread over the villages, deserts, grazing lands leading to uncertain records; (4). Huge population of illegally imported livestock from neighborhoods crosses borders. Accordingly, establishment of any numerical estimation may not promote up to reliable records at any national or international survey for planning purposes or else. This research intended to rely on official records details of livestock slaughtered in “Slaughter House in Kirkuk” for the years 2022-2025 are underscored, though, it carries some accuracy and certainty [13]. The number of goats was significantly ($p \leq 0.05$) declined to almost 9,000/years in 2022 which might be attributed to corona-virus post era where some public refrained from meat consumption and to less consumption average of goat meat is due to poor lipid contents of goat meat in comparison with those of sheep. However, at year 2023 the public consumption of meats, in general, had increased following the corona-virus years (2019-2021) back to normal. Such an increase might be attributed to the recovery of the world from corona-virus pandemic. They could have been attributed to avoidance of health risk during the post corona-virus area where consumption of certain animals was declined [14]. Number of cattle slaughtered in all four years varied insignificantly, due

to public demand to red meat of cattle, meanwhile the less desire of public in buffalo meat, in comparison with cattle and sheep, might be attributed to the fact that buffalos are used mainly to produce thick milk cream rather than consumption their meats.

Small ruminants are primarily raised through smallholder household systems and traditional, nomadic grazing in rangelands. Currently, the sheep population numbers over 7.3 million heads, and goats account for nearly 1.5 million heads, both serving as essential sources of meat, milk, and wool [11]. The most common vital livestock involved in this research have been sheep, the small ruminants that made almost 70% and 13% of the general local livestock where they make up a crucial part of Iraq's agricultural sector. These proportions are in agreement to previous other researches done in different parts of Iraq [6]. Almost similar proportion has been documented in a most recent contributing roughly 78% of the country's total livestock population.

Livestock herds vary significantly by region, with goats often ranking high in population. Depending on the specific geographic study area, buffaloes generally constitute a much smaller, limited prportion of the total animal count. Meat products constitute one of the ancient cultural heritages of Mediterranean countries where the most popular traditional meat products of the North African and Mediterranean countries [15]. Majority type of sheep slaughtered were Awassi which is more favorable in Kerkuk city in comparison with other types. Reasons for such preference are not cited elsewhere but it might be due to quality and taste of their meat and richness in lipids. Breeds of sheep in whole Iraq are highly hybrids, and pure Awassi types are getting continuously rarer due to, illiteracy and negligence of breeders to keep Awassi sheep pure [16]. There are four main local cattle breeds in Iraq, namely the Al-Janoubi, Rastaki, Sharabi and Karadi where they belong to cows of the hot regions and are found heterogeneous otherwise. Cows census in Iraq in recent years has declined compared to the 1970s, when it reached more than two million cows at that time [17] although public desire in beef consumption would never decline. Similar studies may further explore the distribution and counts of these four animals in other cities to establish a national survey for whole Iraqi cities.

CONCLUSION

Fundamental Finding : This study provides an official retrospective estimation of livestock populations in Kirkuk city based on slaughterhouse records from 2022–2025, showing an annual average of $103,593 \pm 3,180$ slaughtered animals. Sheep represented the dominant livestock category (approximately 67–70%), followed by cattle (19.59%), goats (12.31%), and buffalo (1.04%), while deer and camels were excluded due to their negligible numbers. Livestock numbers showed a non-significant increase after 2022, with goat slaughter markedly lower in 2022 before recovering in subsequent years, suggesting a post-coronavirus restoration of meat consumption patterns. **Implication :** The findings demonstrate that official slaughterhouse records can serve as a practical and relatively reliable source for estimating local livestock populations in situations where comprehensive national livestock registration is unavailable. The observed recovery in

slaughter numbers after the coronavirus pandemic indicates improving livestock utilization and meat demand, while the dominance of sheep highlights their major contribution to the agricultural economy and food supply in Kirkuk. These data may support agricultural planning, livestock management, and future national livestock assessments in Iraq. **Limitation** : The livestock estimates are likely to underestimate the actual population because many animals are slaughtered privately outside official slaughterhouses, livestock registration by breeders is not mandatory, herds are widely dispersed across villages and grazing lands, and illegally imported animals crossing national borders are not represented in the official records. Consequently, slaughterhouse data cannot fully capture the complete livestock census at either the regional or national level. **Future Research** : Future studies should investigate the distribution and population of the major livestock species across additional Iraqi cities to establish a comprehensive national livestock survey. Further research is also needed to clarify regional variations in livestock composition, evaluate factors influencing breed preferences and population changes, and improve the accuracy of livestock estimation methods beyond official slaughterhouse records.

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REFERENCES

- [1] D.A. Telo and L. Gama. Animal genetic resources and sustainable development in the Mediterranean region. In: Ramalho Ribeiro J.M.C., Horta A.E.M., Mosconi C., Rosati A., editors. *Animal Products from the Mediterranean Area*. 119th ed. Academic Publishers; Wageningen, The Netherlands: 2006. pp. 127-136.
- [2] J. Boyazoglu, and Y. Hatziminaoglou, Livestock genetic resources and production systems: A Mediterranean overview. *Arch. Latinoam. Prod. Anim.* 1: 60–61; 2002. <https://revista.alpaenlinea.org/index.php/alpa/article/view/2993>
- [3] D. Michaelides S., Karacostas T., Luis Sanchez J., Retalis A., Pytharoulis I., Homar V., Romero R., Zanis P., Giannakopoulos C., Buehl J., et al. Reviews and perspectives of high impact atmospheric processes in the Mediterranean. *Atmos. Res.* 208: 4-44. 2018. doi: 10.1016/j.atmosres.2017.11.022.
- [4] E. Aguilera, C. Diaz-Gaona, R. Garcia-Laureano, C. Reyes-Palomo, G. I. Guzmán, L. Ortolani, M. Sánchez-Rodríguez, V. Rodríguez-Estévez, Agroecology for adaptation to climate change and resource depletion in the Mediterranean region. *Review. Agric. Syst.* 2020; 181:102809. doi: 10.1016/j.agry.2020.102809.
- [5] J. L. Riedel, A. Bernués, and I. Casasús. Livestock Grazing Impacts on Herbage and Shrub Dynamics in a Mediterranean Natural Park. *Rangel. Ecol. Manag.* 66: 224-233. 2013. doi: 10.2111/REM-D-11-00196.1.
- [6] D. Oikonomou, M. Vrahnakis, M. Yiakoulaki, G. Xanthopoulos, and Y. Kazoglou. Grazing as a Management Tool in Mediterranean Pastures: A Meta-Analysis Based on A Literature Review. *Land.* 12: 1290. 2023. doi: 10.3390/land12071290.

- [7] H. M. A. Ahmad, M. S. B. Al-Bek and M. Y. Al-Allaf. Comparison between the characteristic of pure and mixed stands of *Pinus brutia* ten and s *Qercus* spp. Grown in Dohuk region. *Eropean Journal of Agricultural and Rural Education (EJARE)*. 6(1): 1-7. 2025. <https://www.scholarzest.com> <https://scholarzest.com/index.php/ejare/issue/view/234>
- [8] FAOSTAT (Food and Agriculture Organization of the United Nations) Statistics Database. Annual report, 2025. Livestock systems in sub-Saharan Africa. Annual Report. <http://www.fao.org/faostat/en/#data>. <https://www.fao.org/4/j1255e/j1255e05.htm>.
- [9] R. Marino, M. Caroprese, and M. Albenzio. An Analysis of Small-Ruminant Farming in Marginal Area of the Mediterranean Region: A Focus on the Gentile di Puglia Breed. *Animal Basel*. 16(9):1356. 2026. doi: 10.3390/ani16091356
- [10] J. E. Alkass, and K. H. Juma. Characterization of small ruminant breeds in west Asia and North Africa. *Small Ruminant Research*. 1: 63-101. 2006. <https://cgspace.cgiar.org/items/a6f297d1-71e3-479d-aa51-cef74f52fef6>
- [11] Z. K. H. Faleh. Quantitative and qualitative trends in livestock development in Iraq for the period (2014-2024). *Journal of Tikrit University for Humanities*: 32(8): p4. 2025. DOI:10.25130/jtuh.32.8.4.2025.06.
- [12] M. A. Jabir. The Spatial Relationships of the Qualitative Composition of Livestock and the Production Structure of Forage Crops in Thi-Qar Governorate. 2(42): 365-425. 2023. Literature and Language, Historical Studies Geography, Educational and Psychological Sciences/Geography. DOI: <https://doi.org/10.32792/tqartj.v2i42.450>. (<https://orcid.org/0009-0005-7344-4264>).
- [13] A. A. Bazzaz; F. J. Bayatli; S.A. Kupurlu, R. W. Al-Hassan. Incidence of epidemic diseases in livestock for years (2022-2025) within Kirkuk city, Iraq (Submitted, 2026).
- [14] A. A. Bazzaz, M.E. Musa, S. A. Yassin, E. E. Muhammad, and N. A. Chelebi. Vulnerability of Blood Type-A to Coronavirus Delta Strain. *Medicine and Clinical Science*; 6(5): 1-4. 2024. <https://www.scienceexcel.com/articles/IZ0cxFKzQJSHCe5LEbHHm8YQN2t7Lg1yKbPJkg5e.pdf>
- [15] M. Gagaoua; H.R. Boudechicha. Ethnic meat products of the North African and Mediterranean countries: An overview. *J. Ethn. Foods*. 5: 83-98. 2018. doi: 10.1016/j.jef.2018.02.004.
- [16] K. S. Al-Aubaidi, R.Y. Toma, I.M. Al-Sabi, K. Koster, and R.G. Jones. *Evaluation of fall shearing of Awassi lambs. Technical Report*. No. 10. 1968. Animal Husbandry Research and Training Project, Baghdad. Rome, FAO.
- [17] M. A. J. Al-Fayad. Reference study of local cattle in Iraq. *Eropean Journal of Agricultural and Rural Education (EJARE)*. 6(1): 19-31. 2006. <https://www.scholarzest.co>. <https://www.neliti.com/publications/605784/>

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