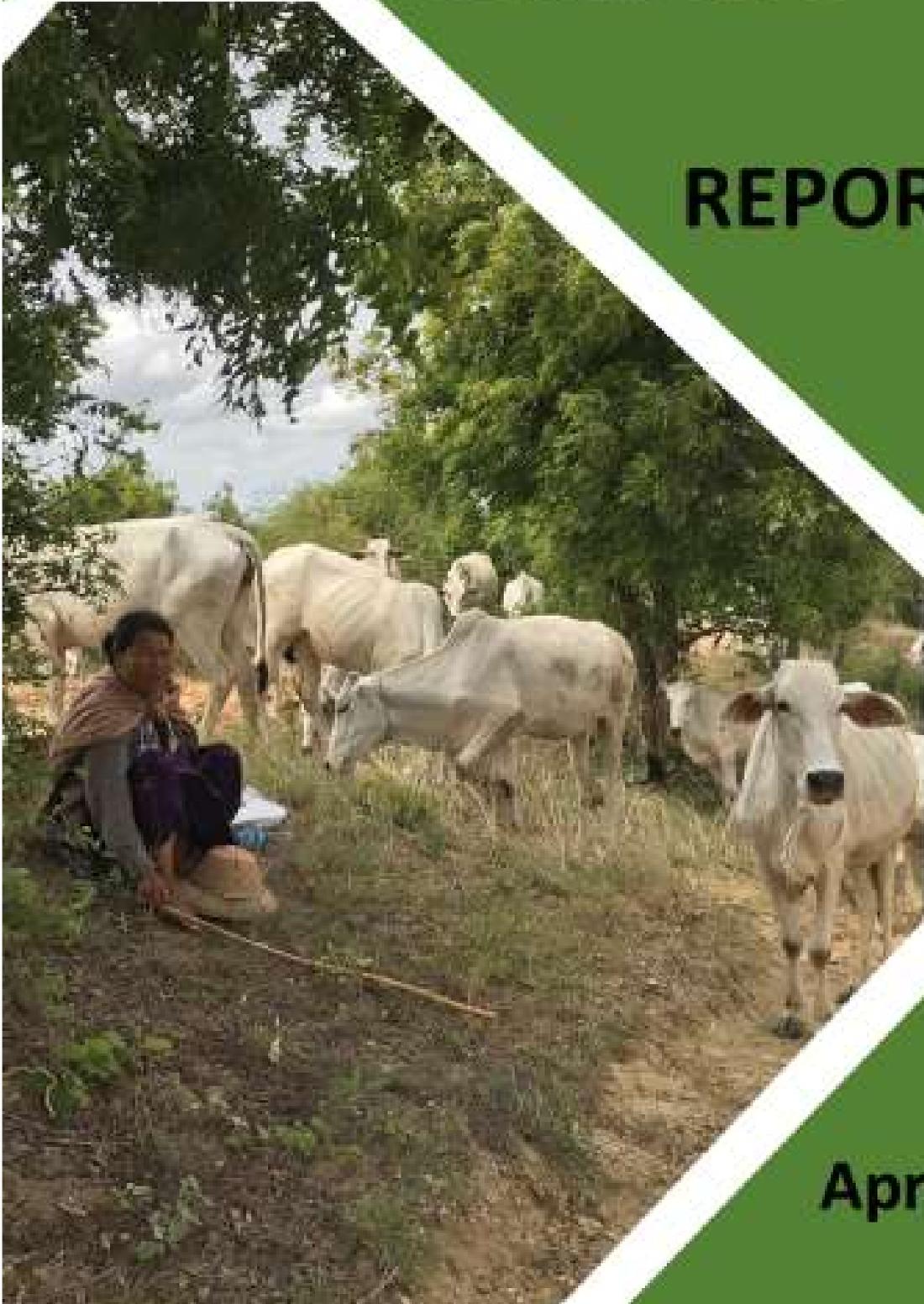




NATIONAL LIVESTOCK BASELINE SURVEY 2018

REPORT



April 2019



Prepared with the technical support of the
Food and Agriculture Organization of the United Nations



L i v e l i h o o d s a n d F o o d S e c u r i t y F u n d



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Foreword

The National Livestock Baseline Survey (NLBS) 2018 was conducted to update the data on the livestock sector in order to inform policy-makers, decision-makers and concerned organizations for planning purposes, both in government and private sector.

The NLBS 2018 was implemented eight years after the last substantial livestock population survey in the Myanmar Census of Agriculture (MCA), 2010.

The livestock population in Myanmar is dynamic, with livestock populations changing rapidly in response to economic development, urbanization, and regional trade flows. The demand for livestock products – meat, eggs and milk for human nutrition– changes rapidly in terms of both quantity and quality and this attracts investment and employment, posing both opportunities and challenges for policy makers. The challenges of climate change, antimicrobial resistance and transboundary animal diseases are increasing. The NLBS provides reliable data to inform policy processes on all these issues.

The NLBS 2018 was implemented by the Livestock Breeding and Veterinary Department (LBVD) as the lead agency, with the support of related government agencies. Technical support was provided by the Food and Agriculture Organization of the United Nations (FAO), through the project “Improving Farmer Livelihoods in the Dry Zone through Improved Livestock Health, Productivity and Marketing”, supported by the Livelihoods and Food Security Fund (LIFT).

The NLBS 2018 was implemented in a number of stages, beginning with pilot surveys in 2016 and expanded pilots and enumerator training in 2017. Data was collected from townships, villages and wards in February 2018 and May 2018. This publication represents analysis of data collected from 1.58 million holdings in 289 townships, and 12 804 villages and wards.

I would like to express my sincere thanks for the technical and logistical support provided to the Ministry of Agriculture Livestock and Irrigation that enabled the LBVD to undertake the NLBS 2018.

I would also like to extend my gratitude to FAO Myanmar for technical and financial support for the completion, analysis and presentation of the data from the NLBS 2018, to all staff of the LBVD and related agencies, as well as all consultants and others who contributed in many ways to the NLBS 2018.

Union Minister, MoALI

Foreword

The Food and Agriculture Organization of the United Nations (FAO) has a strong commitment to the collection of quality data in the food and agriculture sector in member countries.

Such data plays an important role in informing policies in member countries, while also contributing to regional and global monitoring. In this regard, FAO develops methodologies and standards for data collection, validation, processing and analysis. FAO also plays a vital part in the global compilation, processing and dissemination of food and agriculture statistics, and provides essential statistical capacity development to member countries.

The support that FAO has been able to provide to the Livestock Breeding and Veterinary Department in the conduct of the National Livestock Baseline Survey (NLBS) 2018 is consistent with the global mandate of FAO, and aligned with the FAO Country Programming Framework for Myanmar (2017-2022). The importance of updated national livestock population data was also highlighted in the Myanmar Agricultural Development Strategy and Investment Plan (2018-19 – 2022-23).

FAO technical support to the NLBS 2018 was provided through the project “Improving Farmer Livelihoods in the Dry Zone through Improved Livestock Health, Productivity and Marketing” funded by the Livelihoods and Food Security Fund (LIFT). I would like to acknowledge the support of LIFT in this regard.

I would like to express my congratulations on behalf of FAO to the Ministry of Agriculture Livestock and Irrigation, related agencies and the Livestock Breeding and Veterinary Department for the successful implementation of the NLBS 2018.

Ms. Xiaojie Fan

FAO Representative in Myanmar

Executive Summary

Introduction

This report is the main, overarching report of The National Livestock Baseline Survey 2018 (NLBS). Supplementary thematic reports will be produced based on further analysis of data by location, livestock species and type, holding size and production and supply of livestock products.

The NLBS was the first, nationwide survey of livestock populations since the Myanmar Census of Agriculture (MCA) 2010. The NLBS was conducted for the purpose of informing policy development and investment planning for the livestock sector.

The NLBS was conducted by the Livestock Breeding and Veterinary Department (LBVD) of the Ministry of Agriculture, Livestock and Irrigation (MoALI) with the support of other government agencies. Technical support was provided by the Food and Agriculture Organization of the United Nations (FAO) through the project “Improving Farmer Livelihoods in the Dry Zone through Improved Livestock Health, Productivity and Marketing”, supported by the Livelihoods and Food Security Fund (LIFT).

Data sources and estimation of livestock populations

The NLBS 2018 report presents data from 1,571,525 households (holdings¹) in 12,804 villages and wards from 289 townships. Data was derived from two sources:

- i) a survey of all holdings in 20 percent of villages and wards in each township, and
- ii) a census of all farms with large numbers of livestock (large holdings²).

The majority of this data was collected in February 2018, based on complete enumeration of all holdings in a random selection of 20 percent of villages and wards in each township. Portions of the data came from pilot surveys in 2016 and 2017. Data was also collected from 10,909 large holdings, representing all large holdings in 289 townships.

Data from the Village/Ward dataset was extrapolated to estimate the livestock populations in each township. Data on large holdings from the Village/Ward dataset was added to the data from the large holding census. There was no extrapolation of the large holding data, as it considered to be a census.

Results

Livestock holdings and national livestock populations

The survey found that 58 percent of holdings raised animals. The survey captured data on cattle, buffaloes, pigs, mythun, sheep, goats and poultry (chickens, ducks, geese, quail and turkeys), dogs and horses. The survey did not capture data on other animals such as elephants.

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¹ Every household (holding) in selected villages was surveyed, including those without land or livestock.

² Large holdings were defined as having more than 20 dairy cattle, 30 pigs, 1,000 chickens or 3,000 quails.

The most common animals raised by holdings were native poultry, being mostly native chickens. A total of 40 percent of holdings raised native poultry, with an average of 11 birds per holding, making a total of 49 million birds.

The next most common livestock types for holdings were draught cattle and pigs. Twenty-three percent of holdings raised draught cattle, with an average of 4.3 head per holding, making a national population of about 9.6 million. Also, 22 percent of holdings raised pigs, with an average of 2.6 head per holding, making a national population of 5.8 million. The next most popular animal type was dogs, raised by 21 percent of holdings.

A total of four percent of holdings raised buffaloes making a total population of 1.9 million, and two percent of holdings raised goats, making a total population of 1.8 million.

Less than one percent of holdings raised the other types – dairy cattle (population 129,000), horses (population 63,000), dairy buffalo (population 34,000), sheep (population 354,000), ducks for meat (197,000 birds) or eggs (3 million birds), chicken broilers for meat (16.1 million birds) or chicken layers for eggs (12.8 million birds). The percentage of holdings which raised mythun was less than one percent on a national basis, but was 12 percent of holdings in Chin State where mythun are concentrated.

Relative populations of livestock types by location

The mix of livestock types raised by Region State varied, reflecting their location in agroecological zones. The central dry zone is dominated by draught cattle, with significant goat and sheep populations raised by a relatively small number of holdings.

Draught buffaloes and pigs were relatively numerous in upland areas. Coastal and delta areas (not including Rakhine) had low cattle numbers but pigs were relatively numerous in some areas, especially in the Ayeyarwady Region.

Conclusion

This report provides an overview of the populations of the various livestock types, their ownership and geographical distribution. It provides evidence of the role and trends of livestock raising in the Myanmar economy to guide public sector policy makers and private sector investment. It represents a baseline for informing and evaluating investments. The evidence base provided by the NLBS 2018 is expected to contribute to the following policy issues:

- Public and Private Investment in the sector
- Contribution of Livestock to Gross Domestic Product
- Estimates of live animal offtake for slaughter and consumption
- Estimates of livestock product turnoff (meat, eggs, milk)
- Policies on human nutrition
- Greenhouse Gas Emissions (GHG) from livestock
- Livestock trade, in particular the cattle export trade
- Livelihood assets and income analysis, including gender aspects
- Direction for animal health control programs and production and marketing extension activities
- Farm registration for disease control, monitoring antimicrobial use, to contribute to anti-microbial resistance (AMR) policy

- Direction for livestock research
- Education and Training Needs
- Employment in the sector
- Livestock Sector importance relative to other sectors (e.g. cropping)
- Private investment in the sector (commercial feed supplies, processing and trade)
- identify trends in the livestock population and structure

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List of Acronyms

AEZ	Agro-ecological zone
AMR	Anti-microbial resistance
CDZ	Central Dry Zone
CSPro	Census and Survey Processing System
FAO	Food and Agriculture Organization of the United Nations (FAO),
GAD	General Administration Department
LBVD	Livestock Breeding and Veterinary Department
LIFT	Livelihoods and Food Security Fund
MCA	Myanmar Census of Agriculture MCA
MoALI	Ministry of Agriculture Livestock and irrigation
NLBS	National Livestock Baseline Survey
PCodes	Place Codes
RS	Region State

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SECTION 1 BASIC INFORMATION

SECTION 1 BASIC INFORMATION

Country Background

1. Myanmar is the second largest country in Southeast Asia with a total land area of approximately 677,000 square kilometres. It has a widely varying geography with fertile tropical deltas in the south, extensive coastline, and a rugged landscape in the Himalayan foothills in the north. It shares borders with 40% of the world's population - to the north and northeast with the People's Republic of China, to the east and southeast with Lao People's Democratic Republic and Thailand, and to the west and northwest with Bangladesh and India. Myanmar's long coastline provides access to sea routes and deep-sea ports, and the country is rich in natural resources including arable land, forests, minerals, natural gas, and freshwater and marine resources. The economy is dominated by agriculture and farm-related activities.

2. Myanmar is also one of the world's most diverse countries, with a rich history and a wealth of cultural and religious traditions, and as many as 135 different ethnic groups. The 2014 census found the population was 51.5 million. While the country's population density is among the lowest in South East Asia, this masks a wide variation with two-thirds of the population living in rural areas and the larger urban populations concentrated in Yangon and Mandalay.

3. Administratively, Myanmar is divided into seven states, seven regions and one union territory (Nay Pyi Taw). The states - Chin, Kachin, Kayah, Kayin, Mon, Rakhine, and Shan - cover mainly the upland areas and are largely populated by national races/ethnic communities. The regions - Ayeyarwady, Bago, Magway, Mandalay, Sagaing, Tanintharyi, and Yangon - are situated mainly on the plains with a population of predominantly Bamar origin. The regions, states and union territory are further divided into districts, districts to townships, and townships to village tracts and towns. Village tracts consist of villages, and towns of wards.

4. Livestock play an important role in the country's economic and social life, providing the country with meat, eggs and milk. Cattle and buffalo are the major source of draught power for crop production, although mechanization is increasing rapidly in many areas. Cattle and buffalo also provide manure as fertilizer for crops, and are an important source of cash income for households throughout the country. Pigs are an important source of income for smallholders and native chicken raising in backyard fashion is both a source of income and an opportunity for local consumption. Pigs, broiler chickens, layer chickens, meat- and egg-breed ducks are raised intensively under commercial conditions. Egg-breed ducks are also raised by smallholders for cash income. Dairy cattle and dairy buffalo are raised to provide milk products for local markets; mythun are raised in the hills of Chin State for cash income. Goats and sheep are raised mostly by smallholders for cash income. Horses are used for transport in local areas. Households throughout urban and country areas keep dogs.

5. The diversity of Myanmar's geography is reflected in the diversity of its farming systems, and in turn the various breeds of livestock have developed to be adapted to these

systems. Different breeds of cattle, pigs, goats, chickens especially can be seen throughout the country. Located near to growing economies, cross-border trade in livestock and livestock products is also an important feature of the livestock sector.

Background to national livestock baseline survey

Six Township Survey

6. In mid-2016, the FAO project “Improving Farmer Livelihoods in the Dry Zone through Improved Livestock Health, Productivity and Marketing”, funded by LIFT, conducted a survey of livestock populations in 12 villages in Natogyi township in Myingyan District in Mandalay Region. The findings indicated that the livestock population was markedly lower than the official populations. This was followed up with an expanded survey of 24 villages and 6 wards to both get more data and to act as a pilot for LBVD staff training.

7. It was subsequently decided to conduct a complete enumeration of all households in the six-township project area, in order to provide an accurate estimate of the livestock population. This began in late 2016.

Eight Township Survey

8. As early results confirmed the difference between official and actual livestock populations, the LBVD became interested in an expanded pilot, with a view to implementing a national survey at a later date. For this purpose, LBVD implemented an eight-township survey in Mandalay Region.

National Survey

9. Based on the experiences of the pilots, the government approved a national survey to be conducted in early 2018, to cover all townships of the country, except the 14 townships that had been covered in the previous surveys, and those townships deemed to be of an urban nature with few livestock.

Village/ Ward Survey

10. Together, the six-township survey, eight-township survey and national survey are referred to as the “National Village/ Ward Survey”.

Large Holding Census

11. Since many of the larger holdings raising livestock (especially chicken layers, broilers, semi-broilers, dairy cattle and pigs) could be concentrated in particular areas, a survey based on random selection of villages in the townships could potentially either under- or over-estimate the populations of these livestock types, depending on areas of concentration. Therefore, a complete census of the larger holdings in the villages and wards not covered in the “National Village/ Ward Survey” was conducted in May 2018.

National Livestock Baseline Survey

12. The National Livestock Baseline Survey (NLBS) is defined as the merging of data “National Village/ Ward Sample Survey” and the “Large Holding Census”.

Objectives

13. The main objective of the NLBS was to contribute to policy and investment planning in the livestock sector, through providing basic data on the current populations and ownership of livestock in the country. The NLBS is expected to contribute to the following policy issues:

- Public and Private Investment in the sector
- Contribution of Livestock to Gross Domestic Product
- Estimates of live animal offtake for slaughter and consumption
- Estimates of livestock product turnoff (milk, eggs, meat)
- Policies on human nutrition
- Greenhouse Gas Emissions (GHG) from livestock
- Livestock trade, in particular the cattle export trade
- Livelihood assets and income analysis, including gender aspects
- Direction for animal health control programs and production and marketing extension activities
- Farm registration for disease control, monitoring antimicrobial use, to contribute to anti-microbial resistance (AMR) policy
- Direction for livestock research
- Education and Training Needs
- Employment in the sector
- Livestock Sector importance relative to other sectors (e.g. cropping)
- Private investment in the sector (commercial feed supplies, processing and trade)
- identify trends in the livestock population and structure, combined with the data from the 2010 Agricultural Census

14. Secondary objectives were to strengthen government capacity, especially the LBVD,

- to plan and implement field surveys
- to manage data, using a combination of paper, tablet data management and associated software, and Excel, and explore the use of other software for managing large datasets
- to utilize the data to develop knowledge products for livestock sector and other stakeholders

15. While the Agricultural Census 2010 provided an estimate of livestock populations, as will the planned Agricultural Census 2020, the NLBS is considered as an “inter-census” survey.

What data was collected

16. In the six-township survey, data was collected on

- Household location (State/ Region, District, township, village tract, village)
- Respondent details (sex, position in household, contact)
- Head of household (sex, contact)
- Livestock species, age and sex (cattle, buffalo, horse, pig, goat, sheep, dog, poultry)
- Milk collected from local breed cattle
- Area of land cropped

- Commercial chicken housing (production zone, fish ponds)
17. In the eight-township survey, data was collected on
- Household location (State/ Region, District, township, village tract, village)
 - Head of household (sex, contact)
 - Livestock species, age and sex (cattle, buffalo, horse, pig, goat, sheep, dog, poultry)
 - Livestock breeding (artificial insemination and bulls in cattle, boars in pigs)
 - Commercial chicken housing (production zone, fish ponds)
18. In the national survey, data was collected on
- Household location (State/ Region, District, township, village tract, village)
 - Respondent details (sex, position in household, contact)
 - Head of household (sex, contact)
 - Mechanisation (ownership and renting of tractors and combine harvesters)
 - Area of land cropped
 - Livestock species, age and sex (cattle, buffalo, horse, pig, goat, sheep, dog, poultry)
 - Commercial chicken housing (production zone, fish ponds)
19. In the large holding census, data was collected on
- Farm ownership and registration
 - Respondent details
 - Numbers and type of livestock (chickens - broilers, semi-broilers, layers; dairy cattle, pigs, mythun)
 - production parameters and employment
20. The population data from the large chicken, quail, dairy cattle and pig holdings is being utilized in the report of the NLBS. Large chicken farms were defined as those farms with over 1,000 broilers, semi-broilers, or layers; quail over 3,000 birds; large dairy farms were those with over 20 head; and large pig farms were those with over 30 head.

Description	Size
Large quail holding	Over 3,000 birds
Large chicken broiler holding	Over 1,000 birds
Large chicken layer holding	Over 1,000 birds
Large pig holding	Over 30 head
Large Dairy Cattle holding	Over 20 head

Table 1: Definitions of large holdings used in the survey

Where was the data collected?

Six Township Survey

21. In the six-township survey, data was collected from all holdings in all villages and wards in four townships of Mandalay (Myingyan, Natogyi, Taungtha, and Mahlaing), and two townships of Magway (Pakokku and Yesagyo). This was a total of 267,211 holdings in 1,182 villages and 61 wards.

Eight Township Survey

22. In the eight-township survey, data was collected from all holdings in 60 percent of randomly selected villages and one ward per township. All townships were in Mandalay (Kyaukse, Meiktila, Myittha, Ngazun, Sintgaing, Tada-U, Thazi, and Wundwin). This was a total of 201,658 holdings in 577 villages and wards.

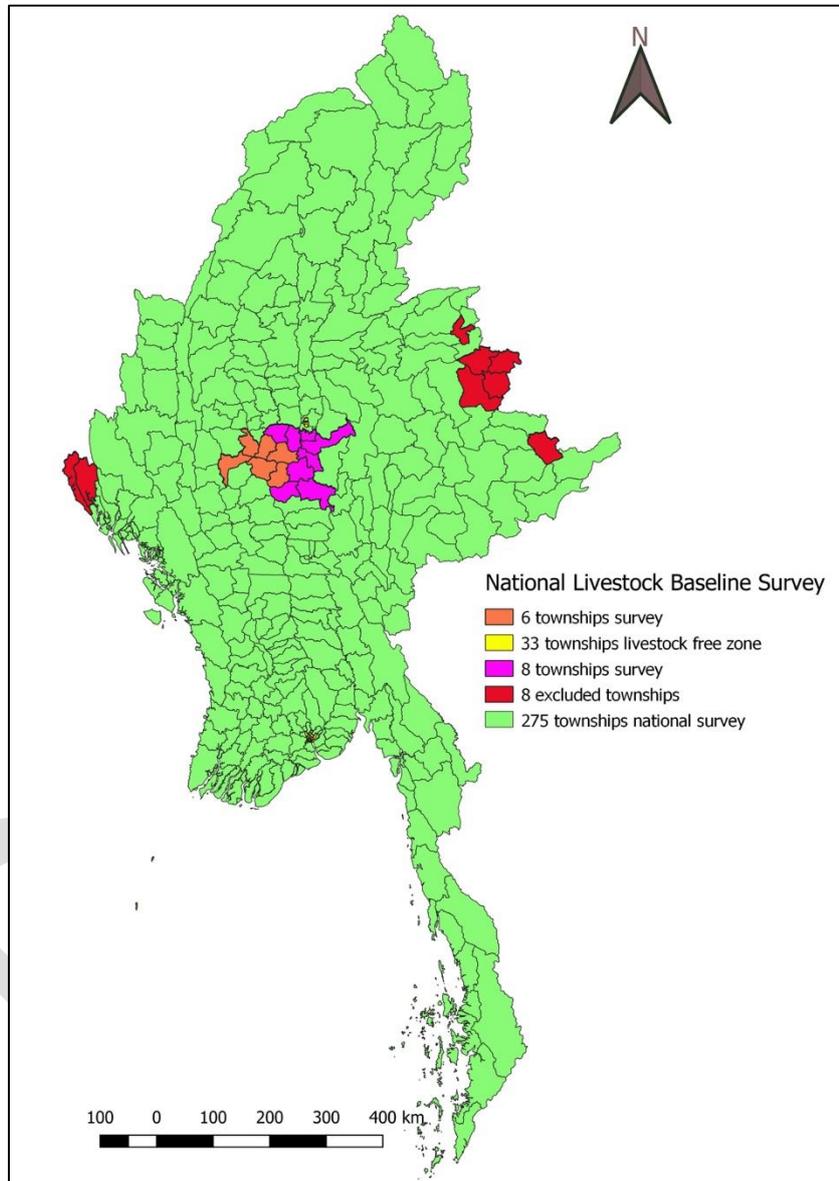


Figure 1: Map showing locations of the six-, eight-, and national surveys, and excluded townships

National survey

23. In the national survey, it was planned that data would be collected from all holdings in 20 percent of all villages and wards in accessible rural townships, and not including the 14 townships already surveyed. Thirty three townships are urban and so were excluded (28 in Yangon and 5 in Mandalay). Eight townships were later excluded for accessibility reasons. Myanmar has 330 townships, so 275 townships were surveyed.

24. Twenty percent of villages and wards were selected randomly within each township using Excel, based on the September 2017 GAD release of Place Codes (PCodes). These villages and wards were reviewed by Township LBVD staff and those villages deemed by staff to be inaccessible for security or other reasons were excluded, and replaced with villages next on the randomly selected list. All wards were accepted.

25. In the event, not all townships managed to survey the full 20 percent of villages for a variety of logistical and other reasons. Ten townships collected less than 10 percent of villages: two townships in each of Kachin, Kayah, Shan (East) and Shan (South), and one each in Kayin and Naypyitaw. Nineteen townships collected between 10 percent and 14 percent of villages in their townships, and 103 townships collected from 15-19 percent of villages. The remaining 153 township collected between 20-22 percent of villages. This gave a total of 1,450,580 holdings. All households in the villages were counted as “holdings”, even if they had no land or livestock.

26. In wards, in all the surveys, the full interview and questionnaire was only conducted with households (“holdings”) who identified themselves as having livestock. If they had no livestock, the holding was recorded but no additional data was collected.

Large Holding Census

27. The large holding census collected data from the areas within each township which were not covered by the previous surveys. Data was collected from 10,909 holdings.

When was the data collected?

28. Data for the six-township survey was collected from December 2016 through to December 2017. In the eight-township survey, data was collected in March 2017. In the national survey, data was collected in January-February 2018. In the large holding census, data was collected in May 2018.

Who collected and managed the data, and how?

29. In the six-township survey, enumerators collected data on paper forms which was then entered into Excel by LBVD staff. The enumerators were trained by LBVD staff and FAO project personnel. The data was processed by LBVD staff assigned to the project and FAO project personnel.

30. In the eight-township survey, enumerators collected data on paper forms which was then entered into Excel by LBVD staff or into *CSPRO* by a commercial service provider, before being managed in Excel by LBVD staff and FAO project personnel.



Figure 2: Over 20,000 interviewers collected data from nearly 1.6 million holdings

31. In the national survey, enumerators collected data on paper forms. The data was then entered into tablets by township LBVD staff using *CommCare* mobile data collection platform, after which data was exported into Excel. The data was processed by LBVD staff assigned to the project and FAO project personnel.

32. In the large holding census, data was collected by LBVD staff who entered the data directly into tablets using *Commcare*.

Combining the data from the surveys

33. In combining the data from the four surveys for the NLBS, a random selection of villages and wards was taken from the six- and eight-township surveys to make up 20 percent of villages and wards in the survey areas, and combined with the data from the national survey. This represented 1 571 525 holdings, in 12 273 villages (representing 17.4 percent of all 70,659 villages) and in 531 wards (16.4 percent of all 3,228 wards) from 289 townships.

34. The data on the large chicken (broiler, semi-broilers and egg layers), dairy and pig holdings from the six-, eight-, and national surveys was extracted and added to the large holding census data. As a result of managing the data in this way, the data was arranged into two data sets represented graphically in Figure 1:

- "Village/Ward Dataset"
- "Large Holding Dataset"

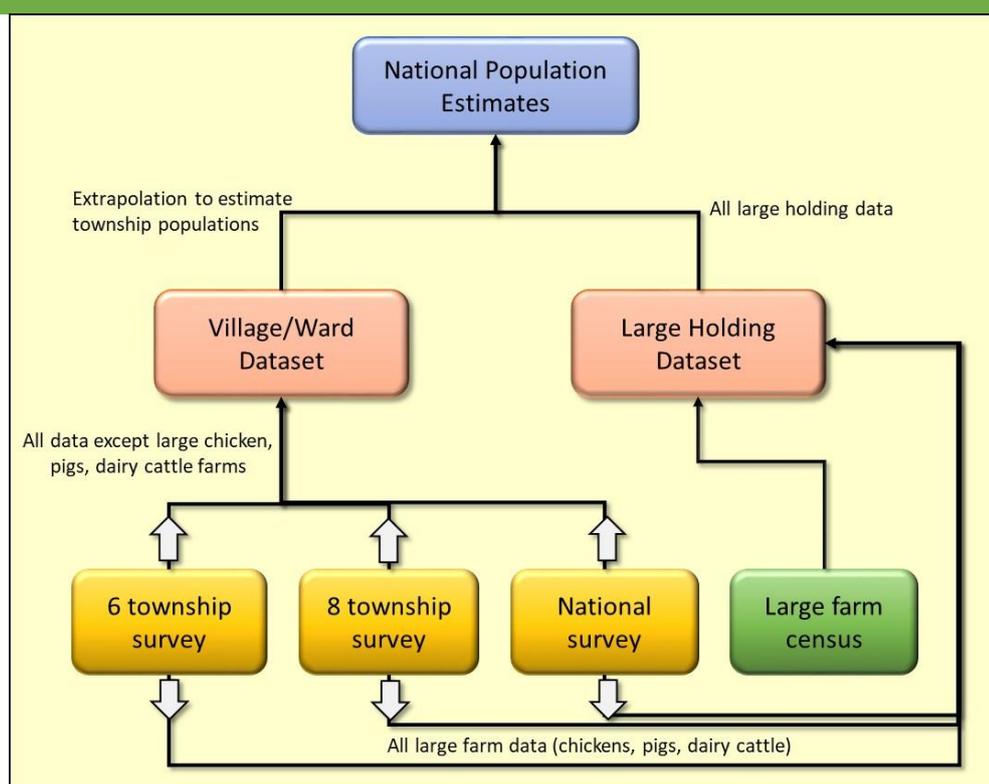


Figure 3: Combination of survey data to estimate national population data

Estimating total populations from the sample

35. Data from the Village/Ward dataset was extrapolated to estimate the populations in each township of draught cattle, dairy cattle (up to 20 head), buffaloes (draught and dairy), goats, sheep, pigs (up to 30 head), dogs, native poultry, ducks (egg and meat-producing), quail and chickens (broiler, semi-broiler and layers on holdings with up to 1,000 birds).

36. For villages, data was multiplied by a factor consistent with the proportion of villages surveyed. So, if 20 percent of villages were surveyed, the data was multiplied by a factor of five. For the wards, the data was multiplied by a factor consistent with an estimate of the proportion of holdings surveyed, based on the 2014 Human Population Census.

37. Data on large holdings from the four surveys was added to the data from the large holding census. There was no extrapolation of this data, as it considered to be a census.

Governance and oversight

38. The six-township survey was overseen by FAO project staff and the LBVD staff assigned to the project. The eight-township survey was overseen by LBVD with FAO technical support.

39. The national survey was overseen by a National Steering Committee comprising:

- Minister, MoALI
- Livestock Breeding and Veterinary Department (MoALI)
- General Administrative Department (Ministry of Home affairs)
- Myanmar Police Force Department (Ministry of Home Affairs)
- Planning Department (MoALI)

- Agriculture Department (MoALI)
- Agricultural Mechanization Department (MoALI)
- Agricultural Land Management and Statistics Department (MoALI)
- Fisheries Department (MoALI)
- Basic Education Department (Ministry of Education)
- Central Statistical Organization (Ministry of Planning and Finance)
- Planning Department (Ministry of Planning of Finance)

Advantages and limitations of the process

40. The NLBS was an opportunity that presented itself at a time when there was significant demand for livestock sector policy-making on a range of issues. As the data became available, it was readily utilized, most notably in terms of developing policy related to the cattle export trade to China.

41. It should be noted that the FAO project did not, according to the project agreements with LIFT and the government, have the mandate or funds to support such surveys. However, as it became clear that livestock populations needed to be updated to inform policy, and government commitment was apparent, LIFT agreed to reallocate project resources to support the effort.

42. While the 2010 Agricultural Census provided livestock data, Myanmar had developed rapidly in the intervening period. The livestock sector is very dynamic, with demand for livestock products increasing in the context of increasing populations, increasing economic activity, and increased urbanization the country and region. In rural areas, increased mechanisation of draught power, driven by the need for improved productivity and by increasing labour costs, also changes the demand for cattle and buffalo for draught power. Intensive pig and poultry production can be quickly expanded.

43. The NLBS was built in steps. While the FAO project funded the six-township survey and provided technical support to the eight-township survey, government funds were required for the national survey. It was not until mid-2017 that these funds were secured and planning and training for the national survey could begin. This process had some advantages in that the lead up surveys could pilot training and data collection and management processes, and train LBVD staff. This had the great advantage of involving LBVD staff who would ultimately be the main users of the data for policy purposes and responsible for communicating information to private sector stakeholders.

44. The NLBS followed similar procedures as would be expected in the standardized approaches for the Agricultural Census. The NLBS followed the general approach of selecting a sample of “small” holdings and a census of “large” holdings in recognition that randomly selected villages within a township may not truly represent the numbers of commercial chickens as they are often clustered.

45. The experience of the NLBS, in both process and content, can contribute to the planning of the 2020 census. Perhaps as importantly, the FAO project in collaboration with LBVD has demonstrated the utilization of the data for policy making, and in engaging with the private sector. In addition, the use of tablet technology for data entry and management has been a significant innovation.

Funding

46. The six-township survey was fully funded by the FAO project, including all costs of training and equipment supply and travel costs for LBVD staff and enumerators. The eight-township survey was funded by LBVD, with the FAO project providing technical support. The national survey data collection and data input into tablets was fully funded by government, while the FAO project provided technical support and funding of LBVD staff training and provision of tablets for data management. LBVD staff assigned to the FAO project processed the data.

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SECTION II HIGHLIGHTS BY LIVESTOCK TYPES

SECTION II HIGHLIGHTS BY LIVESTOCK TYPES

Overview

47. ***This section describes the highlights of the livestock, animal and poultry data from a national and Region State perspective.*** The definitions used are shown in Table 2. The term “animals” is used for dogs and horses because they are not destined for human consumption. Semi-broiler chickens are the male chickens of egg laying breeds that are usually raised intensively for meat production the same way as broilers are.

Description	Species and type
Large livestock	Draught cattle, dairy cattle, draught buffalo, dairy buffalo, mythun
Small livestock	Goats, sheep and pigs
Animals	Dogs and horses
Poultry	Native chickens, broiler (meat breed) chickens, semi-broiler chickens, egg layer chickens, ducks, turkeys, geese, quail

Table 2: Definitions used in the survey

48. ***Data on different breeds of livestock and poultry is not included in this report.*** There are several distinct breed types of livestock, especially local draught cattle, pigs, and goats that are adapted to the different farming systems and various agro-ecological zones (AEZs) found in Myanmar. Dairy cattle can also have different mixes of local and imported breed (e.g. Holstein-Friesian with local breeds). During the national survey, data was only collected on breeds of draught cattle: this will be reported in a separate thematic report.

49. ***This section seeks to highlight commonalities and contrasts across different agro-ecological zones (AEZs).*** Region State administrative areas only approximate AEZs. A more complete analysis will be provided in subsequent reports, however, a description of RS data as an approximation to AEZs is described in relevant sections where it appeared to be of value. The allocation of Region States to AEZs is shown in Table 3. For the purpose of this report, data for Bago (East/West) and Shan (North, South, East) are reported separately.

AEZ	Region State
Central Dry Zone	Mandalay, Sagaing and Magway
Upland	Kayin, Kayah, Kachin, Shan (East), Shan (South) and Shan (North)
Delta and Coastal	Ayeyarwady, Mon, Yangon and Tanintharyi, Rakhine, Bago (East)
Central lowland	Bago (West), Naypyitaw
Chin	Chin

Table 3: Allocation of Regions States to agro-ecological zones

50. ***This report does not include data on poultry parent and grandparent populations.*** A separate survey was conducted on poultry hatcheries for duck, broiler and layer sectors, and will be reported separately in thematic reports.

51. **The report does not describe the number or mix of livestock types in those holdings that held multiple livestock types.** This will be described in other reports.

52. **A total of 58 percent of holdings raised livestock, animals or poultry.** This varied from a high of 82 percent of holdings in Chin, to the lowest in Yangon of 32 percent.

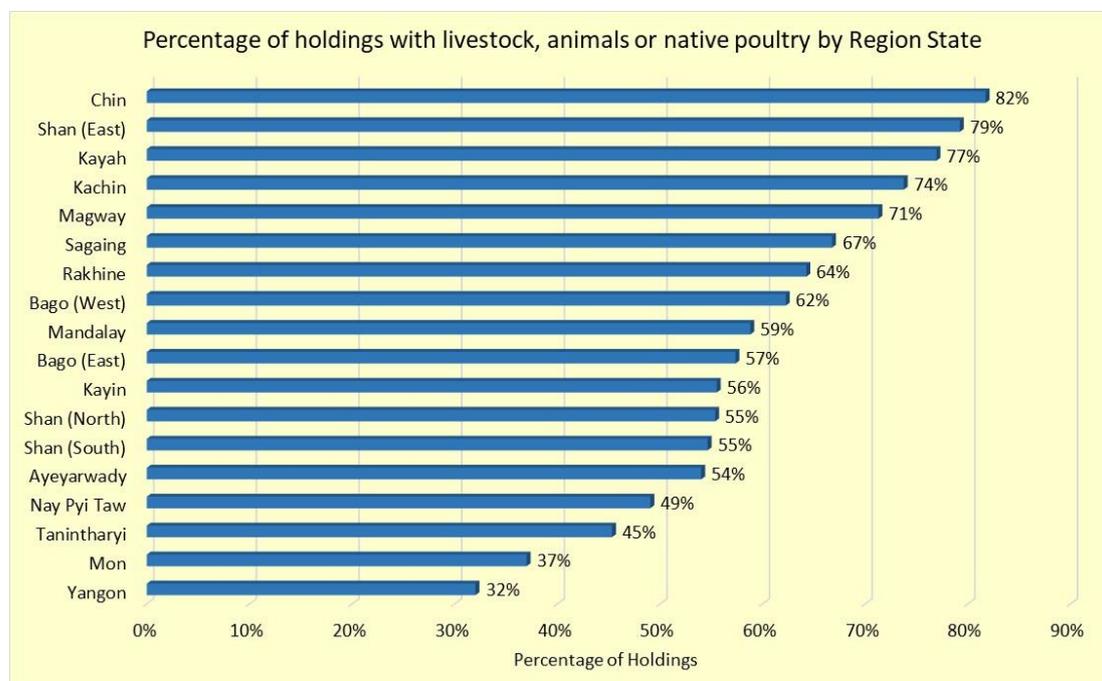


Figure 4: Percentage of holdings with livestock, animals or native poultry by Region State

53. **Nearly half of holdings raised one or more of native chickens, native ducks, turkeys, geese or Muscovy ducks.** Twenty-three percent raised cattle, twenty-two percent raised pigs. Four percent raised buffaloes and two percent raised goats. Less than one percent raised dairy cattle, horses, sheep, dairy buffaloes, or the commercial-type chickens – broiler chickens for meat, or layer chickens for eggs.

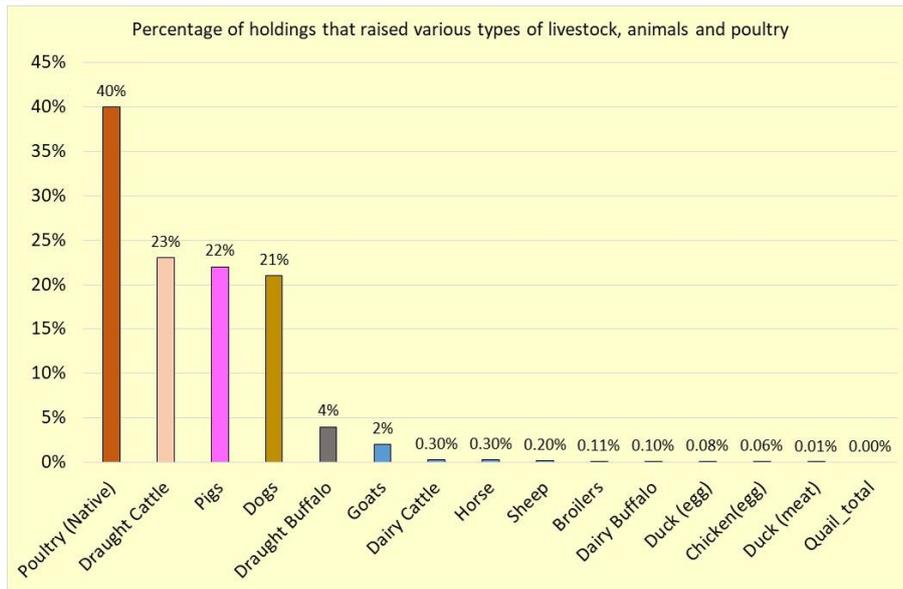


Figure 5: The percentage of holdings that raised various types of livestock, animals and poultry

54. **Amongst the major types of large and small, livestock, either draught cattle or pigs were the most numerous livestock types in any one Region State, on a per head basis.** Pigs were more numerous than cattle in seven Regions / States, while cattle were more numerous in the others.

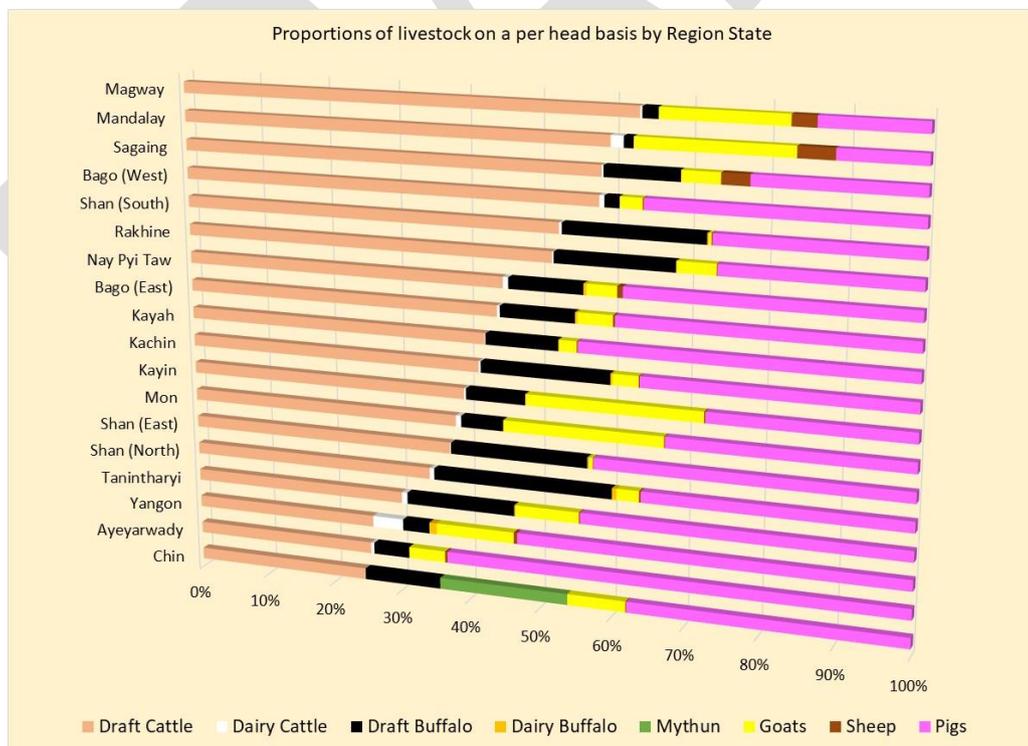


Figure 6: Proportions of livestock on a per head basis by Region State

55. Mandalay and Magway had broadly similar mixes of livestock. Draught cattle were the most numerous, goats and sheep were second and third, and pigs fourth. In Magway, buffalo were next, while in Mandalay, dairy cattle were fourth and buffalo fifth. Draught cattle were also the most numerous type in Sagaing, followed by pigs, with buffalo, goats and sheep following.

56. Draught cattle were most numerous in Shan (South), followed by pigs and then buffaloes. In Shan (East), pigs were most numerous, followed by cattle and buffalo. In Shan (North), cattle and pigs were similar, followed by buffaloes.

57. In Kachin, Kayin and Kayah, cattle were most numerous, followed by pigs. In Kayin, goats were the next numerous, followed by buffalo. In Kachin and Kayah, buffalo were third. In Chin, pigs were the most numerous, followed by mythun, cattle and buffalo. Pigs were more numerous than cattle in Ayeyarwady, Yangon, Tanintharyi, but were slightly behind cattle in Mon. In Rakhine, cattle were more numerous than pigs, followed by buffaloes. Cattle were the most numerous in both Naypyitaw and Bago (west), followed by pigs.

58. The percentage of holdings that raised particular livestock types adds to an understanding of the relative importance of livestock in different Regions / States. While on a national basis, 23 percent of holdings had draught cattle, this varied from a high of 42 percent in Magway to a low of 5 percent in Yangon. Dairy cattle ownership varied from a high of 1.5 percent in Mandalay to negligible in Chin. Draught buffalo ownership was highest (20 percent) in Shan (East), was high in other upland States such as Shan (North) (16 percent), Kachin (14 percent) and Shan (South) (10 percent), but down to 1 percent in Magway, Mandalay, Bago (West), Mon and Yangon. Goat ownership varied from a high of 9 percent in Kayin to negligible in Shan (East) and Shan (South). Pig ownership varied from a high of 57 percent in Chin, to 8% in Mon.

Region/State	Draught Cattle	Pigs	Draught Buffalo	Dairy Cattle	Goats	Sheep
Union of Myanmar	23%	22%	4%	0.30%	2%	0.20%
Magway	42%	19%	1%	0.20%	2%	0.30%
Sagaing	39%	25%	6%	0.20%	1%	0.30%
Mandalay	37%	13%	1%	1.50%	3%	0.50%
Kachin	28%	43%	14%	0.30%	2%	0.10%
Bago (West)	27%	22%	1%	0.20%	0%	0.10%
Shan (East)	26%	52%	20%	0.10%	0%	0.10%
Bago (East)	22%	27%	5%	0.20%	1%	0.20%
Rakhine	21%	21%	4%	0.10%	2%	0.10%
Kayah	20%	48%	6%	0.10%	1%	0.20%
Kayin	20%	28%	3%	0.20%	9%	0.10%
Nay Pyi Taw	18%	25%	5%	0.20%	0%	0.10%
Shan (South)	16%	17%	10%	0.10%	0%	0.10%
Shan (North)	14%	23%	16%	0.30%	1%	0.10%
Chin	10%	57%	7%	0.00%	8%	0.10%
Mon	10%	8%	1%	0.10%	3%	0.00%
Ayeyarwady	9%	29%	1%	0.10%	1%	0.10%
Tanintharyi	6%	12%	1%	0.20%	1%	0.00%
Yangon	5%	9%	0%	0.30%	1%	0.10%

Table 4: Percentage of holdings in each Region State that had the main livestock types (excluding mythun in Chin)



Figure 7: Livestock play an important social and economic role in farmer livelihoods

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Draught Cattle

59. **About 2.2 million holdings raised an average of over 4 head of draught cattle, with the total population estimated at 9.6 million head.** These holdings raised various combinations of breeding females, working and breeding males and young animals. A little over a third (36 percent) of these cattle were males aged three years and over, slightly less than a third (29 percent) were breeding age females and the remaining 34 percent were young female or male cattle.

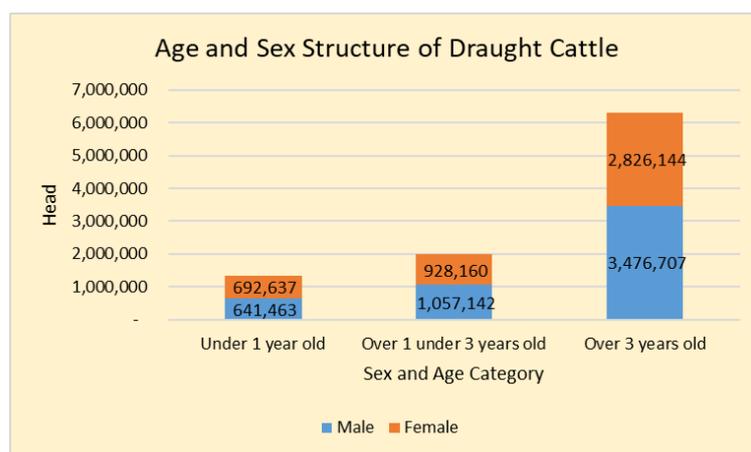


Figure 8: Age and sex structure of draught cattle population

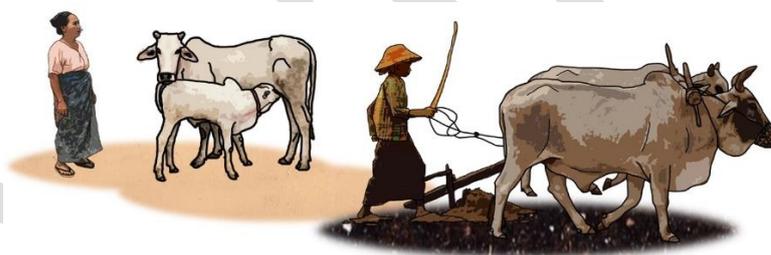


Figure 9: Farmers who raise cattle in Myanmar had an average of four head per holding

60. **The Central Dry Zone is the major cattle area of Myanmar.** The three Regions of Mandalay, Sagaing and Magway had over half (52 percent) of the national cattle population. Each has a high percentage of holdings with draught cattle: in Mandalay 37 percent, in Sagaing 39 percent and Magway 42 percent. Average cattle per holding was about 4.1, 4.4 and 3.9 head in Mandalay, Sagaing and Magway respectively, which is similar to the national average.

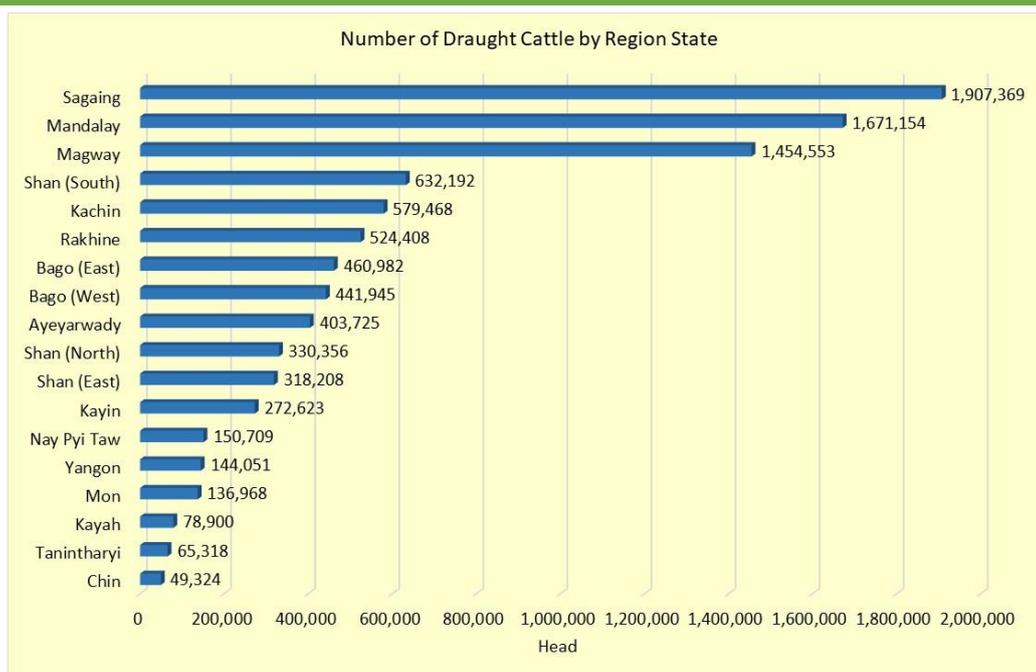


Figure 10: Number of draught cattle by Region State

61. ***Draught cattle were relatively numerous in Upland areas and Rakhine.*** All the mainly upland SR had higher average cattle numbers per holding than holdings in the CDZ regions – Kayin (4.9 head), Kayah (5.3 head), Kachin (5.3 head), Shan East (6.3 head), Shan South and Shan North (both 5.6 head). The percentage of holdings with cattle was lower than in the CDZ and varied from a high of 28 percent in Kachin, through Shan East (26 percent), Kayin (20 percent), Kayah (20 percent) Shan South (16 percent) and Shan North (14 percent). In Rakhine, 21 percent of holdings had cattle with an average of 5.2 head per holding.

62. ***Draught cattle were relatively less numerous in delta and coastal areas.*** Relatively low proportions of holdings had cattle in Ayeyarwady (9 percent), Mon (10 percent), Yangon (9 percent) and Tanintharyi (6 percent). Average herd size was also lower in these areas than in the CDZ at 3.1, 3.9, 3.2 and 3.0 head respectively.

63. ***Cattle raising was relatively less common in Chin state but with a high average head per holding.*** Only 10 percent of holdings had cattle, but at a high average of 5.2 head per holding.

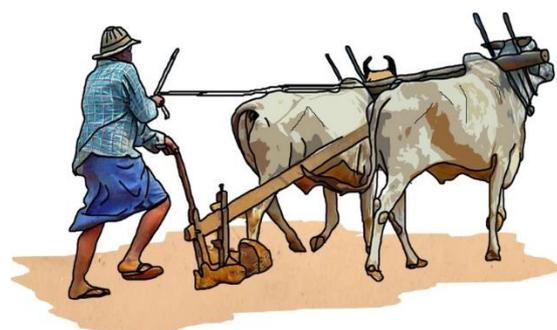


Figure 11: Farmers use cattle for ploughing in many areas of Myanmar

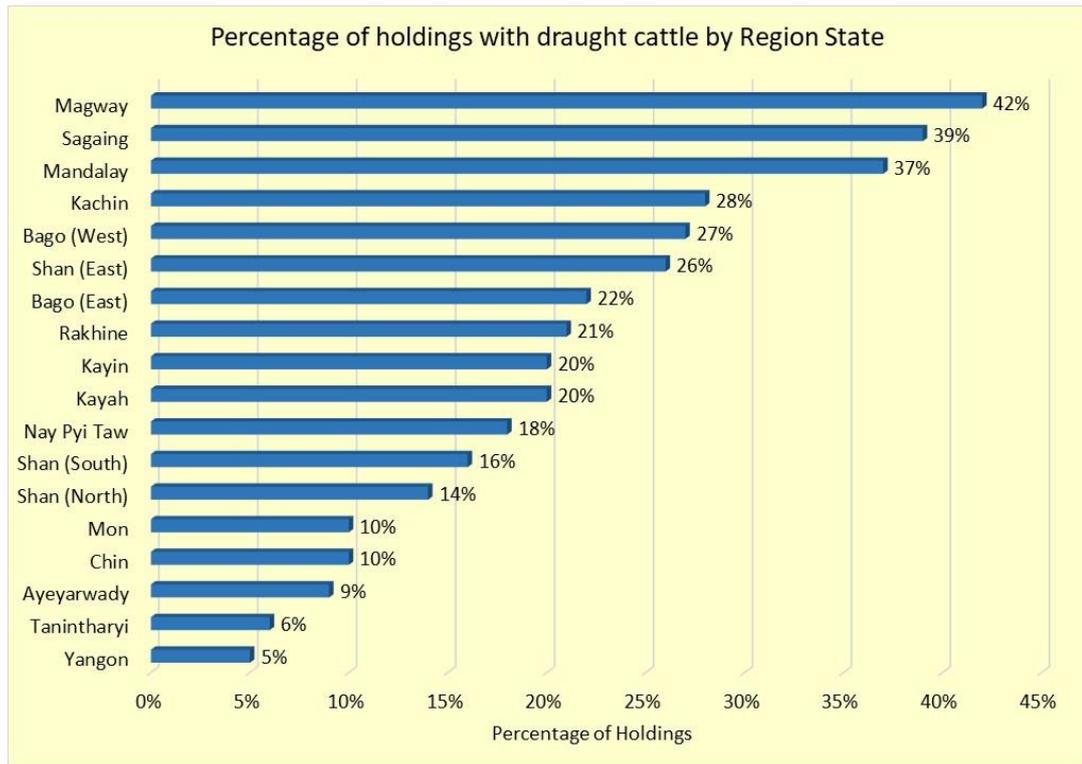


Figure 12: Percentage of holdings with draught cattle by Region State

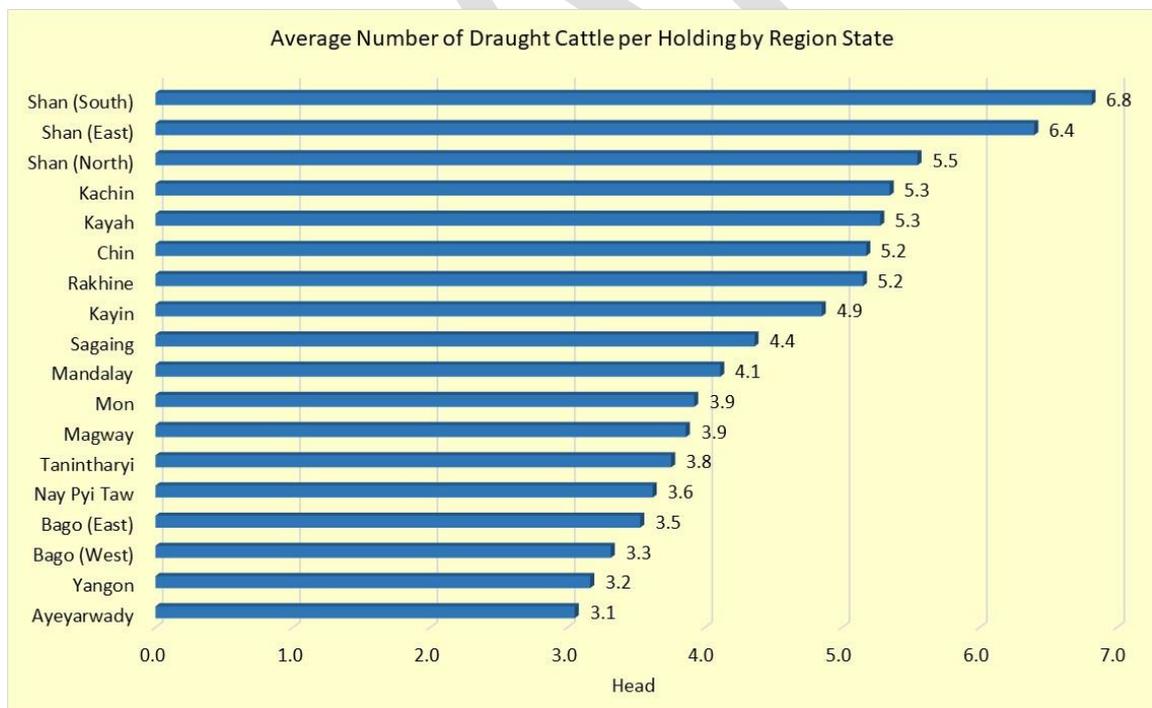


Figure 13: Average number of draught cattle per holding by Region State

Dairy Cattle

64. **About 32,000 holdings raised dairy cattle with an average of 4 head per holding, making a national total of about 129,000.** As would be expected, a majority of these cattle - about 61,000 - were breeding age females capable of producing milk. The percentage of holdings with dairy cattle was very small – 4 in 10,000 or 0.4 percent. The highest proportion was in Mandalay, at 1.8 percent of holdings.

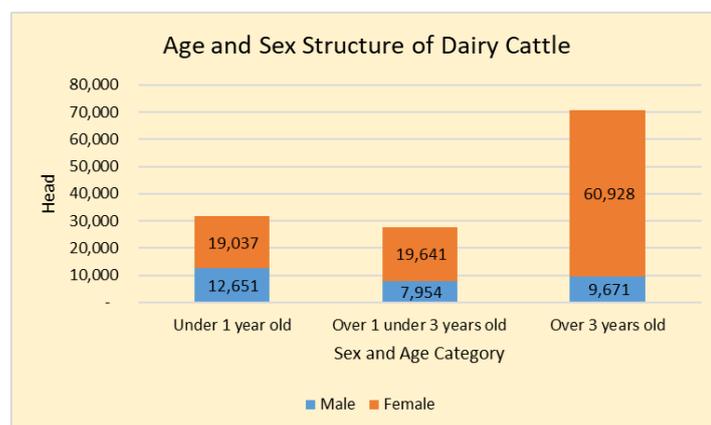


Figure 14: Age and sex structure of dairy cattle population

65. **Dairy cattle were concentrated in Mandalay and Yangon Regions.** Between them, these two regions accounted for the majority of dairy cattle - about 55 percent of the dairy cattle in the national herd – and 60 percent of dairy cattle holdings. Mandalay had the most dairy cattle, comprising 17,000 holdings (1.5 percent of holdings) which raised 48,000 dairy cattle with an average of three head per holding. In Yangon Region, a far smaller number of 2,200 holdings raised 24,000 dairy cattle with an average of 11 head per holding which was much higher than Mandalay. In other words, Yangon had fewer holdings but they were larger on average.

66. **Other Region States all had much lower dairy cattle populations.** Less than one percent of holdings had dairy cattle in all the other Regions / States. Chin and Kayah had the lowest percentage of holdings with dairy cattle.



Figure 15: The majority of dairy cows are females over 3 years old

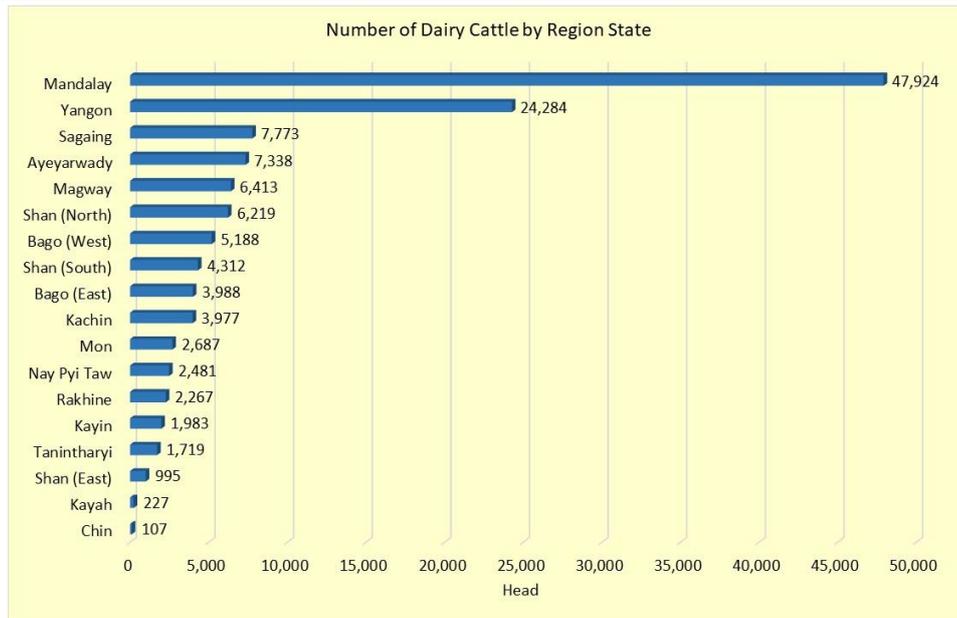


Figure 16: Number of dairy cattle by Region State

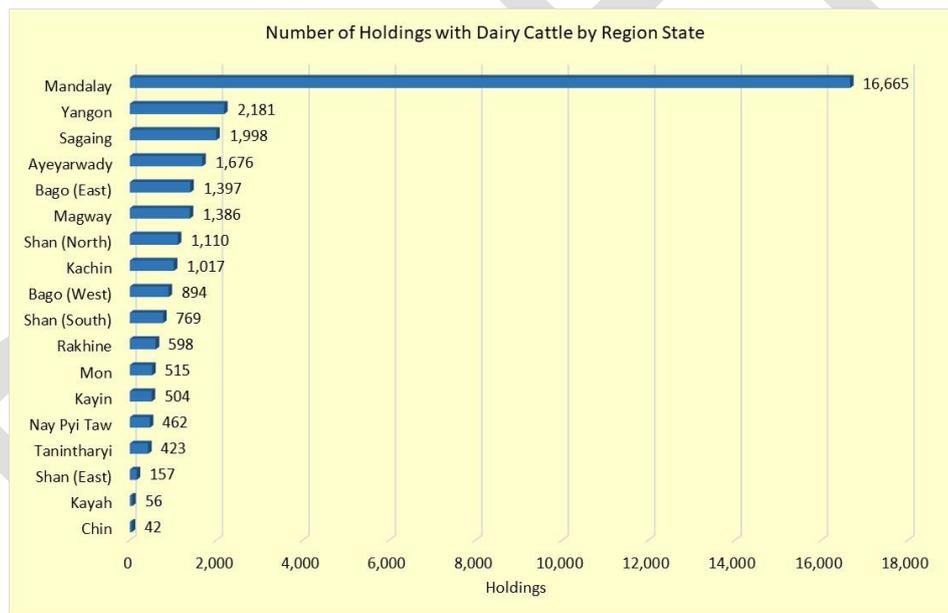


Figure 17: Number of holdings with dairy cattle by Region State

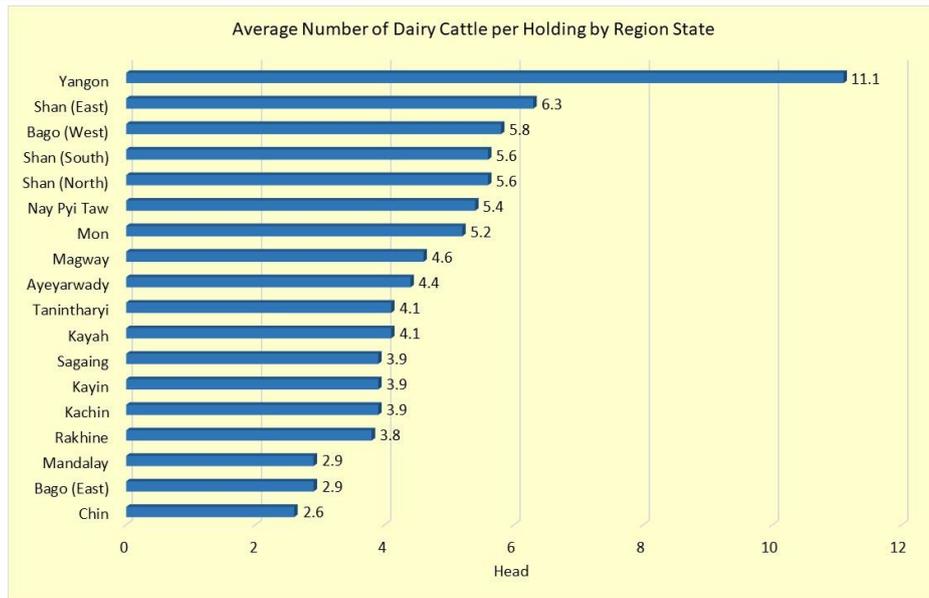


Figure 18: Average number of dairy cattle per holding by Region State



Figure 19: Dairy cattle are mostly found in Mandalay and Yangon Regions

Draught buffaloes

67. **An estimated 420,000 holdings raised an average of over 4 head per holding making a total of about 1.9 million head.** About 40 percent of these buffaloes were females of three years and older, 23 percent were males of the same age, 23 percent were between one and three years old, and the remaining 15 percent were under one year old.

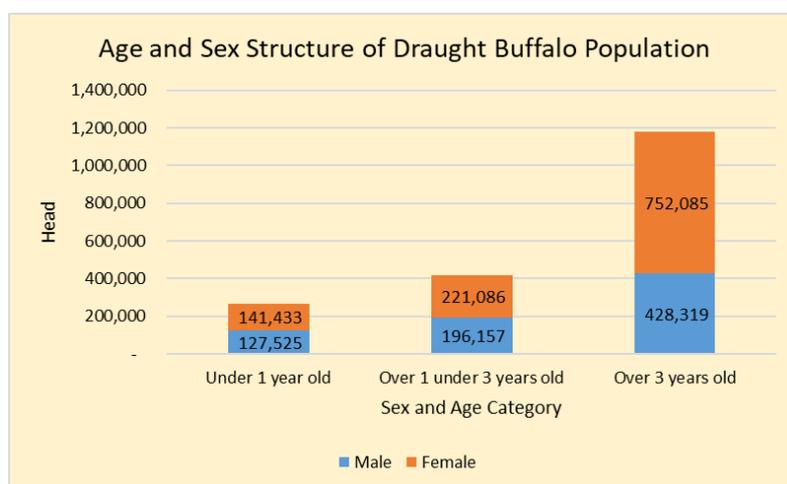


Figure 20: Age and sex structure of buffalo population

68. **Sagaing Region had the highest number of buffaloes.** Only six percent of holdings had buffaloes, with an average of nearly five head per holding. The other CDZ regions had very low numbers of buffalo, and low percentages of holdings with buffalo (one percent in both Mandalay and Magway).

69. **Buffalo raising was common in upland Region States.** Only four Regions / States had 10 percent or over of holdings with buffaloes, and these were all in upland areas - Shan East (20 percent), Shan North (16 percent), Kachin (14 percent), and Shan South (10 percent).

70. **Buffalo raising in delta and coastal areas was variable but generally low.** The highest was in Rakhine, where only four percent of holdings raised buffalo but at a much higher average of eight head per holding. In Tanintharyi, only one percent of holdings had buffalo but at a high average of 10 head. Ayeyarwady, Yangon and Mon all had low numbers of buffaloes.

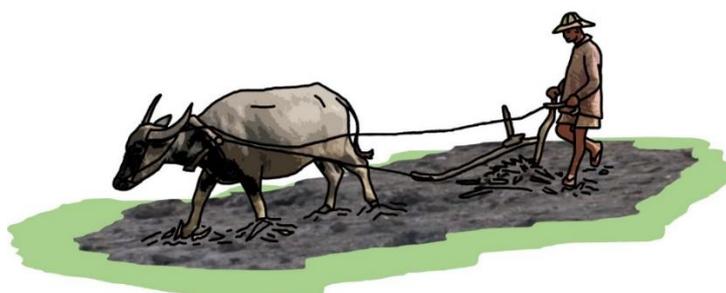


Figure 21: Both female and male buffaloes can be used for ploughing, often as a single animal

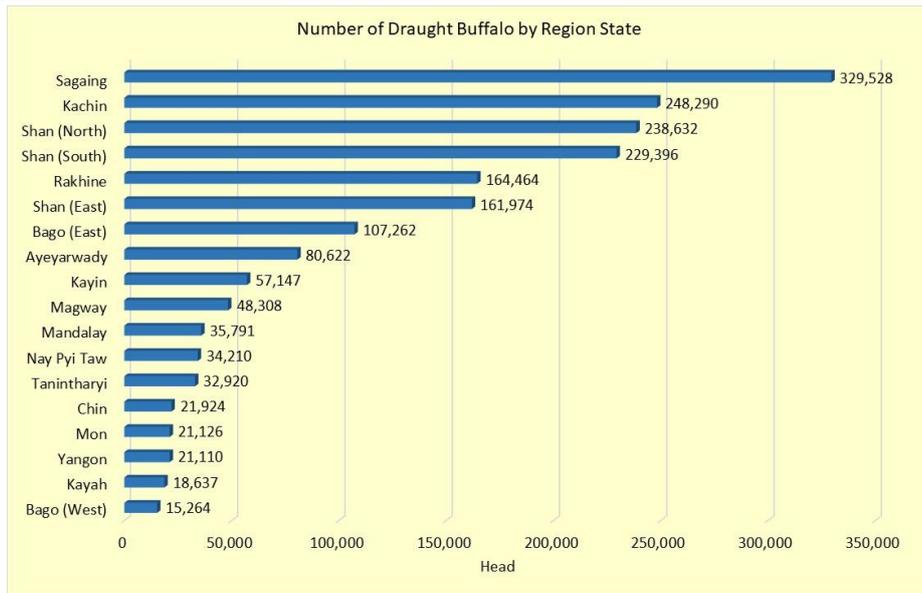


Figure 22: Number of draught buffalo by Region State

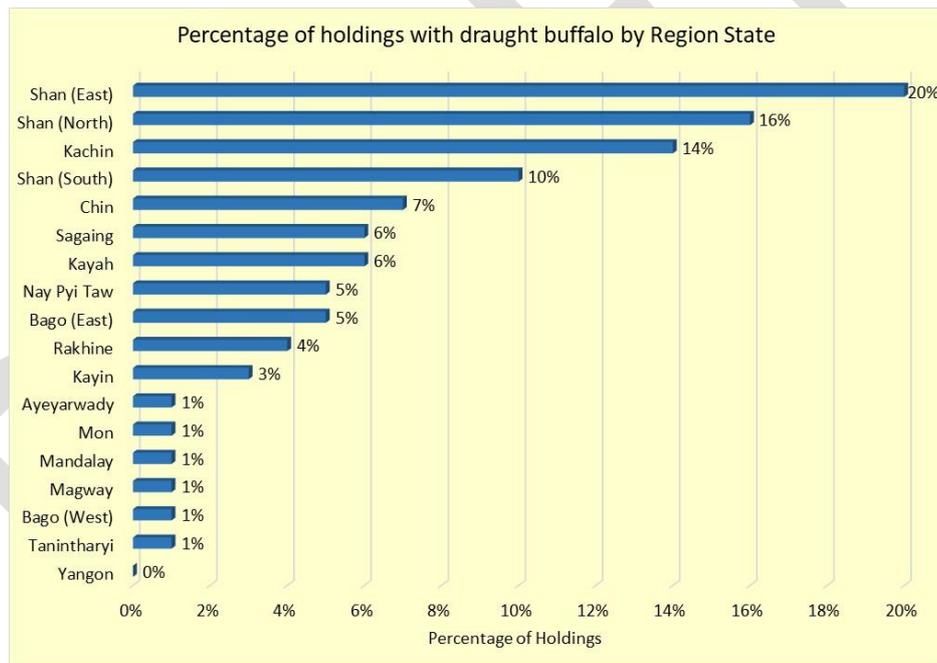


Figure 23: Percentage of holdings with buffaloes by Region State

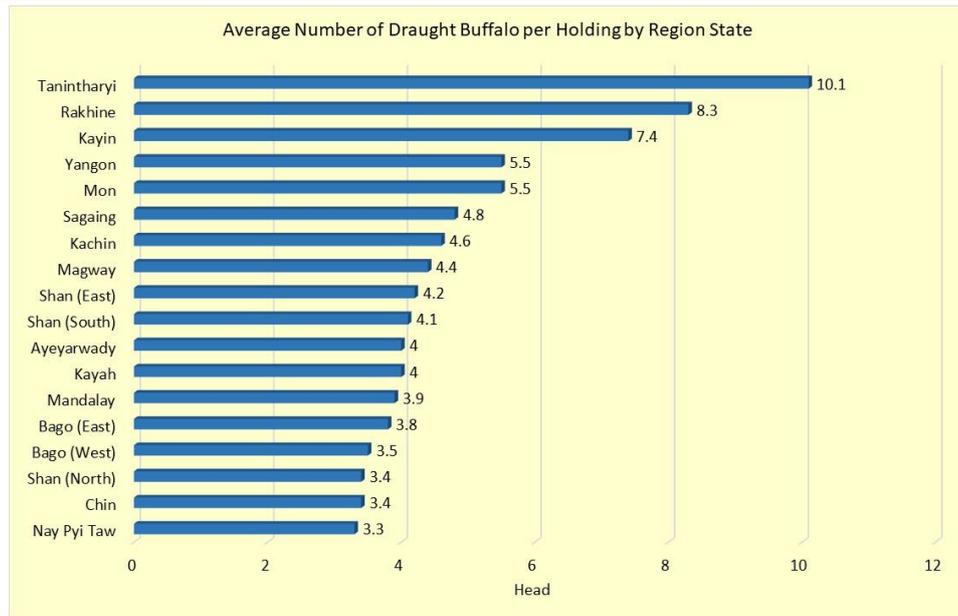


Figure 24: Average number of draught buffalo per holding by Region State



Figure 25: Buffaloes are mostly found in upland areas

Dairy buffaloes and Mythun

71. **A total of about 7,000 holdings raised dairy buffalo with an average of five head per holding, making a total of about 34,000.** This included over 14,000 breeding/milking-age females, which make up 42 percent of the total population.

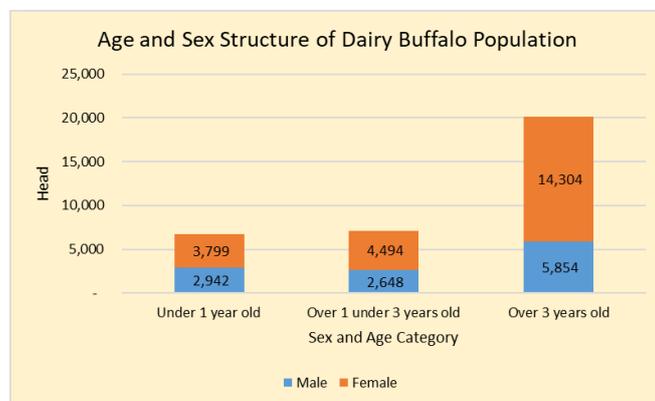


Figure 26: Age and sex structure of the dairy buffalo population

72. **Shan (North) and Yangon had the highest dairy buffalo populations.** Between them they had about a third of the national herd while dairy buffalo were spread across other Region States with no discernable pattern related to AEZ. Yangon had the highest average number of head per holding, at 14 head.

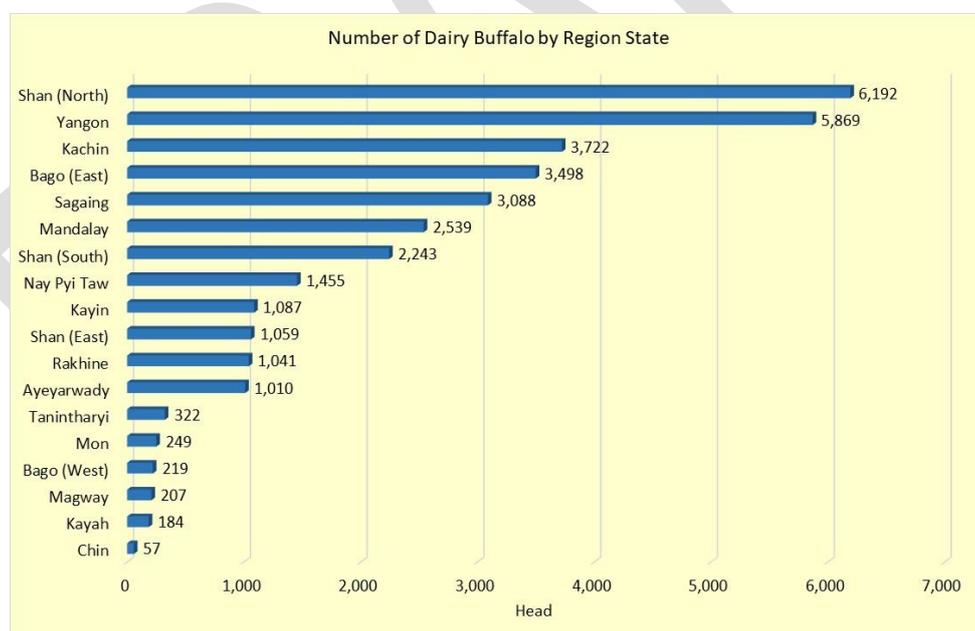


Figure 27: Number of dairy buffalo by Region State

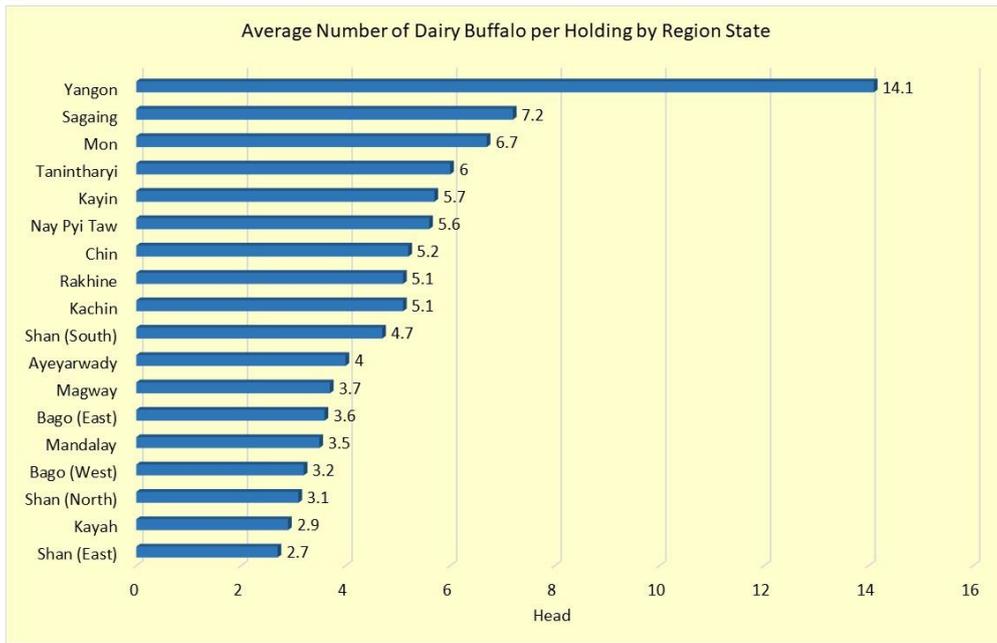


Figure 28: Average number of dairy buffalo by Region State

73. **A total of about 10,460 holdings in Chin, equal to 12 percent of all holdings, raised 35,768 mythun with an average of 3.4 head per holding.** An additional 14 large holdings in Shan (East) raised 605 head. This made a total of 10,474 holdings with 36,763 head.



Figure 29: The mythun population is concentrated in Chin State

Horses

74. **A total of about 29,000 holdings raised 63,000 horses with an average of a little over two head per holding.** Male and female horses over 3 years old were about equal in number – about 35 percent of the population.

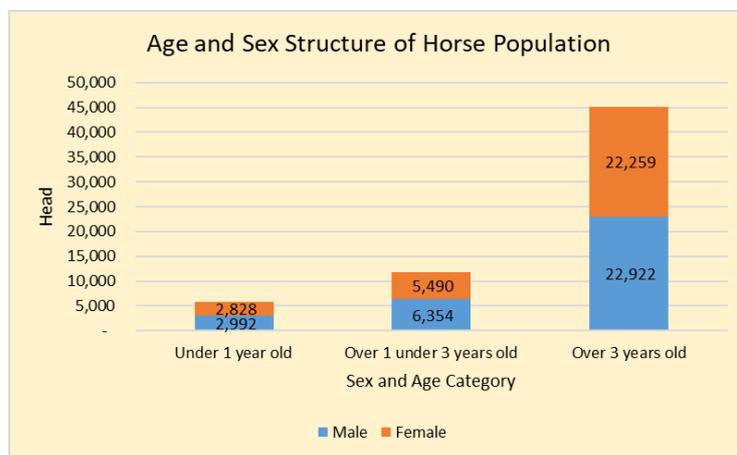


Figure 30: Age and sex structure of the horse population

75. **Shan (North) Mandalay and Chin had the highest horse populations.** About 23 percent of the national population was in Shan (North), followed by Mandalay with about 16 percent of the population. Chin had the highest proportion of holdings with horses, at 2.5 percent, far higher than the national figure of 0.4 percent.

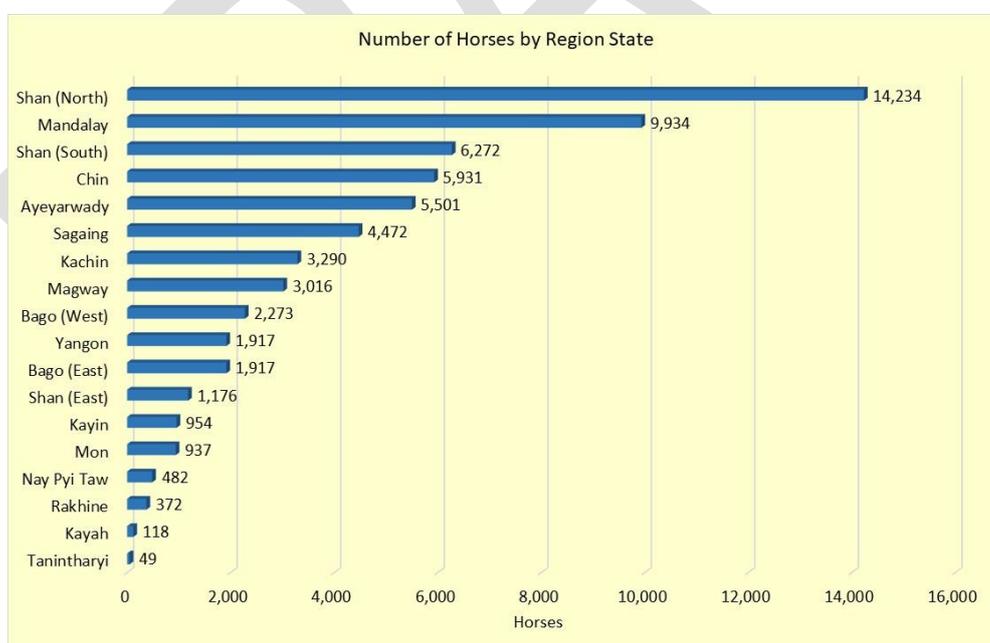


Figure 31: Number of horses by Region State



Figure 32: Number of holdings with horses by Region State

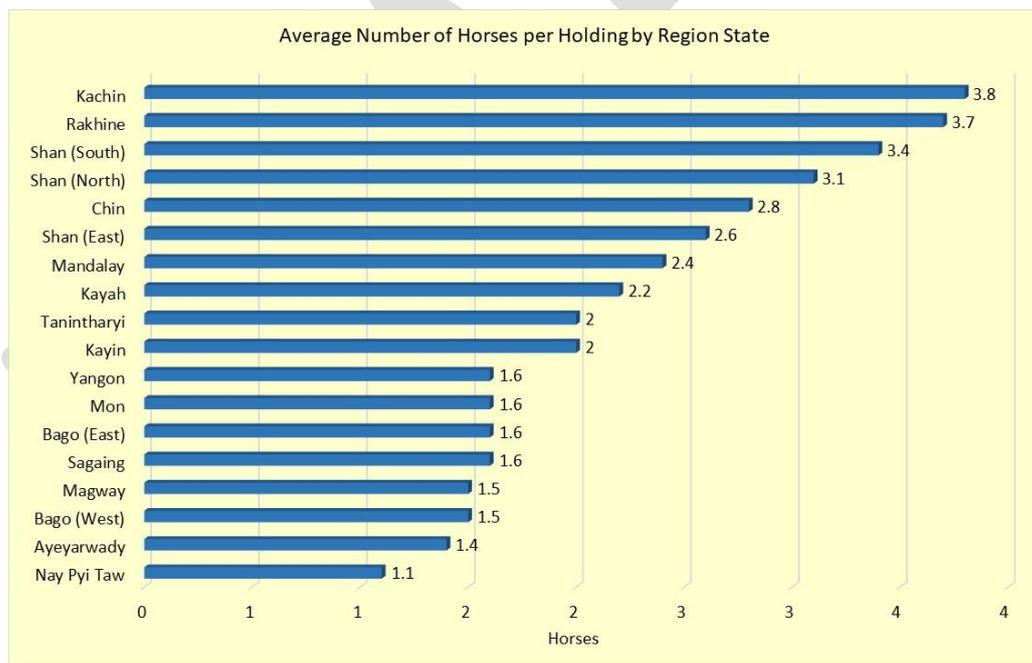


Figure 33: Average number of horses per holding by Region State

Goats

76. **About 150 000 holdings raised goats with an average of about 12 goats per holding, making a national total of about 1.8 million head.** Females aged over six months made up 44 percent of the national flock, while males of the same age made up 19 percent. Goats between two and six months were 22 percent of the total population while kids under two months were 15 percent.

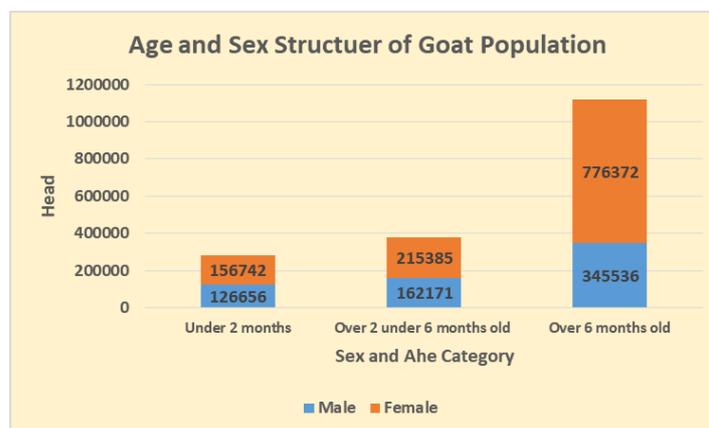


Figure 34: Age and sex structure of the goat population

77. **Goats were concentrated in the Central Dry Zone.** The three Regions of Mandalay, Sagaing and Magway had nearly two-thirds (63 percent) of the national goat population. Within the CDZ, Mandalay had the highest goat population, the highest percentage of holdings with goats (3 percent) and the second highest average goats per holding (21 head). Sagaing had the least number of goats amongst the three regions, the lowest percentage of holdings with goats (one percent) and also the lowest average number of goats per holding (17). Magway had the second highest goat population, with two percent of holdings with goats at the average of 26 goats per holding.

78. **Goats were relatively numerous in Kayin**, where nine percent of holdings had goats with an average seven head per holding. All other Region States had relatively minor goat populations. In Chin, eight percent of holdings had goats, but only two head per holding on average. All other Region States had relatively small goat populations



Figure 35: Goats are mostly found in the Central Dry Zone and Kayin

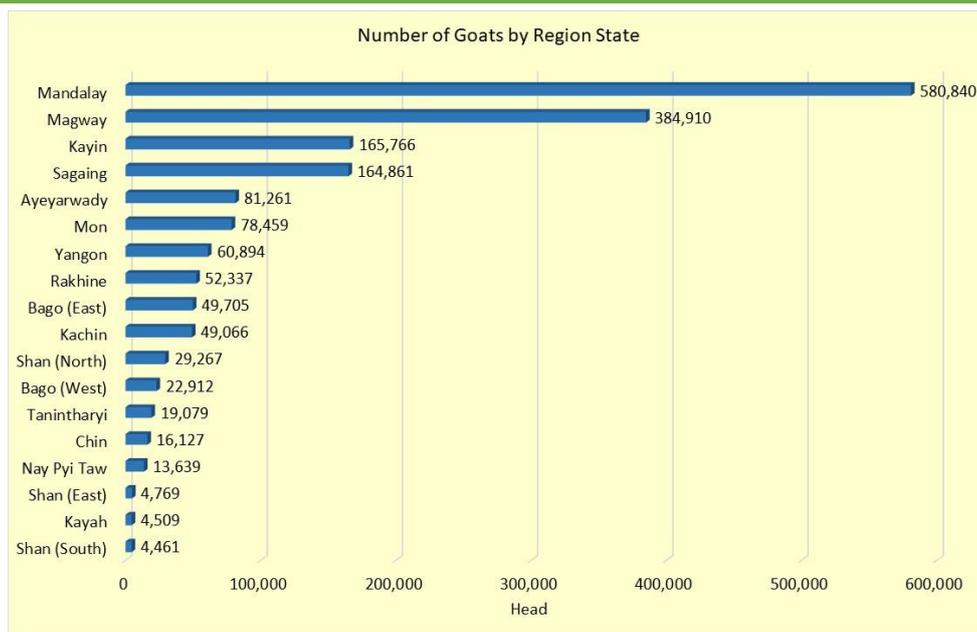


Figure 36: Number of goats by Region State

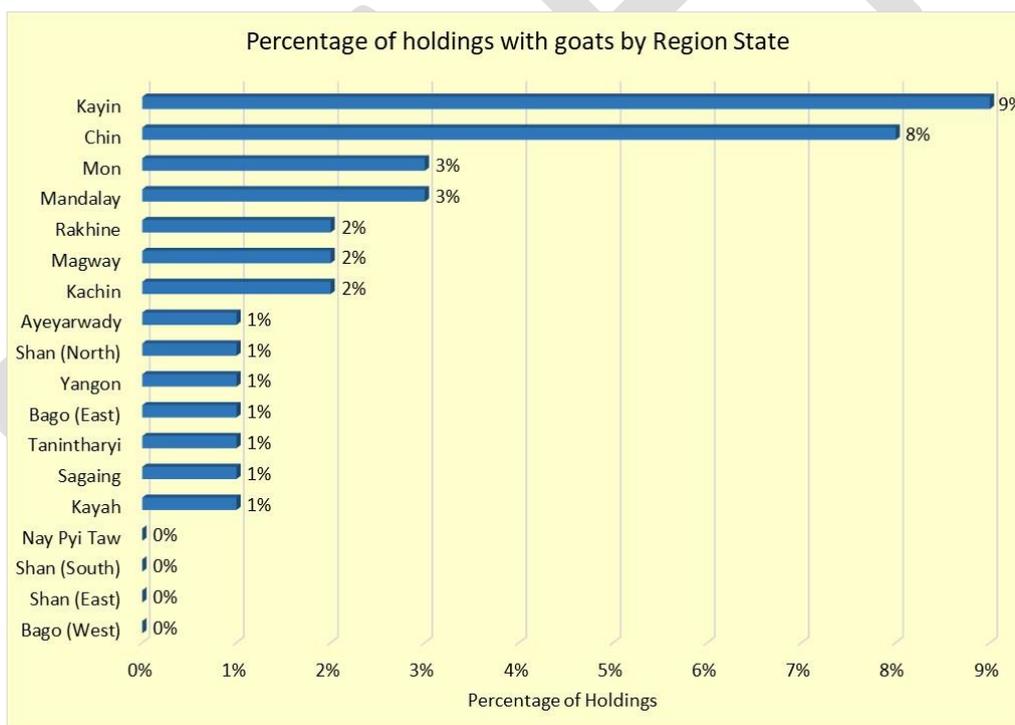


Figure 37: Percentage of holdings with goats by Region State

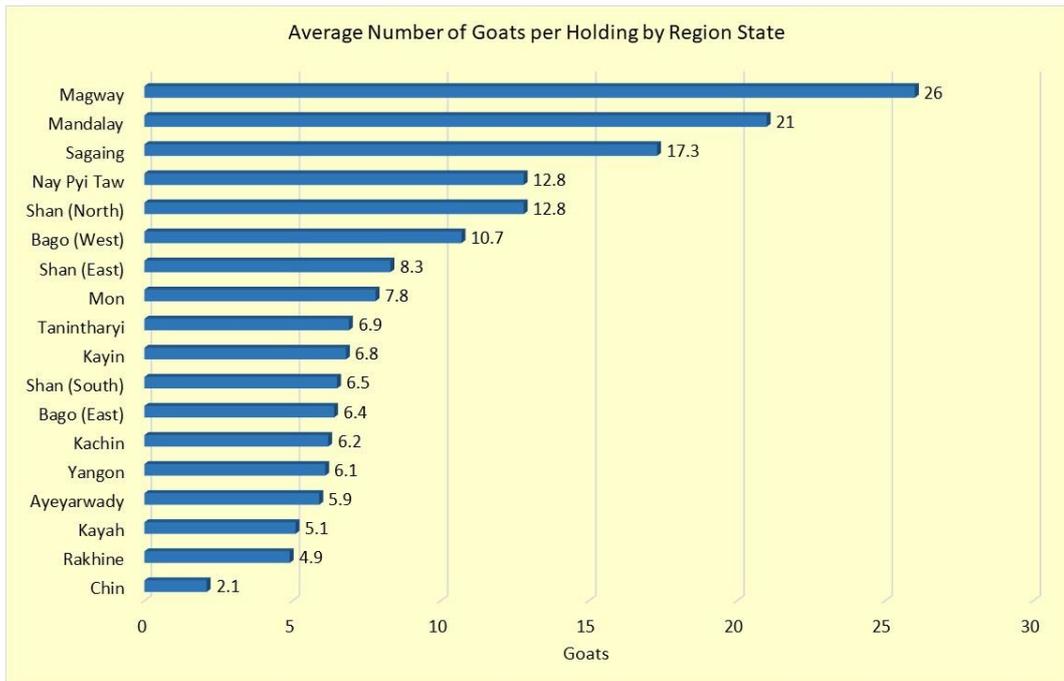


Figure 38: Average number of goats per holding by Region State

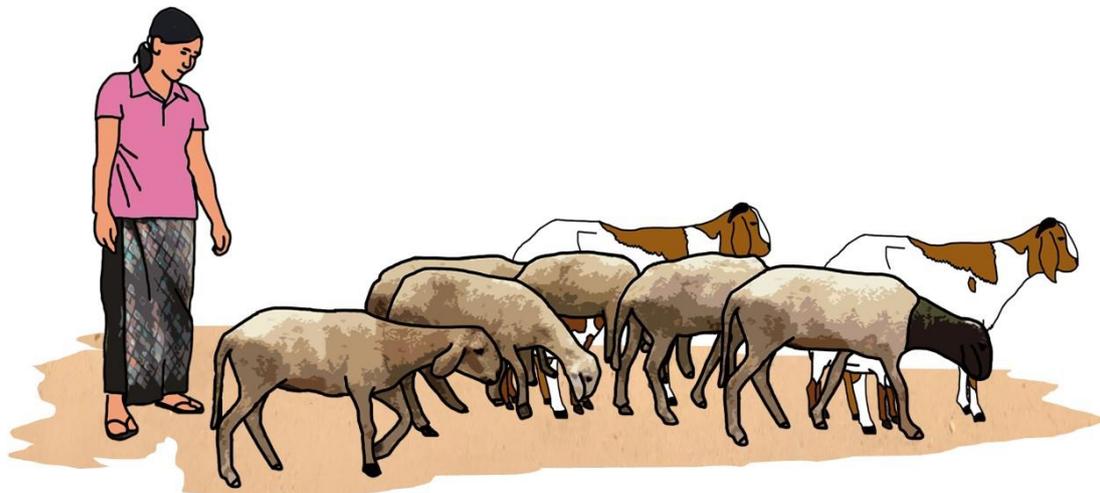


Figure 39: Goats are often managed in mixed flocks with sheep

Sheep

79. **About 19 000 holdings raised sheep with an average of 19 sheep per holding, making a national total of about 350,00 head.** Only 0.2 percent of holdings (two in a thousand) had sheep. Females over six months old made up 53 percent of the national flock, males the same age only 10 percent. Males and females from two to six months made up 21 percent and lambs under two months old, only 17 percent.

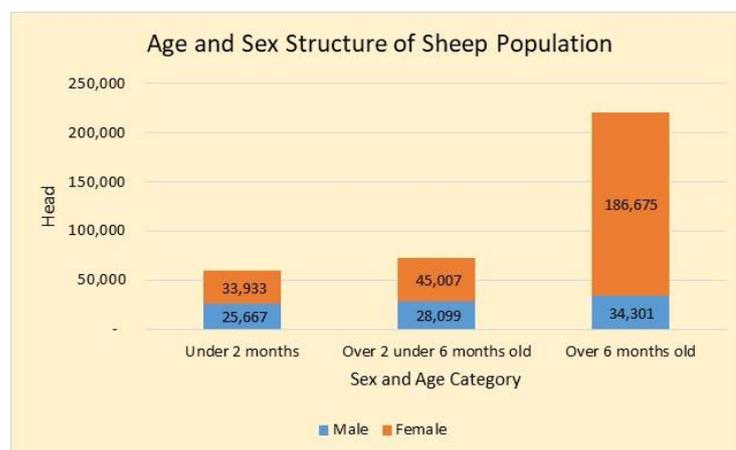


Figure 40: Age and sex structure of the sheep population

80. **Sheep were highly concentrated in the Central Dry Zone.** The three Regions of Mandalay, Sagaing and Magway had 93 percent of the national sheep population. Within this area, Mandalay had the highest number of sheep, followed closely by Sagaing. Magway had significantly less sheep.

81. **All others areas had very small sheep populations.** Ayeyarwady was the next highest, and the lowest was in Chin with about 200 sheep.

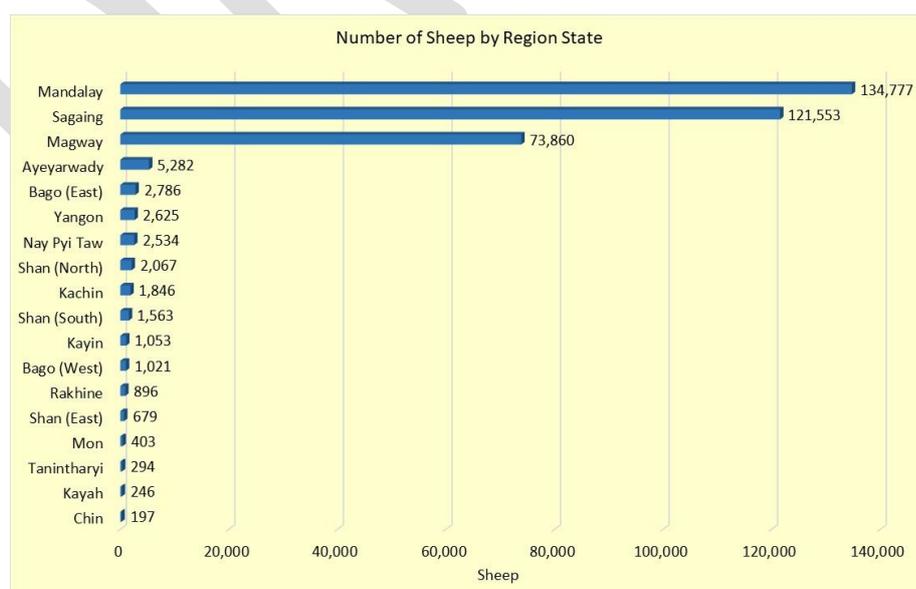


Figure 41: Number of sheep by Region State

82. **Even in the dry zone the percentage of holdings with sheep was very low.** In Mandalay, about 5,400 holdings had sheep, equal to 0.6% of all holdings (or 6 in a thousand). In Sagaing and Magway this dropped to 0.4 percent and 0.3 percent respectively.



Figure 42: Number of holdings with sheep by Region State

83. The average sheep holding sizes were high in the dry zone. In Mandalay, the average was 34 head, in Magway 29 head and in Sagaing 25 head. All other areas were low.



Figure 43: Average number of sheep per holding by Region State

Pigs

84. **Over two million holdings raised 5.8 million pigs with an average of about nearly three pigs per holding.** Nationally, 27 percent of holdings raised pigs. Females over six months old made up 26 percent of the population, and males the same age made up 21 percent. Pigs between two and six months of age accounted for 31 percent and pigs less than two months old for 21 percent.

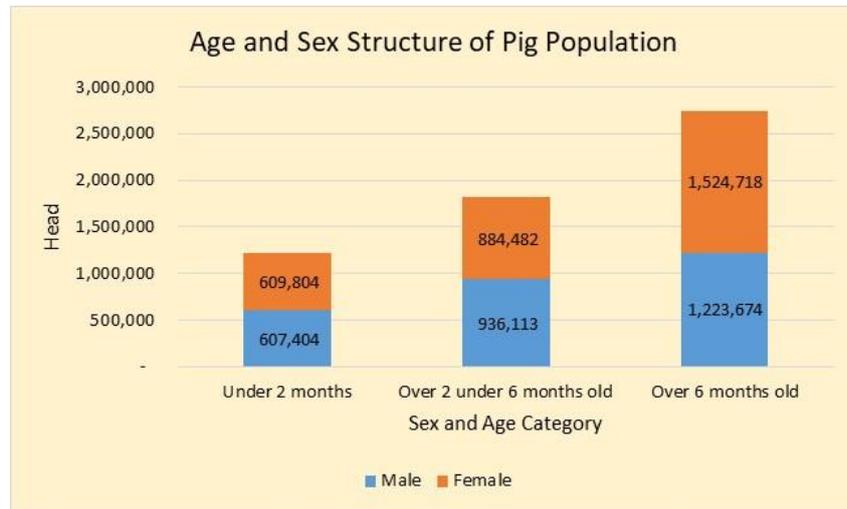


Figure 44: Age and sex structure of the pig population



Figure 45: Breeding sows supply the piglets for fattening

85. **Pigs were most numerous in Ayeyarwady.** This Region had the highest pig population on Region State basis; about 17 percent of the national population was in Ayeyarwady. About 29 percent of holdings (about 420,000) had pigs, with an average of 2.3 head per holding.

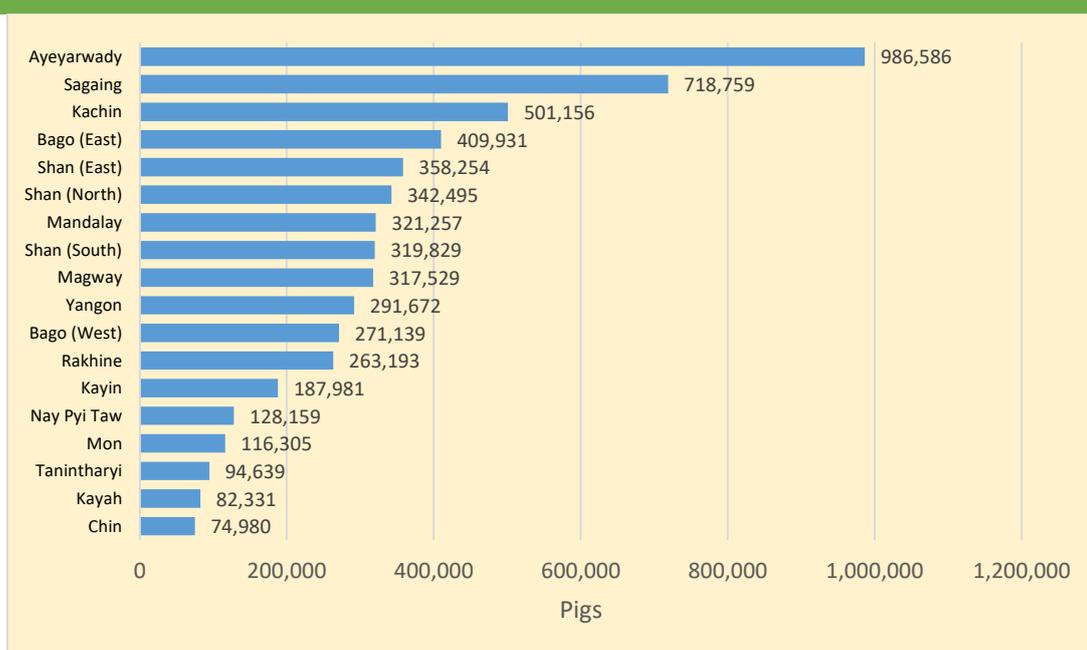


Figure 46: Number of pigs by region state

86. Pig raising was very common in upland areas. The four Region States with the highest percentage of holdings with pigs were in upland areas. In Chin, Shan (East), Kayah, and Kachin, respectively 57 percent, 52 percent, 48 percent, and 43 percent of holdings had pigs, with the average number of had per holding being 1.4, 3.6, 2.3, and 3.0 head respectively.



Figure 47: Percentage of holdings with pigs by Region State

87. **Pig raising was common but variable in the dry zone regions.** Sagaing had the second largest pig population and 25 percent of holdings had pigs with an average of 2.5 pigs per holding. Magway and Mandalay had lower pig numbers, with 19 percent and 13 percent of holdings respectively, with an average of 1.8 and 2.2 head per holding.

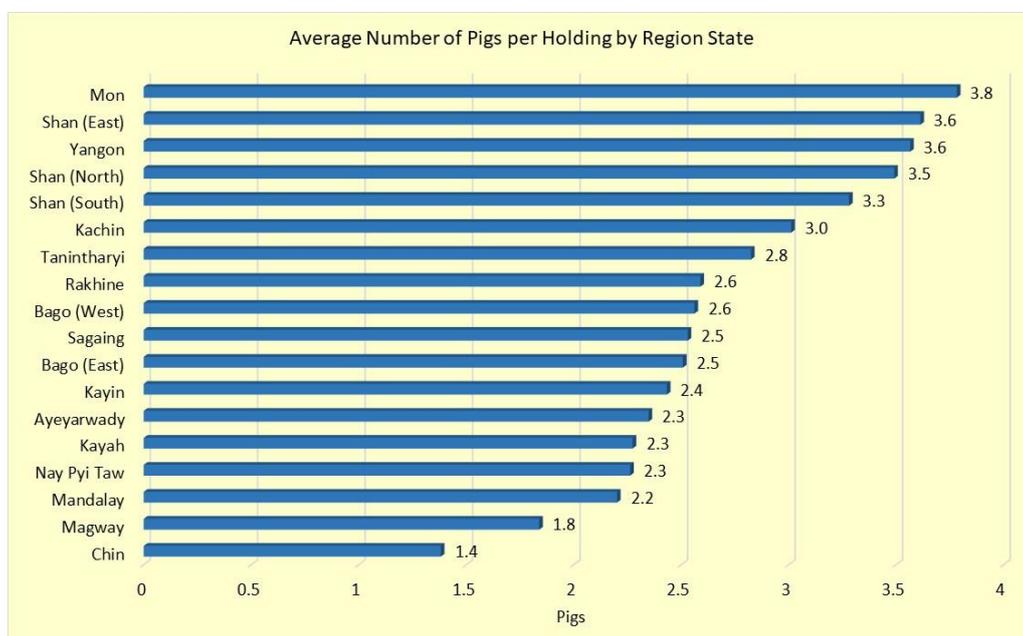


Figure 48: Average number of pigs per holding by region state

88. **Pig raising in coastal areas was relatively less common.** Yangon, Tanintharyi and Mon all had relatively low percentages of holdings with pigs, at 16 percent, 16 percent and 11 percent respectively. But Yangon and Mon both had a relatively high average number of pigs per holding, at 3.6 and 3.8 head, with Tanintharyi lower at 2.8 head per holding. Pig raising was more common in Rakhine than in other coastal areas. In Rakhine, 22 percent of holdings had pigs with an average of 2.6 pigs per holding.



Figure 49: A small proportion of holdings raised boars for breeding

Native Poultry – Chickens, Native Ducks, Geese and Turkeys

89. **Four million holdings (48 percent of all holdings) raised 49 million native poultry with an average of 11 per holding.** By far the majority (90 percent, 45 million) of these poultry were native chickens. The remaining five million birds were mostly native ducks (5 percent of the total), Muscovy ducks (1.8 percent) geese (0.4 percent) or turkeys (0.1 percent).

90. **The native chicken data included only adult hens and adult cocks, over 6 months old.** Data on chicks was not collected. Amongst the 49 million native chickens, the ratio of adult hens to cocks was 4.2 to 1, with hens making up 81 percent of the population, and cocks the remaining 19 percent.

91. **Ayeyarwady had the highest native chicken population.** This region had over seven million birds or about 16 percent of the national population. Sagaing was second with about five million birds, or

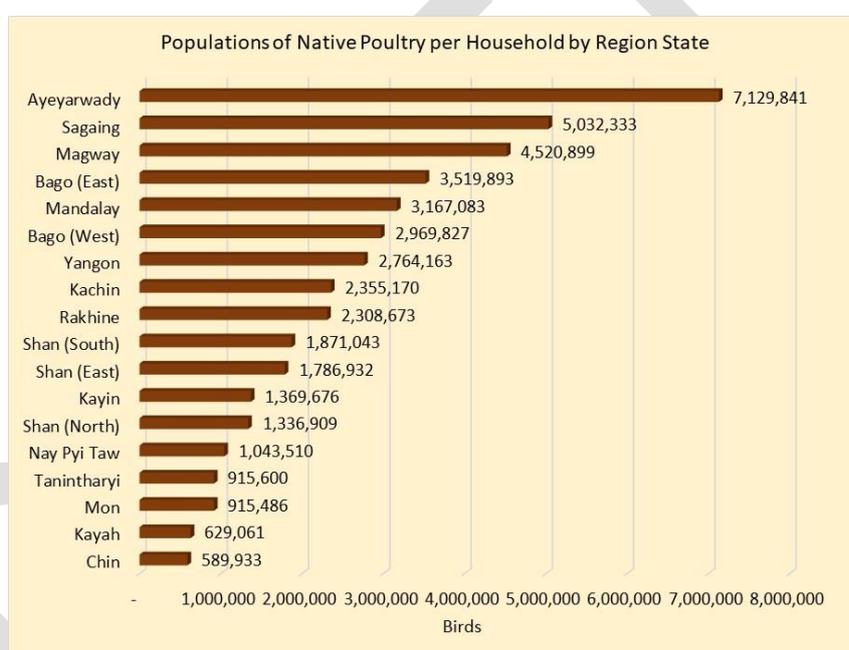


Figure 50: Number of native chickens by region state

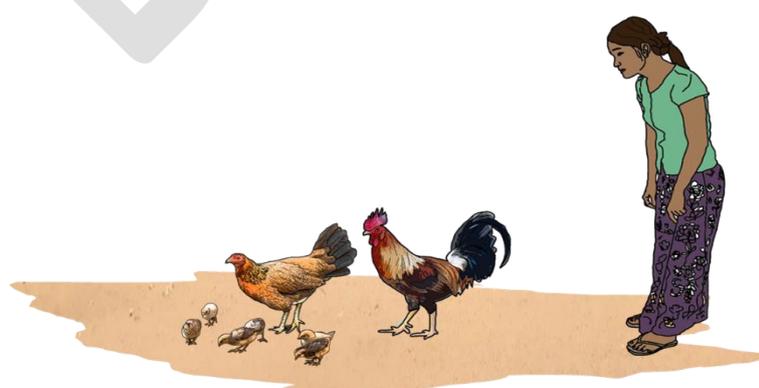


Figure 51: Four million holdings raised native chickens

92. **Kayin had the highest population of turkeys.** Yangon had the second highest population and Chin the lowest.

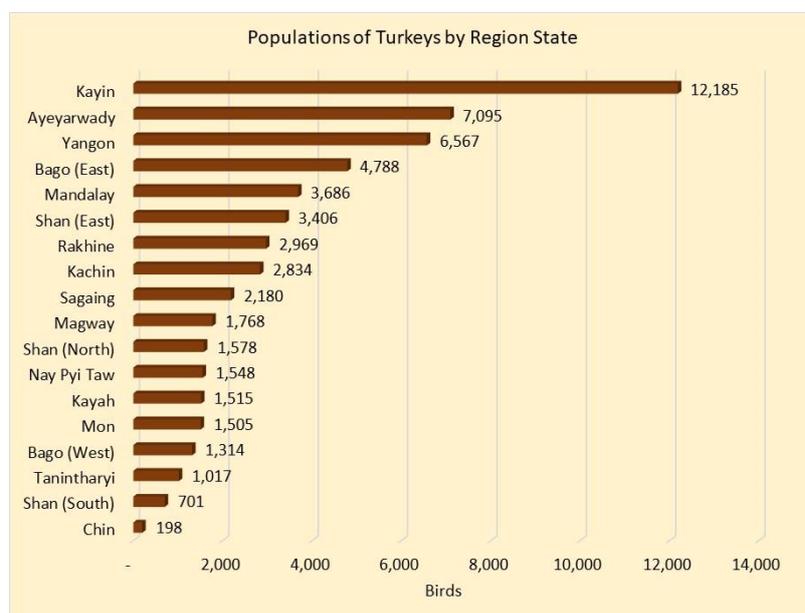


Figure 52: Number of turkeys by Region State

93. **Ayeyarwady had the highest population of Muscovy ducks and geese and native ducks.** Yangon and Bago (East) also had relatively high populations of these species, while all others areas were relatively low, except for Mandalay which had a number of geese. Chin had the lowest populations of all three species.

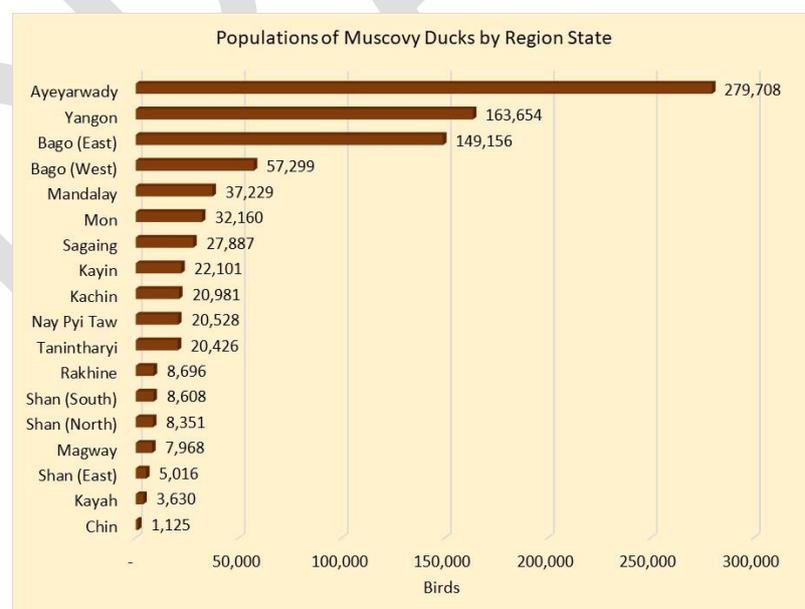


Figure 53: Number of Muscovy ducks by Region State

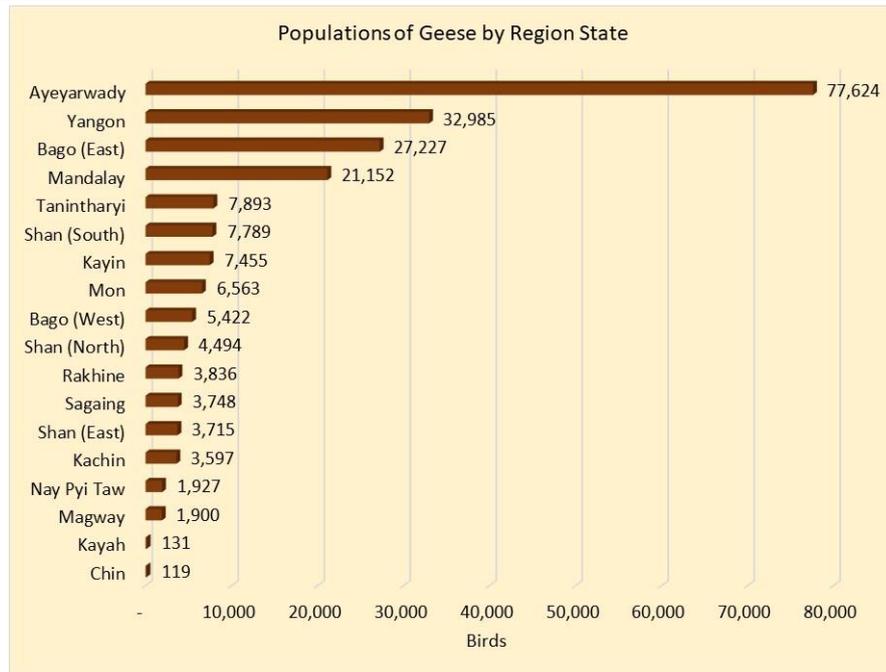


Figure 54: Number of geese by Region State

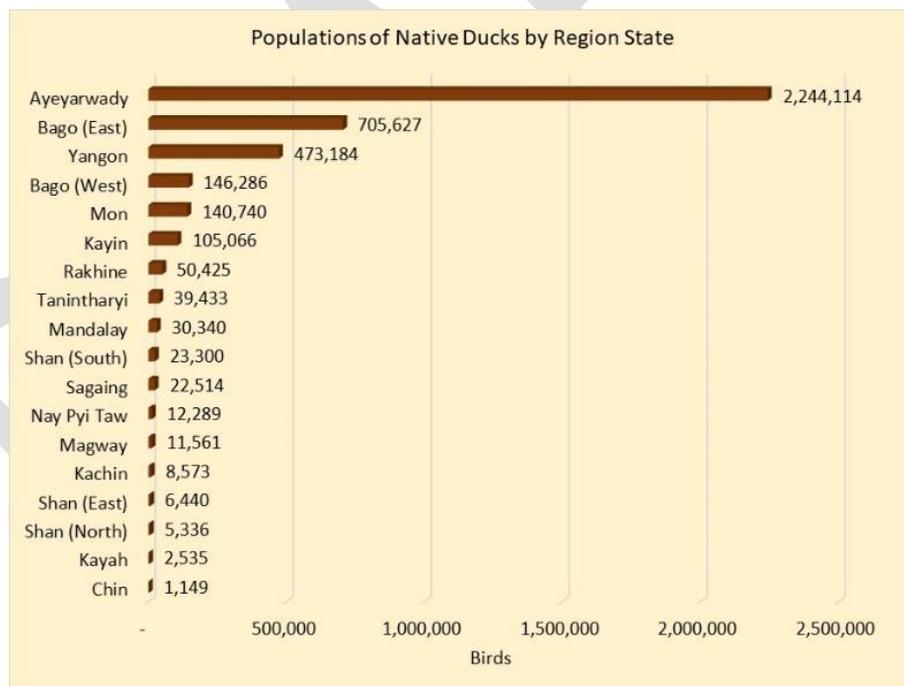


Figure 55: Number of native ducks by Region State

94. The percentage of holdings with native poultry varied from a high of 77 percent in Shan East to a low of 28 percent in Mandalay. All Region States except for two - Mon and Mandalay - had over 40 percent of holdings with native poultry.

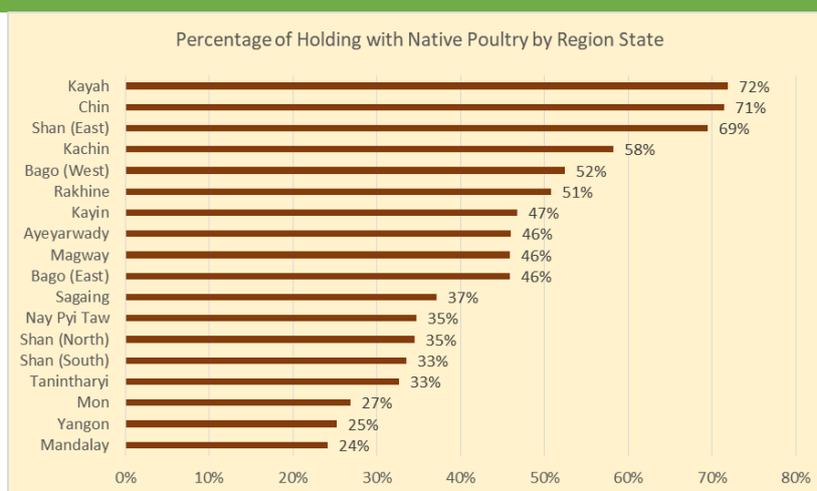


Figure 56: Percentage of holdings with native poultry by Region State

95. **Upland areas were generally at the higher end in terms of percentage of holdings with native poultry.** Kayah, Chin had the highest percentage of holdings with 72 percent, and the upland Region States of Magway, Ayeyarwady, Kayin, Rakhine, Bago (West), Kachin, Shan (East) had an average of 52 percent of holdings with native poultry, while Mandalay region, CDZ were at the lower end with only 24 percent.

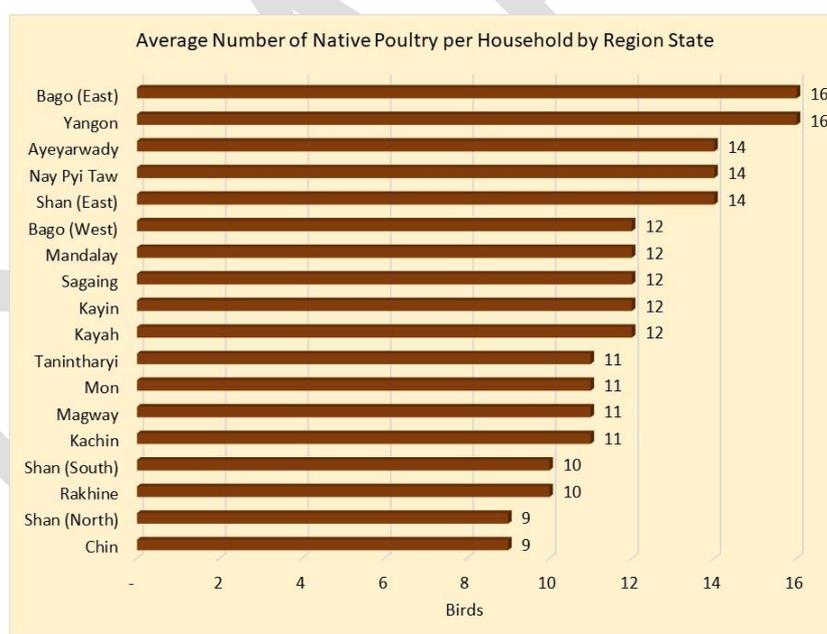


Figure 57: Average number of native poultry per holding by Region State

96. **The average number of native poultry per holding varied from a high of 16 birds in Bago (East) and Yangon to a low of nine in Chin.**

Meat Ducks

97. There were 718 holdings that had 197,000 meat ducks with an average of 275 per holding. Breeders made up 12 percent of the population, ducklings 29 percent, and young growers 59 percent.

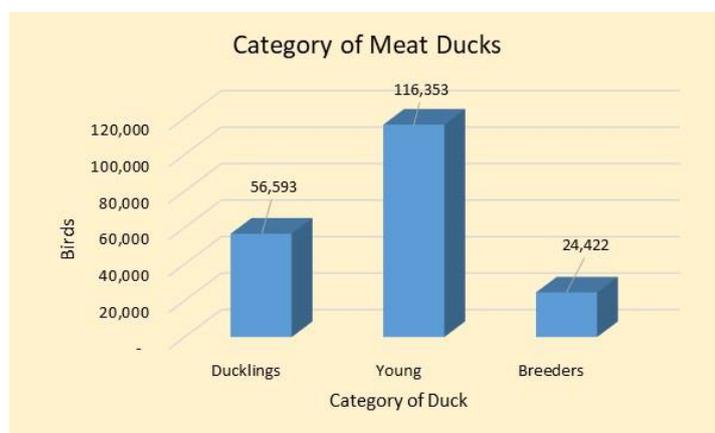


Figure 58: Age and sex structure of the pig population

98. **Yangon had the highest population of meat ducks.** About 44 percent of the meat duck population was in Yangon, with the next highest population at 23 percent in Ayeyarwady.

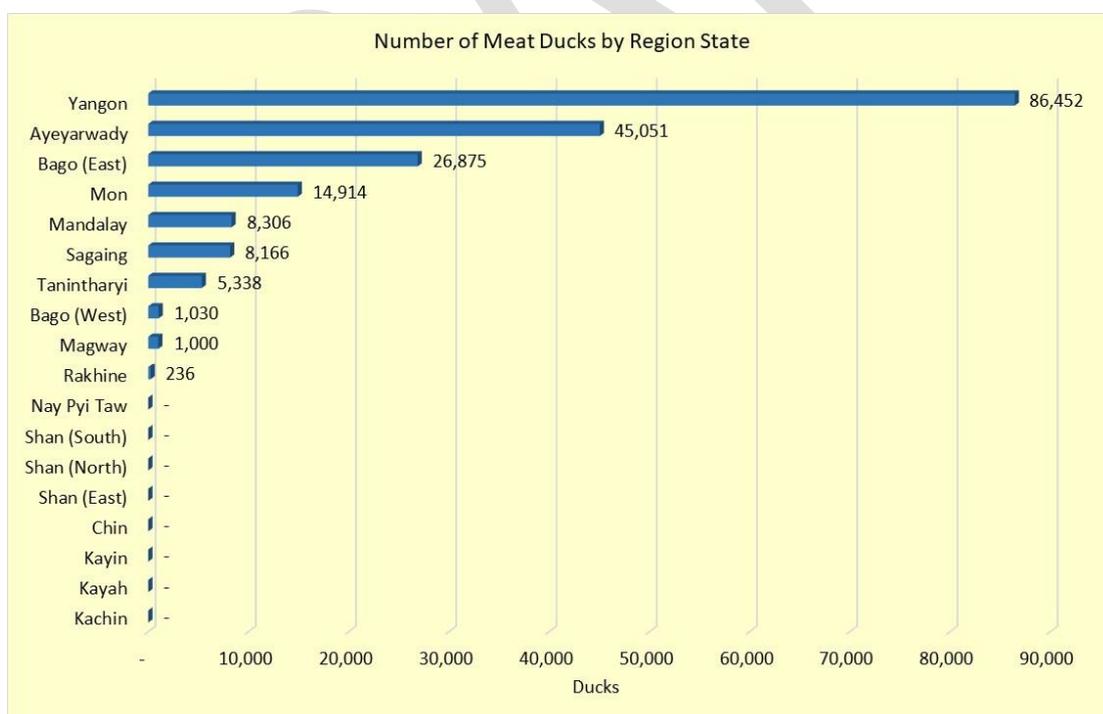


Figure 59: Number of meat ducks by Region State

99. **Ayeyarwady had the highest number of holdings of meat ducks.** Here, there were 308 holdings. The next highest was Yangon, with 209 holdings.

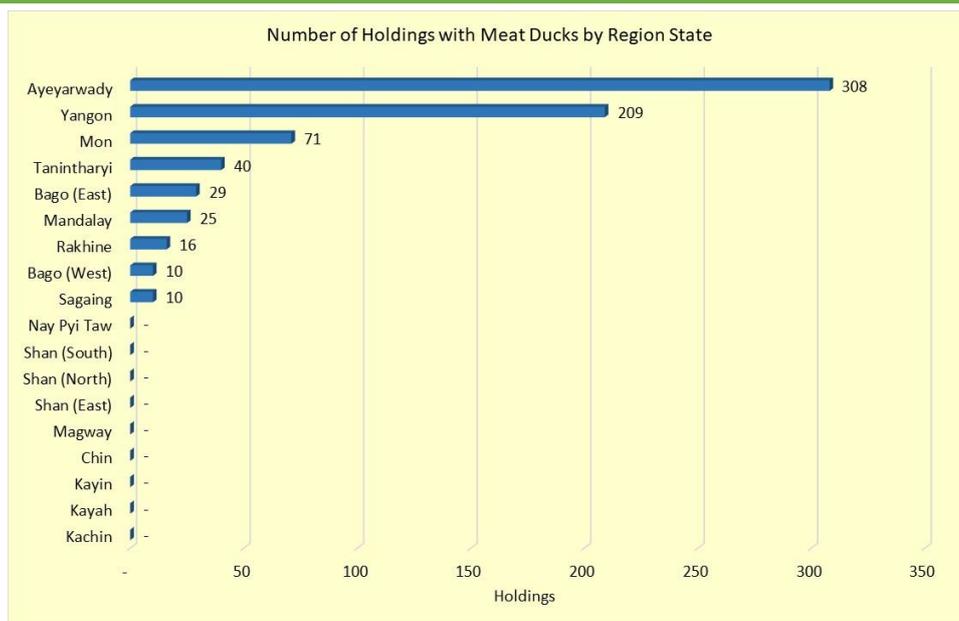


Figure 60: Number of holdings with meat ducks by Region State

100. **Bago (East) had the highest average of ducks per holding.** Here, an average of 927 ducks were raised were holding. The next highest was Sagaing, with 817 ducks per holding.

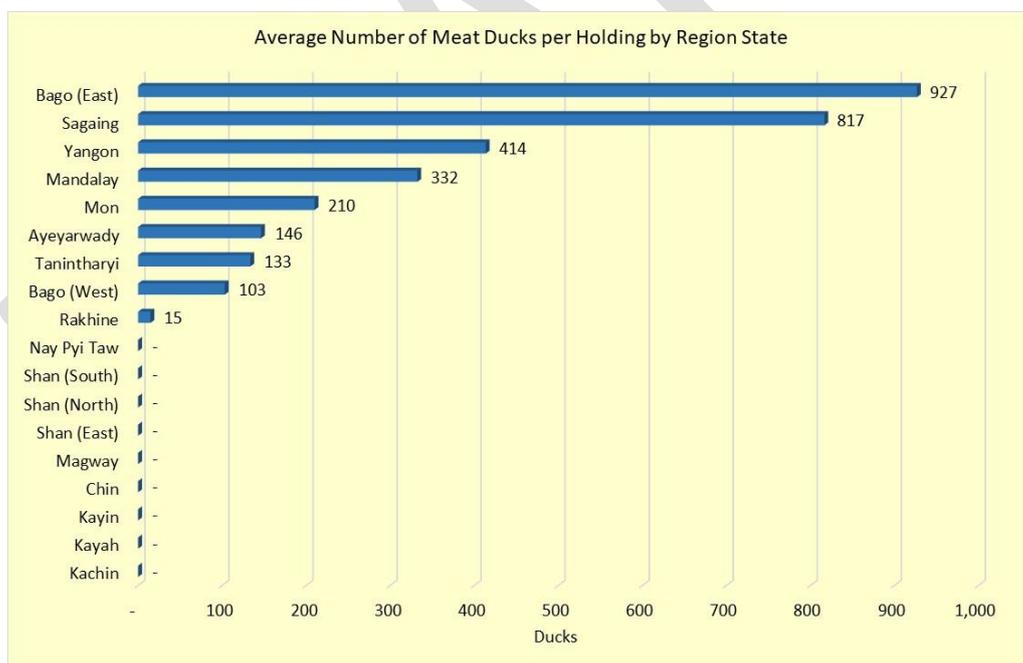


Figure 61: Average number of meat ducks per holding by Region State

Egg Layer ducks

101. *There were 7,630 holdings that had on average of nearly 400 ducks each, making a national population of a little over three million egg layer ducks.* Breeders made up 28 percent of the population, ducklings 26 percent, and pullets 45 percent.

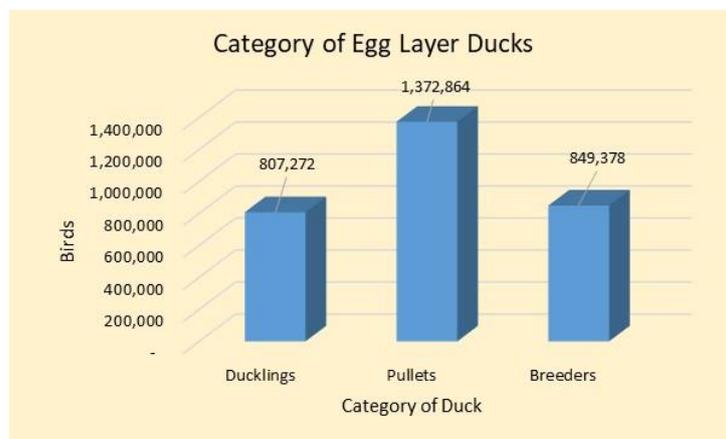


Figure 62: Age and sex structure of layer duck population

102. *Ayeyarwady had by far the most layer ducks.* In Ayeyarwady 4,600 holdings had, on average, 341 ducks each, making a population of a little over 1.5 million egg layer ducks. This was 52 percent of the national layer duck population. The next highest population, at 15 percent, was in Bago (East).

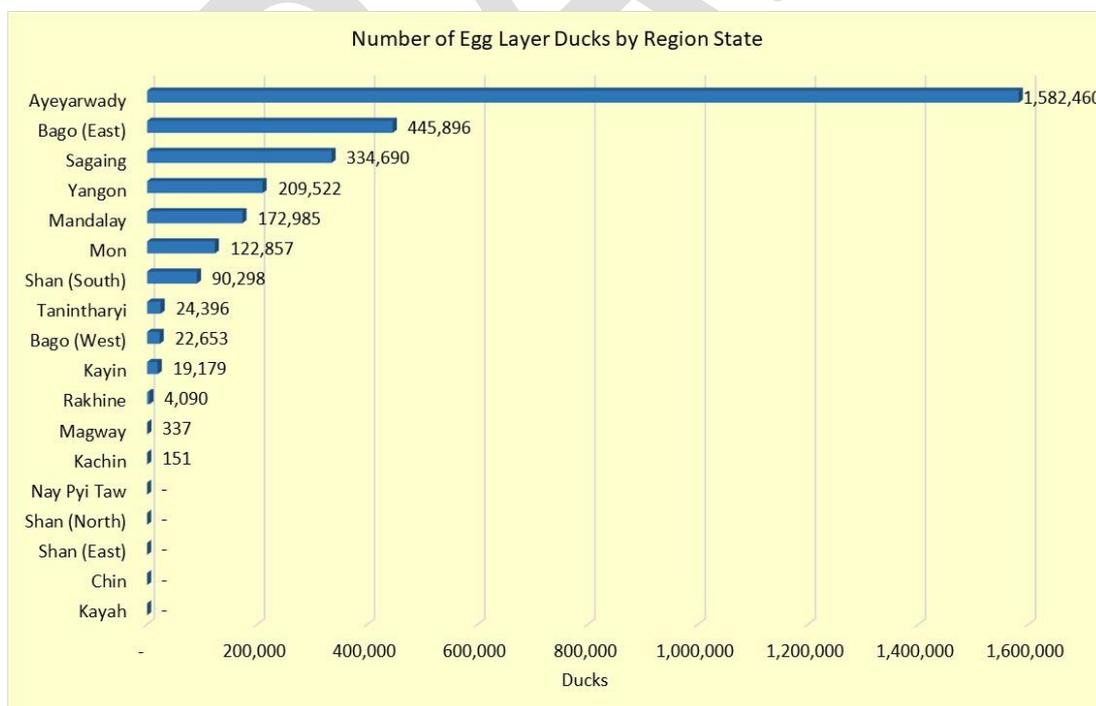


Figure 63: Number of layer ducks by Region State

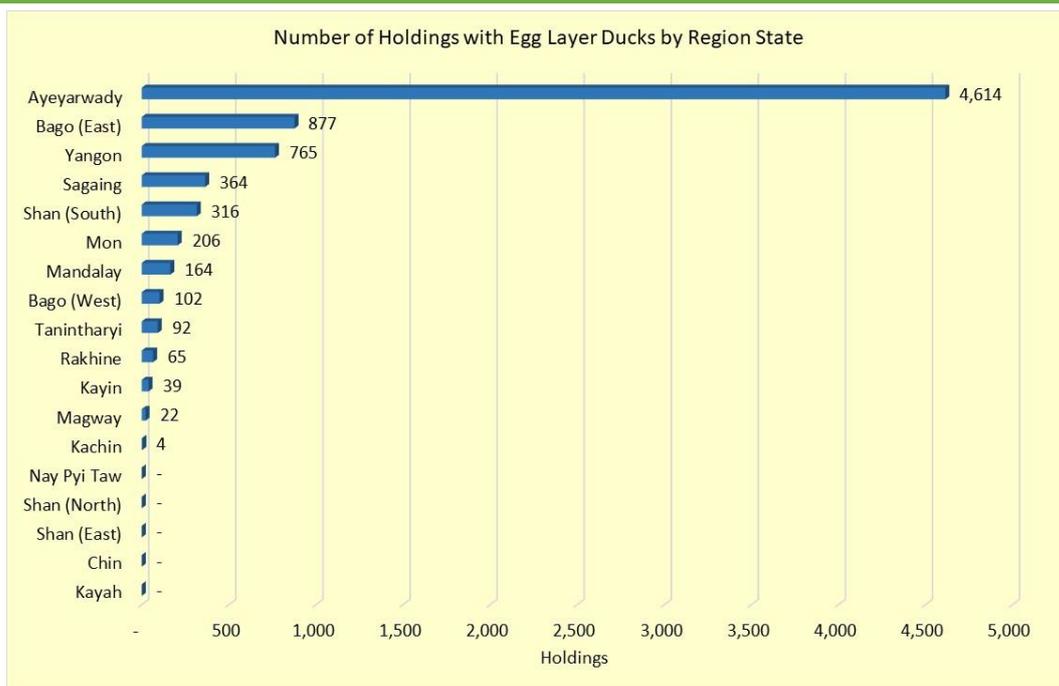


Figure 64: Number of holdings with egg layer ducks by Region State

103. **Sagaing had the highest average of egg laying ducks per holding.** The average number of ducks per holding in Sagaing was 919 ducks, while in Yangon the average was 343 ducks per holding.

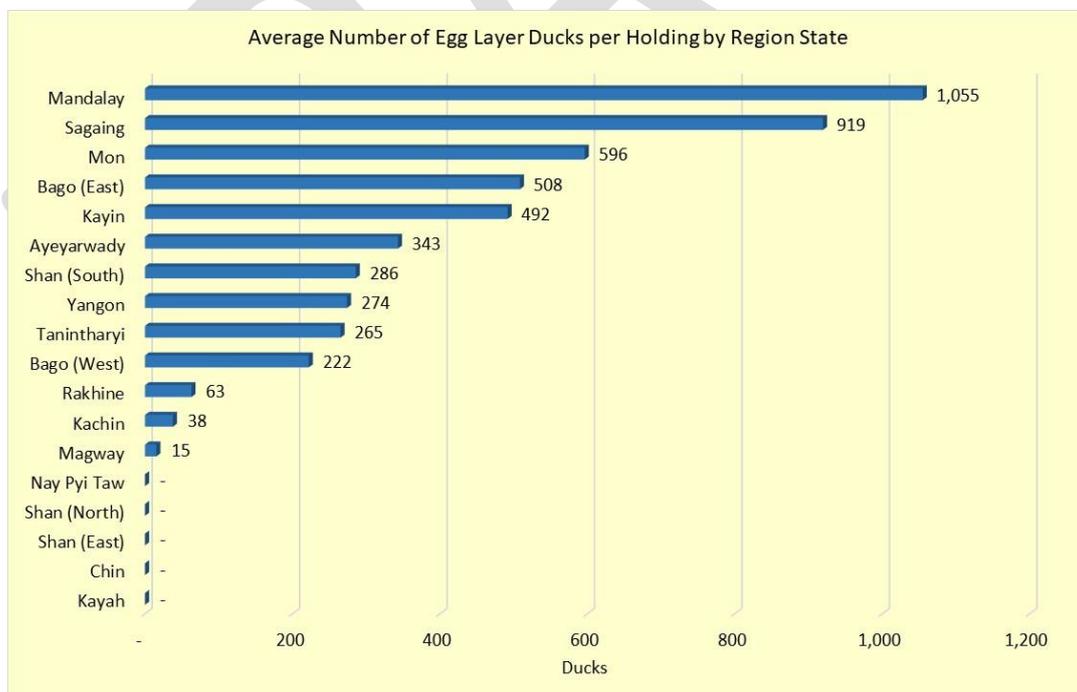


Figure 65: Average Number of ducks per holding by Region State

Broiler Chickens

104. **A total 10,747 holdings raised an average of about 1,500 broilers, making a total of 16.2 million broilers.** Only 0.13 percent (13 in ten thousand) holdings had broilers. The great majority of broilers (92 percent or nearly 15 million birds) were categorized as meat-breed broilers, while the remaining 8 percent, or 1.2 million) were semi-broilers.

105. **Only four Regions States – Ayeyarwady, Rakhine, Yangon and Bago (East) had significant percentages of semi-broilers.** Ayeyarwady broiler population was made up of 19 percent semi-broilers, while Rakhine, Yangon and Bago (East) had 15 percent, 14 percent and 11 percent respectively.

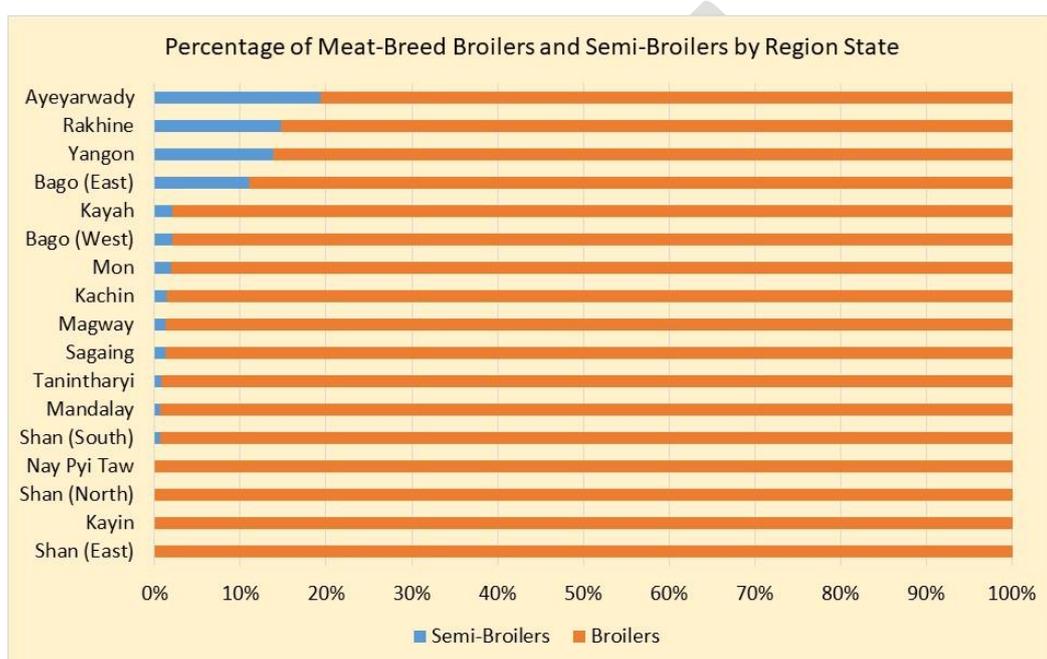


Figure 66: Percentage of meat-breed broilers and semi-broilers by Region State

106. **Yangon had the highest broiler population, defined as the total of meat-breed and semi-broilers.** Yangon had 24 percent of the broiler population. Mandalay and Bago (East) also had significant populations, at 15 percent and 14 percent of the population respectively. Broiler numbers were very low in Kayah, Shan (East) and Chin.

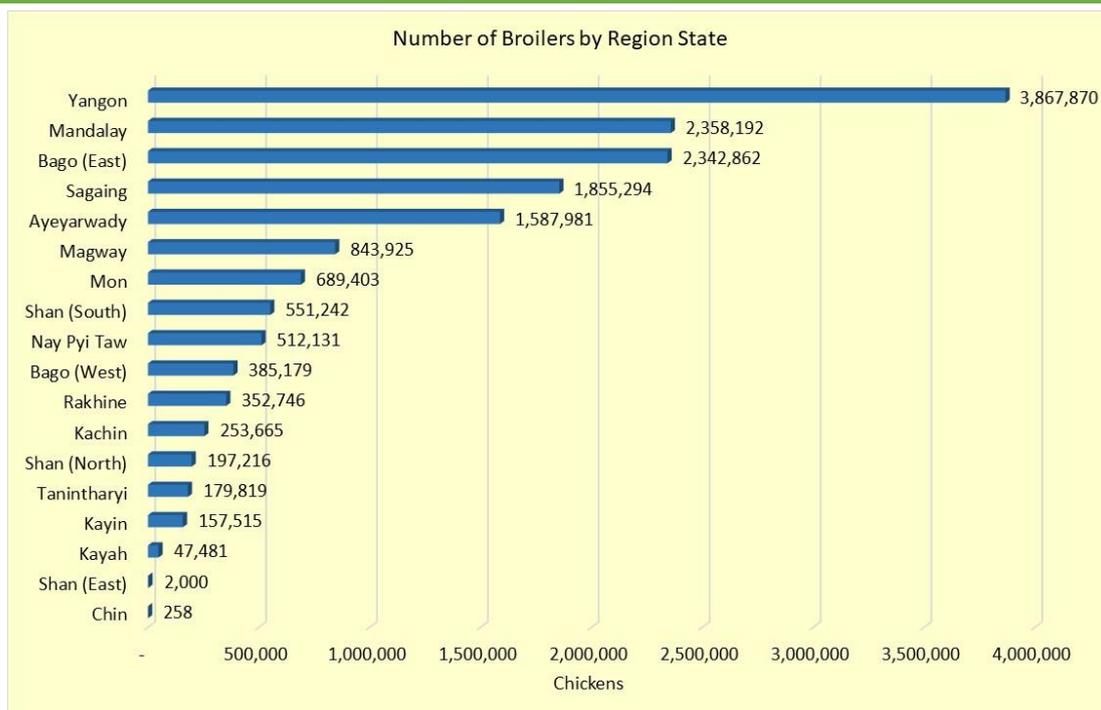


Figure 67: Number of broilers by Region State

107. **Mandalay had the highest number of holdings with broilers.** Here, there were 1,647 holdings with broilers. Rakhine, Sagaing, Ayeyarwady and Yangon all had comparable numbers of holdings with broilers.



Figure 68: Number of holdings with broilers per holding by Region State

108. **Kayin had the highest average number of broilers per holding with over 7,800 per holding.** Nay Pyi Taw was next highest with about 4,000 chickens per holding.

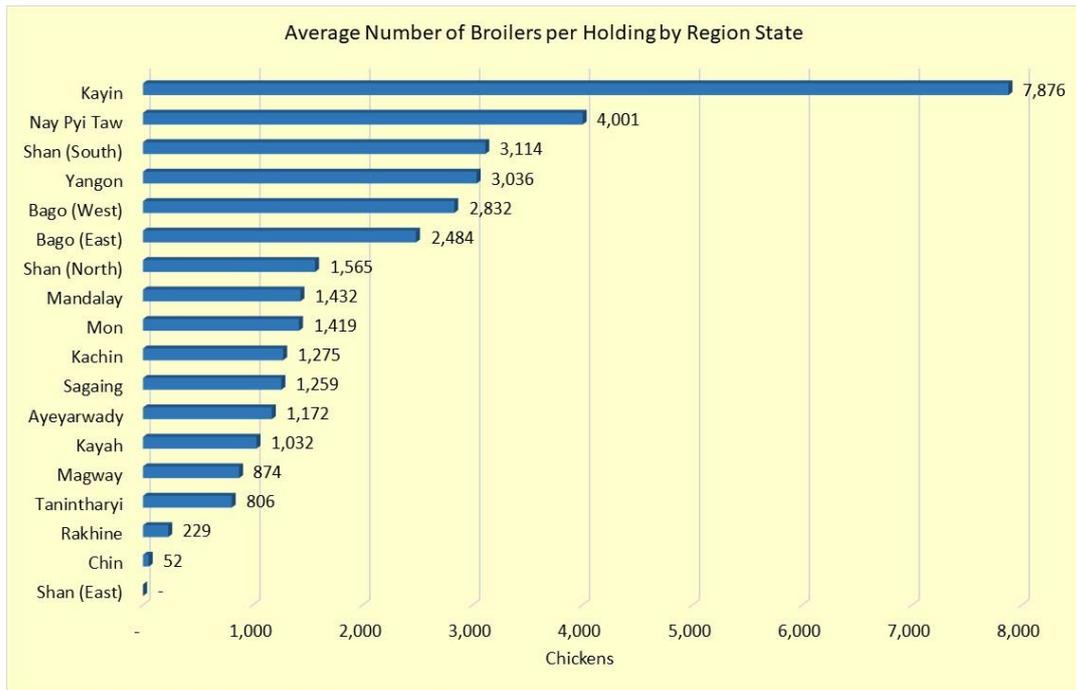


Figure 69: Average number of broilers per holding by Region State

Layer chickens

109. **A total of 6,278 holdings raised an average of about 2,000 chickens (including chicks, pullets and layers, making a total of about nearly 13 million layer breed chickens.** Of the total layer chicken population, 10 million (78 percent) were layers, 1.4 million (11 percent) were pullets and 1.3 million (10 percent) were chicks. Note that semi-broilers, the male equivalent of the female chicks on the layer holdings, numbered 1.2 million.

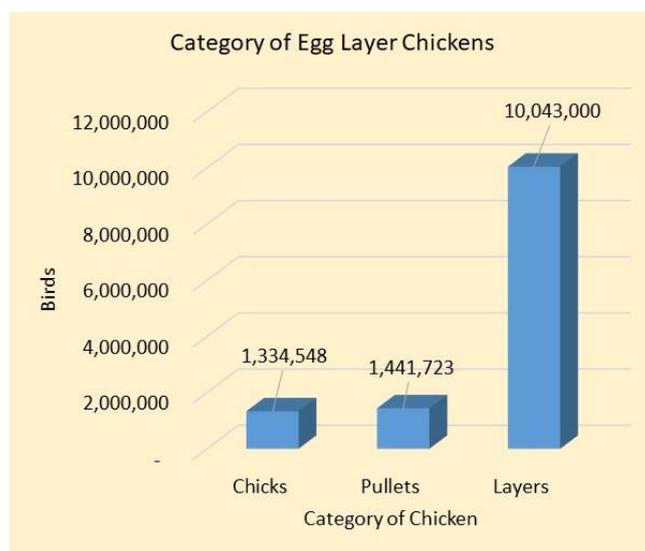


Figure 70: Age structure of the layer chicken population

110. **Shan South was by far the most significant Region State for chicken layers in terms of population.** It had 28 percent of the layer population with 3.6 million chickens. It had a relatively small number of large holdings. A total of 285 holdings had an average holding size of 12,709 chickens. In contrast, Mandalay had less total chickens at a 2.1 million, but many more holdings at a far lower number – about 2,400 chickens per holding.

111. **Shan (North) and Shan (East) both had a relatively small number of large holdings.** In Shan (North), there were only 56 holdings of average size 22,700 chickens. In Shan (East), there were only five holdings with average size 15,680.

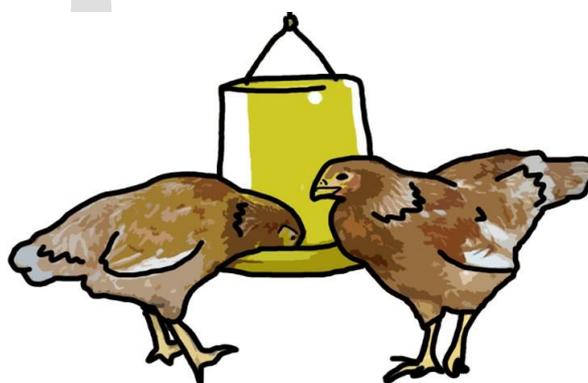


Figure 71: Shan (South) has the highest chicken layer population

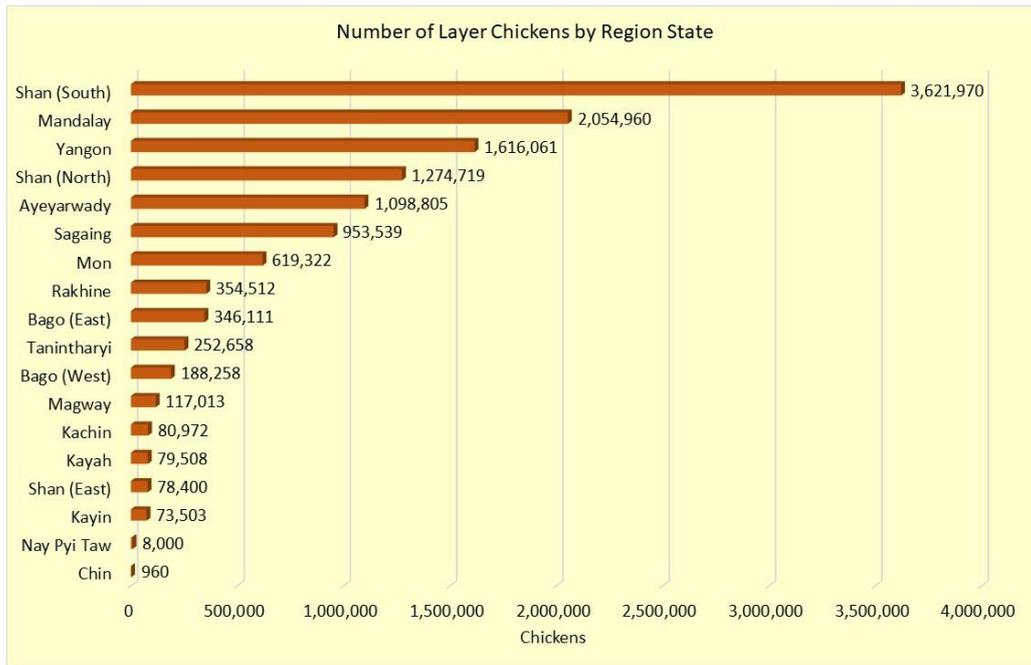


Figure 72: Number of layer chickens by Region State

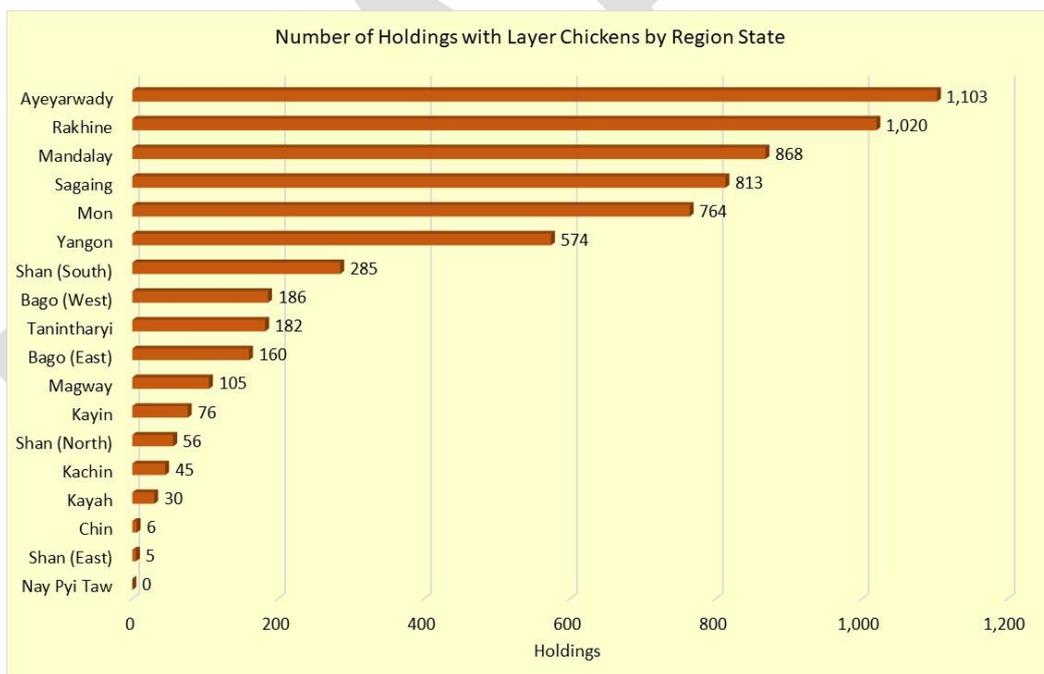


Figure 73: Number of layer chicken holdings by Region State



Figure 74: Average number of layer chickens per holding by Region State

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Quail

112. ***In total, 454 holdings raised an average of about 7,300 quails per holding making a total of about nearly 3.3 million birds.*** The quail population was made up of 75 percent layers, 5 percent pullets, and 20 percent chicks.

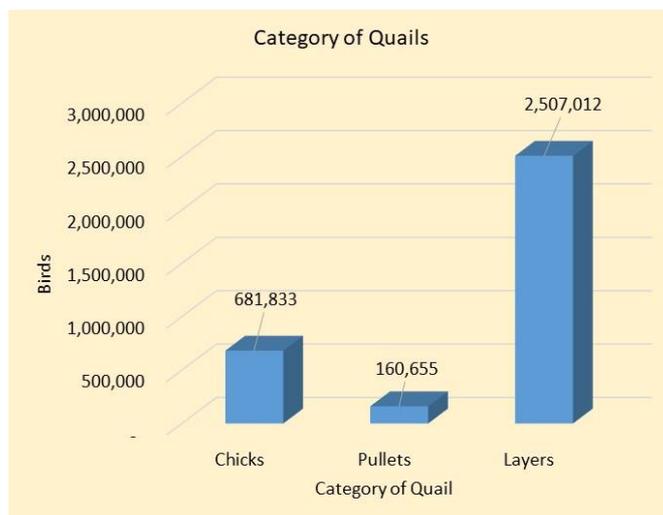


Figure 75: Structure of the quail population

113. ***Yangon and Sagaing had by far the most quail,*** having between them 79 percent of the quail population. Twenty holdings in Yangon raised 1.5 million quail with an average of 77,400 quail per holding. In Sagaing, 105 holdings raised 1.1 million quail with an average of 10,400 per holding.

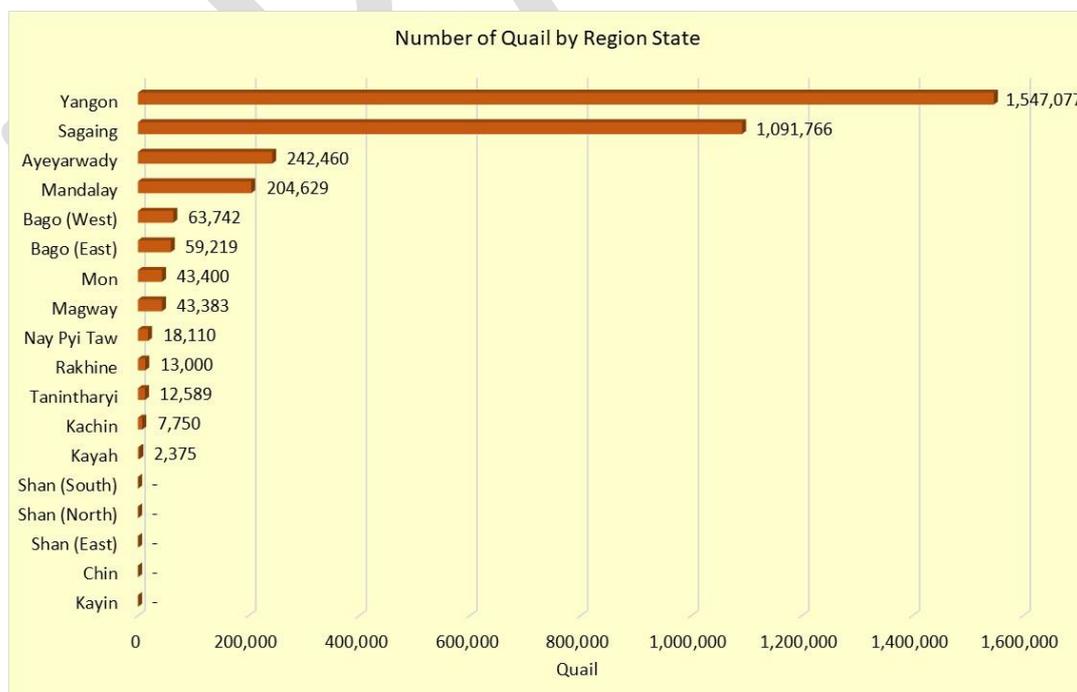


Figure 76: Number of quail by Region State

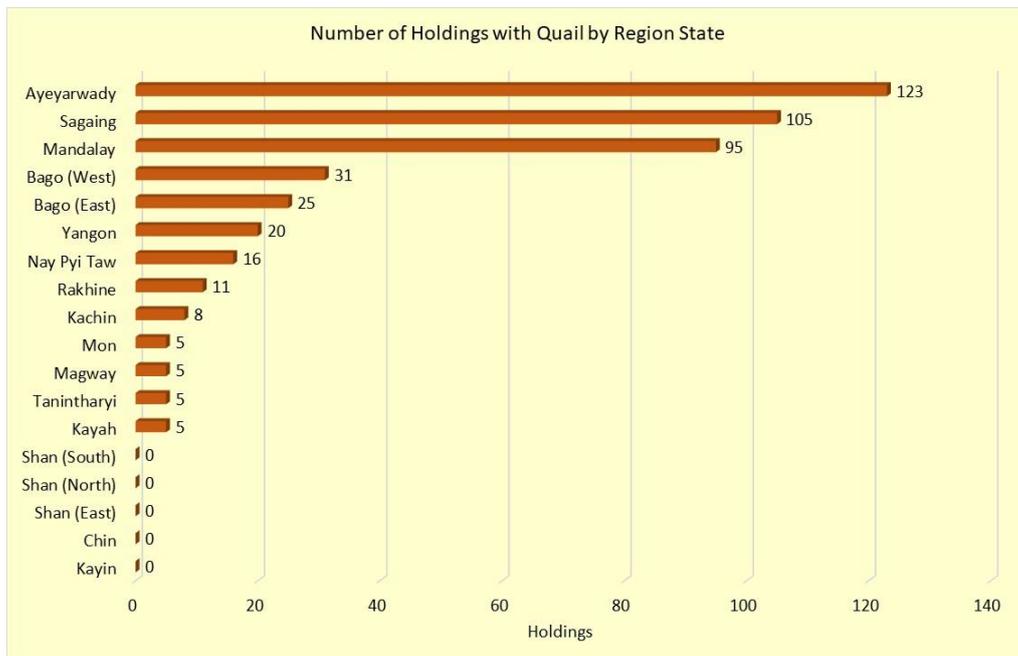


Figure 77: Number of holdings with quail by Region State

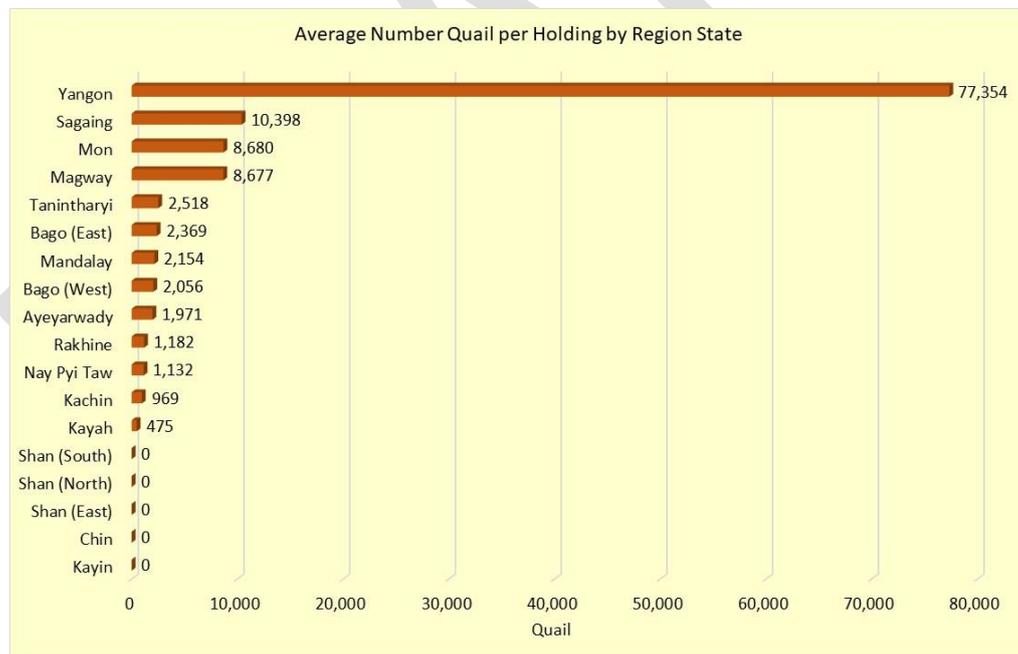


Figure 78: Average number of quail per holding

Dogs

114. ***In total, a little over 2 million holdings (25 percent) raised dogs, with an average of nearly two dogs per holding, making a total of nearly 3.8 million dogs.*** The survey did not collect data on stray dogs. Females aged over six months made up 26 percent of the national population, while males of the same age made up 43 percent. Twelve percent of dogs were between two and six months and 12 percent under two months.

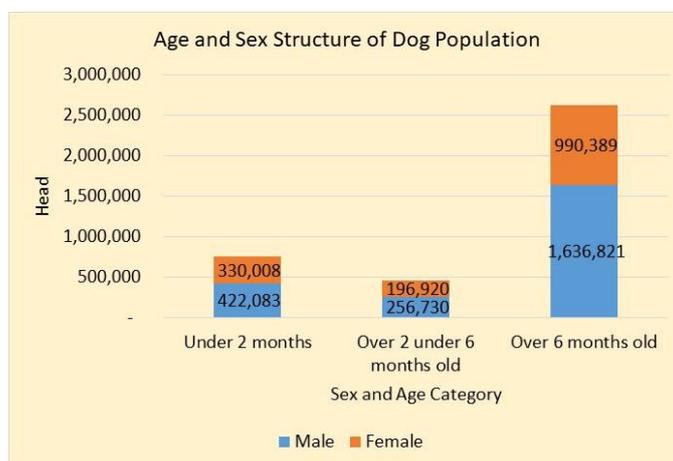


Figure 79: Age and sex structure of the dog population

115. ***The percentage of holdings with dogs varied significantly.*** Kachin had the highest percentage at 34 percent and Mon had the lowest at eight percent.



Figure 80: Percentage of holdings with dogs by Region State

116. **The number of dogs per holding did not vary greatly.** The highest was in Tanintharyi at 2.3 dogs per holding and the lowest was in Chin at 1.3 dogs per holding.

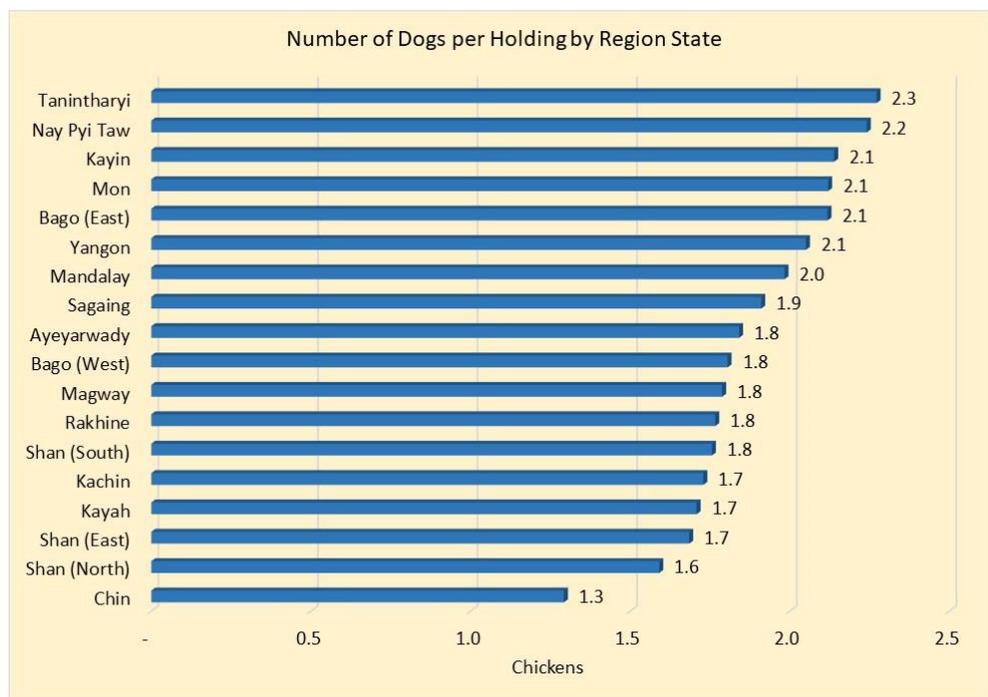


Figure 81: Average number of dogs per holding by Region State

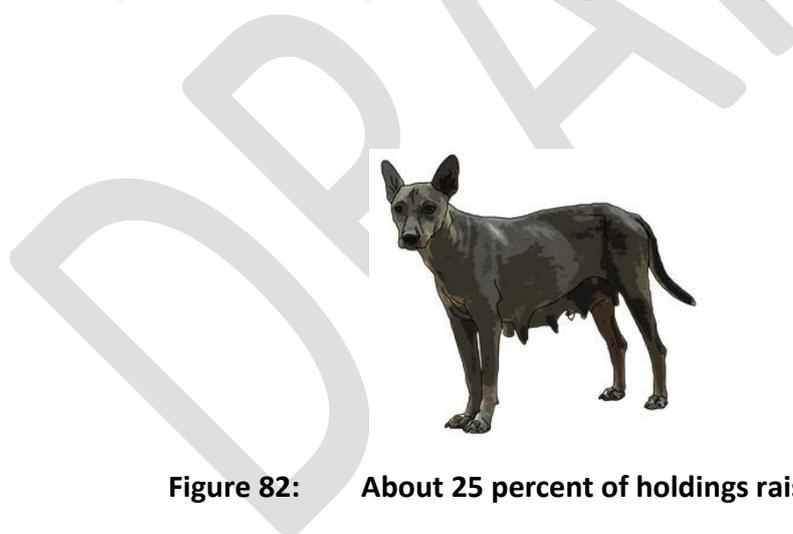


Figure 82: About 25 percent of holdings raised dogs

Annex 1 National Survey questionnaire

Ministry of Agriculture, Livestock and Irrigation

Livestock Breeding and Veterinary Department

Animal Census Data Collection

_____ Region / State

Ward/Village _____

Enu: Group No: _____ Household No: _____

SECTION 1: INTERVIEW DATA

District		Township	
Village Tract		Ward / Village	
Date of Interview:/...../2017	Time Start Interview	_____ : _____ (hour : min)

SECTION 2: RESPONDENT AND HOUSEHOLD DATA

Respondent Name			
Respondent Gender	Male Female	Respondent Age	_____ years
Respondent Position	Head of household Household member Other (circle response) If other, please specify: _____		
Respondent Education Level		Respondent Phone Number	

Head of household	Name _____	
	Male Female	(Circle Response)
Have you cropped land this year?	Yes No (Circle Response)	→ If yes, _____ acres
Do you use the tractors for the land preparation?	Yes No (Circle Response)	→ If yes, _____ tractors Two Wheel Four Wheel Own Rent

REPORT OF NATIONAL LIVESTOCK BASELINE SURVEY 2018

Do you use combine harvester in harvesting the crops?	Yes No (Circle Response)	➔ If yes, _____ (own) _____ (Rent)
--------------------------------------------------------------	------------------------------------	---------------------------------------

SECTION 3: POPULATION OF ANIMALS

Do you raise animals? Yes No (Circle Response)

If yes, complete the tables:

Large Animals		< 1 yo			1-3 yo			3 yo			Total
	Breed	Male Entire	Male Castrate	Female	Male Entire	Male Castrate	Female	Male Entire	Male Castrate	Female	
Draught Cattle											
Dairy Cattle											
Draught Buffalo											
Dairy Buffalo											
Horse											
Other											

Small Animals	< 2 months			2-6 months			6 months			Total
	Male Entire	Male Castrate	Female	Male Entire	Male Castrate	Female	Male Entire	Male Castrate	Female	
Goats										
Sheep										
Pigs										
Dogs										

Poultry / Birds									
Native Hens		Turkeys		Muscovy Ducks		Native Duck		Geese	
Native Cocks									

Milk collection:

Today, have you collected milk from any of your Draught Cattle females?	➔	Yes No (Circle Response) If yes, how many head? _____ head
-------------------------------------------------------------------------	---	------------------------------------------------------------------

Mating Services:

Have you rented any Entire Male Draught Cattle (i.e Bull) for mating in the previous month?	Yes <input type="checkbox"/> No <input type="checkbox"/> (Circle response) If yes, how many head? _____ head
Do you have AI service to your cow in the previous six months?	Yes <input type="checkbox"/> No <input type="checkbox"/> (Circle response) If yes, how many head? _____ head
Have you rented any Entire Male Pig (i.e. Boar) for mating service?	Yes <input type="checkbox"/> No <input type="checkbox"/> (Circle response) If yes, how many head? _____ head

SECTION 4: COMMERCIAL POULTRY

15. Do you raise any commercial poultry? Yes No (Circle Response)

If yes, complete this table.

Type	Total		
Chicken Broiler			
Semi-broiler			
	Chicks / Ducklings	Pullets	Layers
Chicken Layer			
Duck (Meat)			
Duck (Eggs)			
Quail			

Do you have any commercial poultry / duck farm? Yes No (Circle Response)

If yes, complete this table.

Type	Chicks / Ducklings	Pullets	Layers	Hatchery (per year)
Chicken Broiler			DOC per year
Chicken Layer			DOC per year
Duck (Eggs)			DOD per year
Duck (Meat)			DOD per year
Quail			DOQ per year

COMMERCIAL CHICKEN HOUSING

Is the chicken house(s) located in a production zone?	Yes <input type="checkbox"/> No <input type="checkbox"/> (Circle response) If yes, what is the name of the zone?
Is the chicken house located over a fish pond?	Yes <input type="checkbox"/> No <input type="checkbox"/> (Circle response)

SECTION 5: INTERVIEWER DETAILS

Time End Interview	_____ : _____ (hour : min)		
Interviewer Name	_____	Enumerator ID	

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Annex 2 Photo Gallery



2016& 2017: Pilot Data Collection in Project 6 and Mandalay 8



2017: 1st Steering Committee Meeting



2018: 2nd Steering Committee Meeting



2018: 3rd Steering Committee Meeting



2017: ToT Trainings and Tablet Data Entry Trainings



2018: National Livestock Baseline Survey Data Collection



Tablet Data Entry



Data Downloading from Sever



Data Cleaning and Checking



Data Analysis and Report Preparation

2018: Data Processing Steps



2019: National Livestock Baseline Survey Launching

Annex 3 NLBS Working Group

No:	Organization/Name	Position	Function
1	Steering Committee Members	Minister and Senior level Officers	Policy and Decision Makers
2	Dr Ye Tun Win	Director General, LBVD	Managed all the processes
3	Dr Murray Maclean	Chief Technical Advisor, FAO-LIFT	Managed all the technical process
4	Dr. Hnin Thidar Myint	National Project Director, LBVD	Managed all the processes
5	Dr. Toe Min Tun	Deputy Director	Logistic Arrangement
6	Mr. Adi Smith	Data Management Consultant, FAO-LIFT	Trained LBVD for data cleaning and checking
7	Mr. Jeffrey Himel	GIS Expert, FAO-LIFT	Trained to create maps
8	Dr. Htet Htet Khaing	Technical support, FAO-LIFT	Technical support
9	Dr. May Thu Aung	Technical support, FAO-LIFT	Technical support
Data Management Team			
10	Dr Su Su Hlaing	Deputy Township Officer, LBVD	Data Checking and Analysis
11	Dr Aye Myat Thu	Deputy Township Officer, LBVD	Data Cleaning and Checking
12	Dr Ein Gyinn Myat	Deputy Township Officer, LBVD	Data Cleaning and Checking
13	Dr MC Thet	Deputy Township Officer, LBVD	Data Cleaning and Checking, Creating QGIS Maps
14	Dr Nan Mo Kham	Deputy Township Officer, LBVD	Data Cleaning and Checking
15	Dr Thu Rein Soe Oo	Deputy Township Officer, LBVD	Data Cleaning and Checking
16	Daw Khin Nwe	Assistant Supervisor, LBVD	Data Cleaning and Checking, Creating QGIS Maps
	Daw Than Than Htay	Assistant Supervisor, LBVD	Creating QGIS Maps
17	U Wai Lin Aung	Deputy Assistant Supervisor, LBVD	Data Downloading, Data Cleaning and Checking, Creating QGIS Maps

Annex 4 List of Townships (No Data Collection in NLBS)

No.	State / Region	Township	Remark
1	Mandalay	Aungmyaythazan	Livestock Free Zone
2	Mandalay	Chanayethazan	Livestock Free Zone
3	Mandalay	Chanmyathazi	Livestock Free Zone
4	Mandalay	Mahaaungmyay	Livestock Free Zone
5	Mandalay	Pyigyitagon	Livestock Free Zone
6	Yangon	Ahlon	Livestock Free Zone
7	Yangon	Bahan	Livestock Free Zone
8	Yangon	Botahtaung	Livestock Free Zone
9	Yangon	Cocokyun	Livestock Free Zone
10	Yangon	Dagon	Livestock Free Zone
11	Yangon	Dagon Myothit (North)	Livestock Free Zone
12	Yangon	Dagon Myothit (South)	Livestock Free Zone
13	Yangon	Dawbon	Livestock Free Zone
14	Yangon	Hlaing	Livestock Free Zone
15	Yangon	Insein	Livestock Free Zone
16	Yangon	Kamaryut	Livestock Free Zone
17	Yangon	Kyauktada	Livestock Free Zone
18	Yangon	Kyeemyindaing	Livestock Free Zone
19	Yangon	Lanmadaw	Livestock Free Zone
20	Yangon	Latha	Livestock Free Zone
21	Yangon	Mayangone	Livestock Free Zone
22	Yangon	Mingalartaungnyunt	Livestock Free Zone
23	Yangon	North Okkalapa	Livestock Free Zone
24	Yangon	Pabedan	Livestock Free Zone
25	Yangon	Pazundaung	Livestock Free Zone
26	Yangon	Sanchaung	Livestock Free Zone
27	Yangon	Seikgyikanaungto	Livestock Free Zone
28	Yangon	Seikkan	Livestock Free Zone
29	Yangon	South Okkalapa	Livestock Free Zone
30	Yangon	Tamwe	Livestock Free Zone
31	Yangon	Thaketa	Livestock Free Zone
32	Yangon	Thingangyun	Livestock Free Zone
33	Yangon	Yankin	Livestock Free Zone
34	Rakhine	Buthidaung	No Data Collection
35	Rakhine	Maungdaw	No Data Collection
36	Shan	Kunlong	No Data Collection
37	Shan	Mongmao	No Data Collection
38	Shan	Narphan	No Data Collection
39	Shan	Pangsang	No Data Collection
40	Shan	Pangwaun	No Data Collection
41	Shan	Mongla	No Data Collection

Annex 5: Timeline of NLBS

No	Item	2016				2017												2018												2019	
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
1	Six Townships pilot Survey	√	√	√	√	√	√	√	√	√	√	√	√	√	√																
2	Eight Townships pilot Survey							√																							
3	Preparation of National Livestock Baseline Survey Plan										√																				
4	First Time for Township Focal Point Training											√																			
5	One Village Pilot Data Collection in All Townships												√																		
6	Second Time for Township Focal Point Training													√																	
7	First Time for Steering Committee Meeting														√																
8	Second Time for Steering Committee Meeting															√															
9	Third Time for Township Focal Point Training																√														
10	20% Data Collection in Townships																√	√													
11	Data Entry for National Livestock Baseline Survey																	√	√												
12	Data Cleaning and Checking for National Livestock Baseline Survey																	√	√	√	√										
13	Third Time for NLBS Steering Committee																		√												
14	NLBS Feedback and ToT for Large Check Farm Data Collection																			√											
15	Large Chicken Farm Data Collection																				√										
16	Data Cleaning and Checking for Large Chicken Farm Data Collection																					√	√	√							
17	NLBS Feedback Workshop																							√							
18	Preparation of Draft Report for National Livestock Baseline Survey																								√	√	√	√	√		
19	Confirmation of Report																												√		
20	Launching of Livestock Population in Myanmar																													√	

Annex 6: Statistical Tables

Table A- 1 Estimate of the number of holdings that kept/bred livestock by Region State

Region/State	Large Livestock						Small Livestock			
	Draught Cattle	Dairy Cattle	Draught Buffalo	Dairy Buffalo	Mythun	Horse	Pigs	Sheep	Goats	Dogs
Union of Myanmar	2,249,494	31,850	421,387	7,368	10,474	28,673	2,225,211	18,754	155,027	2,049,905
Kachin	108,425	1,017	54,019	724	-	863	166,405	580	7,931	131,711
Kayah	14,955	56	4,706	63	-	54	36,207	142	888	24,523
Kayin	56,201	504	7,733	191	-	487	77,254	329	24,469	49,370
Chin	9,532	42	6,378	11	10,460	2,130	54,249	127	7,823	27,411
Sagaing	437,388	1,998	68,890	427	-	2,814	284,068	3,545	9,519	229,573
Tanintharyi	17,402	423	3,262	54	-	25	33,505	114	2,772	31,656
Bago (East)	130,655	1,397	28,102	978	-	1,188	163,447	962	7,804	134,271
Bago (West)	133,361	894	4,413	69	-	1,562	105,848	396	2,134	114,162
Magway	376,772	1,386	10,964	56	-	2,028	172,589	2,552	14,808	269,818
Mandalay	406,535	16,665	9,156	734	-	4,218	145,927	5,415	27,639	253,670
Mon	34,928	515	3,812	37	-	574	30,749	142	10,078	30,384
Rakhine	101,821	598	19,807	204	-	102	101,653	311	10,664	86,941
Yangon	45,518	2,181	3,863	416	-	1,211	81,807	774	10,062	82,754
Shan (East)	49,738	157	38,834	396	14	449	99,158	238	578	64,864
Shan (North)	59,558	1,110	70,897	2,018	-	4,668	98,106	439	2,292	114,229
Shan (South)	92,775	769	56,004	476	-	1,850	97,479	484	685	76,525
Ayeyarwady	132,293	1,676	20,265	252	-	4,006	420,118	1,894	13,812	281,788
Nay Pyi Taw	41,637	462	10,282	262	-	444	56,642	310	1,069	46,255

Table A- 2 Estimate of the number of holdings raising native chickens or commercial poultry by Region State

Region/State	Chicken(Native)	Commercial Poultry					Total
		Broilers	Chicken (egg)	Duck (meat)	Duck (egg)	Quail	
Union of Myanmar	3,974,696	10,747	6,278	718	7,630	454	25,827
Kachin	225,980	199	45	-	4	8	256
Kayah	54,624	46	30	-	-	5	81
Kayin	129,269	20	76	-	39	-	135
Chin	68,298	5	6	-	-	-	11
Sagaing	416,043	1,474	813	10	364	105	2,766
Tanintharyi	87,650	223	182	40	92	5	542
Bago (East)	275,715	943	160	29	877	25	2,034
Bago (West)	254,705	136	186	10	102	31	465
Magway	407,670	966	105	-	22	5	1,098
Mandalay	264,314	1,647	868	25	164	95	2,799
Mon	98,055	486	764	71	206	5	1,532
Rakhine	242,682	1,542	1,020	16	65	11	2,654
Yangon	218,459	1,274	574	209	765	20	2,842
Shan (East)	133,443	-	5	-	-	-	5
Shan (North)	148,924	126	56	-	-	-	182
Shan (South)	191,712	177	285	-	316	-	778
Ayeyarwady	677,836	1,355	1,103	308	4,614	123	7,503
Nay Pyi Taw	79,317	128	-	-	-	16	144

Table A-3 Estimate of the number and type of large/small livestock in Region State

Region/State	Large Livestock						Small Livestock			
	Draught Cattle	Dairy Cattle	Draught Buffalo	Dairy Buffalo	Mythun	Horse	Pigs	Sheep	Goats	Dogs
Union of Myanmar	9,622,253	129,882	1,866,605	34,041	36,376	62,845	5786195	353,682	1,782,862	3,832,951
Kachin	579,468	3,977	248,290	3,722	-	3,290	501,156	1,846	49,066	227,764
Kayah	78,900	227	18,637	184	-	118	82,331	246	4,509	41,887
Kayin	272,623	1,983	57,147	1,087	-	954	187,981	1,053	165,766	105,607
Chin	49,324	107	21,924	57	35,771	5,931	74,980	197	16,127	35,427
Sagaing	1,907,369	7,773	329,528	3,088	-	4,472	718,759	121,553	164,861	438,635
Tanintharyi	65,318	1,719	32,920	322	-	49	94,639	294	19,079	71,922
Bago (East)	460,982	3,988	107,262	3,498	-	1,917	409,931	2,786	49,705	284,403
Bago (West)	441,945	5,188	15,264	219	-	2,273	271,139	1,021	22,912	206,078
Magway	1,454,553	6,413	48,308	207	-	3,016	317,529	73,860	384,910	482,428
Mandalay	1,671,154	47,924	35,791	2,539	-	9,934	321,257	134,777	580,840	503,164
Mon	136,968	2,687	21,126	249	-	937	116,305	403	78,459	64,425
Rakhine	524,408	2,267	164,464	1,041	-	372	263,193	896	52,337	153,583
Yangon	144,051	24,284	21,110	5,869	-	1,917	291,672	2,625	60,894	169,680
Shan (East)	318,208	995	161,974	1,059	605	1,176	358,254	679	4,769	109,297
Shan (North)	330,356	6,219	238,632	6,192	-	14,234	342,495	2,067	29,267	181,755
Shan (South)	632,192	4,312	229,396	2,243	-	6,272	319,829	1,563	4,461	134,386
Ayeyarwady	403,725	7,338	80,622	1,010	-	5,501	986,586	5,282	81,261	518,843
Nay Pyi Taw	150,709	2,481	34,210	1,455	-	482	128,159	2,534	13,639	103,667

Table A- 4 Estimate of the number of native chickens and commercial poultry by Region State

Region/State	Chicken (Native)	Commercial Poultry					
		Broilers	Chicken (egg)	Duck(meat)	Duck(egg)	Quail	Total
Union of Myanmar	44,226,032	16,184,779	12,819,271	197,368	3,029,514	3,349,500	35,580,432
Kachin	2,355,170	253,665	80,972	-	151	7,750	342,538
Kayah	629,061	47,481	79,508	-	-	2,375	129,364
Kayin	1,369,676	157,515	73,503	-	19,179	-	250,197
Chin	589,933	258	960	-	-	-	1,218
Sagaing	5,032,333	1,855,294	953,539	8,166	334,690	1,091,766	4,243,455
Tanintharyi	915,600	179,819	252,658	5,338	24,396	12,589	474,800
Bago (East)	3,519,893	2,342,862	346,111	26,875	445,896	59,219	3,220,963
Bago (West)	2,969,827	385,179	188,258	1,030	22,653	63,742	660,862
Magway	4,520,899	843,925	117,013	1,000	337	43,383	1,005,658
Mandalay	3,167,083	2,358,192	2,054,960	8,306	172,985	204,629	4,799,072
Mon	915,486	689,403	619,322	14,914	122,857	43,400	1,489,896
Rakhine	2,308,673	352,746	354,512	236	4,090	13,000	724,584
Yangon	2,764,163	3,867,870	1,616,061	86,452	209,522	1,547,077	7,326,982
Shan (East)	1,786,932	2,000	78,400	-	-	-	80,400
Shan (North)	1,336,909	197,216	1,274,719	-	-	-	1,471,935
Shan (South)	1,871,043	551,242	3,621,970	-	90,298	-	4,263,510
Ayeyarwady	7,129,841	1,587,981	1,098,805	45,051	1,582,460	242,460	4,556,757
Nay Pyi Taw	1,043,510	512,131	8,000	-	-	18,110	538,241

Table A- 5 Estimate of the average number of livestock per holding, by Region State

Region/State	Large Livestock						Small Livestock			
	Draught Cattle	Dairy Cattle	Draught Buffalo	Dairy Buffalo	Mythun	Horse	Pigs	Sheep	Goats	Dogs
Union of Myanmar	4.3	4.1	4.4	4.6	3.5	2.2	2.6	18.9	11.5	1.9
Kachin	5.3	3.9	4.6	5.1	-	3.8	3.0	3.2	6.2	1.7
Kayah	5.3	4.1	4.0	2.9	-	2.2	2.3	1.7	5.1	1.7
Kayin	4.9	3.9	7.4	5.7	-	2.0	2.4	3.2	6.8	2.1
Chin	5.2	2.6	3.4	5.2	3.4	2.8	1.4	1.6	2.1	1.3
Sagaing	4.4	3.9	4.8	7.2	-	1.6	2.5	34.3	17.3	1.9
Tanintharyi	3.8	4.1	10.1	6.0	-	2.0	2.8	2.6	6.9	2.3
Bago (East)	3.5	2.9	3.8	3.6	-	1.6	2.5	2.9	6.4	2.1
Bago (West)	3.3	5.8	3.5	3.2	-	1.5	2.6	2.6	10.7	1.8
Magway	3.9	4.6	4.4	3.7	-	1.5	1.8	28.9	26.0	1.8
Mandalay	4.1	2.9	3.9	3.5	-	2.4	2.2	24.9	21.0	2.0
Mon	3.9	5.2	5.5	6.7	-	1.6	3.8	2.8	7.8	2.1
Rakhine	5.2	3.8	8.3	5.1	-	3.7	2.6	2.9	4.9	1.8
Yangon	3.2	11.1	5.5	14.1	-	1.6	3.6	3.4	6.1	2.1
Shan (East)	6.4	6.3	4.2	2.7	43.2	2.6	3.6	2.9	8.3	1.7
Shan (North)	5.6	5.6	3.4	3.1	-	3.1	3.5	4.7	12.8	1.6
Shan (South)	6.8	5.6	4.1	4.7	-	3.4	3.3	3.2	6.5	1.8
Ayeyarwady	3.1	4.4	4.0	4.0	-	1.4	2.4	2.8	5.9	1.8
Nay Pyi Taw	3.6	5.4	3.3	5.6	-	1.1	2.3	8.2	12.8	2.2

Table A- 6 Estimate of the average number of native chickens and commercial poultry per holding by Region State

Region/State	Chicken(Native)	Commercial Poultry				
		Broilers	Chicken(egg)	Duck (meat)	Duck (egg))	Quail
Union of Myanmar	12	1,506	2,042	275	397	7,378
Kachin	11	1,275	1,799	-	38	969
Kayah	12	1,032	2,650	-	-	475
Kayin	12	7,876	967	-	492	-
Chin	9	52	160	-	-	-
Sagaing	12	1,259	1,173	817	919	10,398
Tanintharyi	11	806	1,388	133	265	2,518
Bago (East)	16	2,484	2,163	927	508	2,369
Bago (West)	12	2,832	1,012	103	222	2,056
Magway	11	874	1,114	-	15	8,677
Mandalay	12	1,432	2,367	332	1,055	2,154
Mon	11	1,419	811	210	596	8,680
Rakhine	10	229	348	15	63	1,182
Yangon	16	3,036	2,815	414	274	77,354
Shan (East)	14	-	15,680	-	-	-
Shan (North)	9	1,565	22,763	-	-	-
Shan (South)	10	3,114	12,709	-	286	-
Ayeyarwady	14	1,172	996	146	343	1,971
Nay Pyi Taw	14	4,001	-	-	-	1,132

Table A- 7 Estimated percentage of holdings that kept/bred livestock, by Region State

Region/State	Large Livestock						Small Livestock			
	Draught Cattle	Dairy Cattle	Draught Buffalo	Dairy Buffalo	Mythun	Horse	Pigs	Sheep	Goats	Dogs
Union of Myanmar	22.71%	0.32%	4.25%	0.07%	0.11%	0.29%	22.47%	0.19%	1.57%	20.70%
Kachin	27.93%	0.26%	13.92%	0.19%	0.00%	0.22%	42.87%	0.15%	2.04%	33.93%
Kayah	19.67%	0.07%	6.19%	0.08%	0.00%	0.07%	47.62%	0.19%	1.17%	32.25%
Kayin	20.31%	0.18%	2.80%	0.07%	0.00%	0.18%	27.92%	0.12%	8.84%	17.85%
Chin	9.97%	0.04%	6.67%	0.01%	10.94%	2.23%	56.74%	0.13%	8.18%	28.67%
Sagaing	39.00%	0.18%	6.14%	0.04%	0.00%	0.25%	25.33%	0.32%	0.85%	20.47%
Tanintharyi	6.47%	0.16%	1.21%	0.02%	0.00%	0.01%	12.46%	0.04%	1.03%	11.78%
Bago (East)	21.73%	0.23%	4.67%	0.16%	0.00%	0.20%	27.18%	0.16%	1.30%	22.33%
Bago (West)	27.47%	0.18%	0.91%	0.01%	0.00%	0.32%	21.80%	0.08%	0.44%	23.52%
Magway	42.38%	0.16%	1.23%	0.01%	0.00%	0.23%	19.41%	0.29%	1.67%	30.35%
Mandalay	37.16%	1.52%	0.84%	0.07%	0.00%	0.39%	13.34%	0.49%	2.53%	23.18%
Mon	9.55%	0.14%	1.04%	0.01%	0.00%	0.16%	8.41%	0.04%	2.76%	8.31%
Rakhine	21.33%	0.13%	4.15%	0.04%	0.00%	0.02%	21.29%	0.07%	2.23%	18.21%
Yangon	5.26%	0.25%	0.45%	0.05%	0.00%	0.14%	9.45%	0.09%	1.16%	9.56%
Shan (East)	25.89%	0.08%	20.22%	0.21%	0.00%	0.23%	51.62%	0.12%	0.30%	33.77%
Shan (North)	13.81%	0.26%	16.44%	0.47%	0.00%	1.08%	22.75%	0.10%	0.53%	26.49%
Shan (South)	16.20%	0.13%	9.78%	0.08%	0.00%	0.32%	17.02%	0.08%	0.12%	13.37%
Ayeyarwady	8.98%	0.11%	1.38%	0.02%	0.00%	0.27%	28.51%	0.13%	0.94%	19.12%
Nay Pyi Taw	18.22%	0.20%	4.50%	0.11%	0.00%	0.19%	24.79%	0.14%	0.47%	20.25%

Table A- 8 Estimated percentage of holdings that kept/bred poultry by Region State

Region/State	Chicken (Native)	Commercial Poultry				
		Broilers	Chicken(egg)	Duck (meat)	Duck (egg)	Quail total
Union of Myanmar	40.13%	0.11%	0.06%	0.01%	0.08%	0.00%
Kachin	58.22%	0.05%	0.01%	0.00%	0.00%	0.00%
Kayah	71.84%	0.06%	0.04%	0.00%	0.00%	0.01%
Kayin	46.73%	0.01%	0.03%	0.00%	0.01%	0.00%
Chin	71.43%	0.01%	0.01%	0.00%	0.00%	0.00%
Sagaing	37.09%	0.13%	0.07%	0.00%	0.03%	0.01%
Tanintharyi	32.60%	0.08%	0.07%	0.01%	0.03%	0.00%
Bago (East)	45.85%	0.16%	0.03%	0.00%	0.15%	0.00%
Bago (West)	52.47%	0.03%	0.04%	0.00%	0.02%	0.01%
Magway	45.86%	0.11%	0.01%	0.00%	0.00%	0.00%
Mandalay	24.16%	0.15%	0.08%	0.00%	0.01%	0.01%
Mon	26.82%	0.13%	0.21%	0.02%	0.06%	0.00%
Rakhine	50.83%	0.32%	0.21%	0.00%	0.01%	0.00%
Yangon	25.24%	0.15%	0.07%	0.02%	0.09%	0.00%
Shan (East)	69.47%	0.00%	0.00%	0.00%	0.00%	0.00%
Shan (North)	34.53%	0.03%	0.01%	0.00%	0.00%	0.00%
Shan (South)	33.48%	0.03%	0.05%	0.00%	0.06%	0.00%
Ayeyarwady	45.99%	0.09%	0.07%	0.02%	0.31%	0.01%
Nay Pyi Taw	34.72%	0.06%	0.00%	0.00%	0.00%	0.01%

Table A-9 Estimate of the number of draught cattle by age and sex by Region State

Region/State	Under 1 year			1 year-under 3 years			3 years and over			Total Draught Cattle		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Union of Myanmar	641,463	692,637	1,334,100	1,057,142	928,160	1,985,302	3,476,707	2,826,144	6,302,851	5,175,312	4,446,941	9,622,253
Kachin	40,658	46,175	86,833	71,572	72,626	144,198	160,019	188,418	348,437	272,249	307,219	579,468
Kayah	4,794	6,107	10,901	9,291	10,655	19,946	18,549	29,504	48,053	32,634	46,266	78,900
Kayin	25,407	29,299	54,706	35,024	36,961	71,985	48,297	97,635	145,932	108,728	163,895	272,623
Chin	4,269	4,390	8,659	4,617	7,594	12,211	10,254	18,200	28,454	19,140	30,184	49,324
Sagaing	109,094	118,840	227,934	204,332	153,888	358,220	815,087	506,128	1,321,215	1,128,513	778,856	1,907,369
Tanintharyi	6,347	8,127	14,474	7,590	7,938	15,528	12,107	23,209	35,316	26,044	39,274	65,318
Bago (East)	28,772	27,866	56,638	53,323	42,183	95,506	191,871	116,967	308,838	273,966	187,016	460,982
Bago (West)	24,825	21,687	46,512	55,716	33,092	88,808	214,965	91,660	306,625	295,506	146,439	441,945
Magway	81,370	83,353	164,723	142,415	103,294	245,709	661,138	382,983	1,044,121	884,923	569,630	1,454,553
Mandalay	119,975	140,225	260,200	177,896	172,653	350,549	543,313	517,092	1,060,405	841,184	829,970	1,671,154
Mon	14,076	15,035	29,111	15,120	17,411	32,531	31,331	43,995	75,326	60,527	76,441	136,968
Rakhine	40,936	44,624	85,560	52,879	48,276	101,155	164,627	173,066	337,693	258,442	265,966	524,408
Yangon	11,365	9,681	21,046	16,906	13,120	30,026	52,788	40,191	92,979	81,059	62,992	144,051
Shan (East)	20,603	25,349	45,952	36,085	40,754	76,839	63,768	131,649	195,417	120,456	197,752	318,208
Shan (North)	23,441	27,605	51,046	34,416	42,889	77,305	84,267	117,738	202,005	142,124	188,232	330,356
Shan (South)	52,928	55,724	108,652	75,392	84,609	160,001	148,892	214,647	363,539	277,212	354,980	632,192
Ayeyarwady	21,632	17,393	39,025	47,938	24,456	72,394	203,730	88,576	292,306	273,300	130,425	403,725
Nay Pyi Taw	10,971	11,157	22,128	16,630	15,761	32,391	51,704	44,486	96,190	79,305	71,404	150,709

Table A- 10 Estimate of the number of dairy cattle by age and sex by Region State

Region/State	Under 1 year			1 year-under 3 years			3 years and over			Total Dairy Cattle		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Union of Myanmar	12,651	19,037	31,688	7,954	19,641	27,595	9,671	60,928	70,599	30,276	99,606	129,882
Kachin	528	496	1,024	476	461	937	595	1,421	2,016	1,599	2,378	3,977
Kayah	10	20	30	10	50	60	3	134	137	23	204	227
Kayin	148	171	319	197	200	397	370	897	1,267	715	1,268	1,983
Chin	18	7	25	-	-	-	60	22	82	78	29	107
Sagaing	644	1,096	1,740	462	1,191	1,653	408	3,972	4,380	1,514	6,259	7,773
Tanintharyi	176	343	519	155	273	428	144	628	772	475	1,244	1,719
Bago (East)	292	472	764	403	619	1,022	859	1,343	2,202	1,554	2,434	3,988
Bago (West)	622	735	1,357	405	641	1,046	322	2,463	2,785	1,349	3,839	5,188
Magway	712	1,055	1,767	328	989	1,317	250	3,079	3,329	1,290	5,123	6,413
Mandalay	4,842	7,814	12,656	2,554	7,321	9,875	2,470	22,923	25,393	9,866	38,058	47,924
Mon	239	468	707	84	560	644	134	1,202	1,336	457	2,230	2,687
Rakhine	181	232	413	209	497	706	471	677	1,148	861	1,406	2,267
Yangon	2,367	3,222	5,589	1,180	3,628	4,808	1,208	12,679	13,887	4,755	19,529	24,284
Shan (East)	93	109	202	115	111	226	179	388	567	387	608	995
Shan (North)	476	876	1,352	405	1,154	1,559	719	2,589	3,308	1,600	4,619	6,219
Shan (South)	387	523	910	410	577	987	531	1,884	2,415	1,328	2,984	4,312
Ayeyarwady	641	969	1,610	428	1,070	1,498	736	3,494	4,230	1,805	5,533	7,338
Nay Pyi Taw	275	429	704	133	299	432	212	1,133	1,345	620	1,861	2,481

Table A- 11 Estimate of the number of draught buffalo by age and sex by Region State

Region/State	Under 1 year			1 year-under 3 years			3 years and over			Total Draught Buffalo		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Union of Myanmar	127,525	141,433	268,958	196,157	221,086	417,243	428,319	752,085	1,180,404	752,001	1,114,604	1,866,605
Kachin	19,471	21,634	41,105	32,184	40,186	72,370	34,537	100,278	134,815	86,192	162,098	248,290
Kayah	784	1,049	1,833	1,633	2,315	3,948	3,656	9,200	12,856	6,073	12,564	18,637
Kayin	4,605	5,315	9,920	6,249	7,273	13,522	11,193	22,512	33,705	22,047	35,100	57,147
Chin	1,369	1,657	3,026	1,847	2,682	4,529	4,127	10,242	14,369	7,343	14,581	21,924
Sagaing	20,772	25,007	45,779	32,997	34,679	67,676	77,100	138,973	216,073	130,869	198,659	329,528
Tanintharyi	2,581	3,417	5,998	3,577	4,953	8,530	5,197	13,195	18,392	11,355	21,565	32,920
Bago (East)	5,332	6,468	11,800	10,088	9,669	19,757	32,730	42,975	75,705	48,150	59,112	107,262
Bago (West)	786	737	1,523	1,317	1,284	2,601	5,254	5,886	11,140	7,357	7,907	15,264
Magway	3,177	3,213	6,390	4,279	4,519	8,798	12,908	20,212	33,120	20,364	27,944	48,308
Mandalay	2,547	3,100	5,647	3,788	4,139	7,927	7,296	14,921	22,217	13,631	22,160	35,791
Mon	2,023	1,814	3,837	2,039	2,569	4,608	4,884	7,797	12,681	8,946	12,180	21,126
Rakhine	13,860	15,003	28,863	15,504	18,849	34,353	38,009	63,239	101,248	67,373	97,091	164,464
Yangon	1,795	1,538	3,333	2,557	2,675	5,232	4,670	7,875	12,545	9,022	12,088	21,110
Shan (East)	9,211	9,355	18,566	15,580	17,715	33,295	43,456	66,657	110,113	68,247	93,727	161,974
Shan (North)	16,274	15,450	31,724	27,783	28,567	56,350	63,288	87,270	150,558	107,345	131,287	238,632
Shan (South)	16,839	19,660	36,499	24,023	26,596	50,619	53,311	88,967	142,278	94,173	135,223	229,396
Ayeyarwady	4,552	4,906	9,458	7,233	8,875	16,108	18,926	36,130	55,056	30,711	49,911	80,622
Nay Pyi Taw	1,547	2,110	3,657	3,479	3,541	7,020	7,777	15,756	23,533	12,803	21,407	34,210

Table A- 12 Estimate of the number of dairy buffalo by age and sex by Region State

Region/State	Under 1 year			1 year-under 3 years			3 years and over			Total Dairy Buffalo		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Union of Myanmar	2,942	3,799	6,741	2,648	4,494	7,142	5,854	14,304	20,158	11,444	22,597	34,041
Kachin	333	426	759	344	715	1,059	390	1,514	1,904	1,067	2,655	3,722
Kayah	10	16	26	5	20	25	31	102	133	46	138	184
Kayin	130	170	300	133	145	278	188	321	509	451	636	1,087
Chin	5	12	17	5	-	5	6	29	35	16	41	57
Sagaing	180	289	469	172	435	607	517	1,495	2,012	869	2,219	3,088
Tanintharyi	19	34	53	29	34	63	54	152	206	102	220	322
Bago (East)	331	470	801	294	354	648	435	1,614	2,049	1,060	2,438	3,498
Bago (West)	30	20	50	5	15	20	59	90	149	94	125	219
Magway	60	35	95	-	20	20	26	66	92	86	121	207
Mandalay	66	51	117	116	753	869	707	846	1,553	889	1,650	2,539
Mon	27	33	60	17	11	28	64	97	161	108	141	249
Rakhine	75	143	218	92	109	201	215	407	622	382	659	1,041
Yangon	421	601	1,022	197	431	628	928	3,291	4,219	1,546	4,323	5,869
Shan (East)	70	50	120	94	92	186	363	390	753	527	532	1,059
Shan (North)	688	855	1,543	737	841	1,578	1,044	2,027	3,071	2,469	3,723	6,192
Shan (South)	213	233	446	261	245	506	504	787	1,291	978	1,265	2,243
Ayeyarwady	31	27	58	80	150	230	230	492	722	341	669	1,010
Nay Pyi Taw	253	334	587	67	124	191	93	584	677	413	1,042	1,455

Table A- 13 Estimate of the Number of Mythun age and sex by Region State

Region/State	Under 1 year			1 year-under 3 years			3 years and over			Total Mythun		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Union of Myanmar	14,091	140	14,231	9,103	215	9,318	12,597	230	12,827	35,791	585	36,376
Kachin	-	-	-	-	-	-	-	-	-	-	-	-
Kayah	-	-	-	-	-	-	-	-	-	-	-	-
Kayin	-	-	-	-	-	-	-	-	-	-	-	-
Chin	13,996	60	14,056	9,028	115	9,143	12,487	85	12,572	35,511	260	35,771
Sagaing	-	-	-	-	-	-	-	-	-	-	-	-
Tanintharyi	-	-	-	-	-	-	-	-	-	-	-	-
Bago (East)	-	-	-	-	-	-	-	-	-	-	-	-
Bago (West)	-	-	-	-	-	-	-	-	-	-	-	-
Magway	-	-	-	-	-	-	-	-	-	-	-	-
Mandalay	-	-	-	-	-	-	-	-	-	-	-	-
Mon	-	-	-	-	-	-	-	-	-	-	-	-
Rakhine	-	-	-	-	-	-	-	-	-	-	-	-
Yangon	-	-	-	-	-	-	-	-	-	-	-	-
Shan (East)	95	80	175	75	100	175	110	145	255	280	325	605
Shan (North)	-	-	-	-	-	-	-	-	-	-	-	-
Shan (South)	-	-	-	-	-	-	-	-	-	-	-	-
Ayeyarwady	-	-	-	-	-	-	-	-	-	-	-	-
Nay Pyi Taw	-	-	-	-	-	-	-	-	-	-	-	-

Table A- 14 Estimate of the number of horses by age and sex by Region State

Region/State	Under 1 year			1 year-under 3 years			3 years and over			Total Horse		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Union of Myanmar	2,992	2,828	5,820	6,354	5,490	11,844	22,922	22,259	45,181	32,268	30,577	62,845
Kachin	33	41	74	270	387	657	1,251	1,308	2,559	1,554	1,736	3,290
Kayah	-	20	20	-	-	-	58	40	98	58	60	118
Kayin	69	55	124	75	129	204	428	198	626	572	382	954
Chin	165	217	382	468	407	875	2,620	2,054	4,674	3,253	2,678	5,931
Sagaing	240	282	522	269	421	690	1,254	2,006	3,260	1,763	2,709	4,472
Tanintharyi	-	-	-	-	-	-	10	39	49	10	39	49
Bago (East)	100	172	272	123	195	318	538	789	1,327	761	1,156	1,917
Bago (West)	90	149	239	140	266	406	570	1,058	1,628	800	1,473	2,273
Magway	162	166	328	128	242	370	836	1,482	2,318	1,126	1,890	3,016
Mandalay	932	461	1,393	2,278	514	2,792	2,421	3,328	5,749	5,631	4,303	9,934
Mon	59	48	107	43	87	130	396	304	700	498	439	937
Rakhine	10	27	37	20	55	75	133	127	260	163	209	372
Yangon	73	119	192	182	161	343	639	743	1,382	894	1,023	1,917
Shan (East)	19	26	45	93	45	138	600	393	993	712	464	1,176
Shan (North)	452	398	850	1,346	1,311	2,657	6,857	3,870	10,727	8,655	5,579	14,234
Shan (South)	252	195	447	437	572	1,009	2,843	1,973	4,816	3,532	2,740	6,272
Ayeyarwady	336	452	788	471	693	1,164	1,117	2,432	3,549	1,924	3,577	5,501
Nay Pyi Taw	-	-	-	11	5	16	351	115	466	362	120	482

Table A- 15 Estimate of the Number of pigs by age and sex by Region State

Region/State	Under 2 month			Under 2- over 6 month			6 month and over			Pigs Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Union of Myanmar	607,404	609,804	1,217,208	936,113	884,482	1,820,595	1,223,674	1,524,718	2,748,392	2,767,191	3,019,004	5,786,195
Kachin	45,602	48,125	93,727	70,602	64,716	135,318	130,515	141,596	272,111	246,719	254,437	501,156
Kayah	6,046	6,343	12,389	11,270	11,449	22,719	19,274	27,949	47,223	36,590	45,741	82,331
Kayin	18,716	20,374	39,090	27,715	26,914	54,629	42,870	51,392	94,262	89,301	98,680	187,981
Chin	5,414	5,601	11,015	8,209	8,323	16,532	23,734	23,699	47,433	37,357	37,623	74,980
Sagaing	71,712	73,255	144,967	119,471	112,585	232,056	151,460	190,276	341,736	342,643	376,116	718,759
Tanintharyi	12,006	13,488	25,494	15,447	16,461	31,908	14,413	22,824	37,237	41,866	52,773	94,639
Bago (East)	40,994	40,966	81,960	70,691	66,465	137,156	87,744	103,071	190,815	199,429	210,502	409,931
Bago (West)	31,231	27,642	58,873	55,112	50,535	105,647	41,383	65,236	106,619	127,726	143,413	271,139
Magway	29,605	29,331	58,936	49,103	41,953	91,056	82,945	84,592	167,537	161,653	155,876	317,529
Mandalay	35,153	35,575	70,728	56,180	50,143	106,323	62,595	81,611	144,206	153,928	167,329	321,257
Mon	17,363	18,464	35,827	17,778	19,330	37,108	15,770	27,600	43,370	50,911	65,394	116,305
Rakhine	37,289	35,077	72,366	34,196	34,733	68,929	46,162	75,736	121,898	117,647	145,546	263,193
Yangon	41,576	37,053	78,629	59,861	47,847	107,708	40,643	64,692	105,335	142,080	149,592	291,672
Shan (East)	30,890	36,928	67,818	59,529	65,184	124,713	71,190	94,533	165,723	161,609	196,645	358,254
Shan (North)	23,015	22,721	45,736	49,390	44,983	94,373	103,652	98,734	202,386	176,057	166,438	342,495
Shan (South)	32,201	30,882	63,083	50,760	46,565	97,325	77,462	81,959	159,421	160,423	159,406	319,829
Ayeyarwady	114,568	114,108	228,676	156,824	152,976	309,800	190,976	257,134	448,110	462,368	524,218	986,586
Nay Pyi Taw	14,023	13,871	27,894	23,975	23,320	47,295	20,886	32,084	52,970	58,884	69,275	128,159

Table A- 16 Estimate of the number of sheep by age and sex by Region State

Region/State	Under 2 month			Under 2- over 6 month			6 month and over			Sheep Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Union of Myanmar	25,667	33,933	59,600	28,099	45,007	73,106	34,301	186,675	220,976	88,067	265,615	353,682
Kachin	115	160	275	297	358	655	406	510	916	818	1,028	1,846
Kayah	-	7	7	64	32	96	30	113	143	94	152	246
Kayin	81	141	222	150	276	426	185	220	405	416	637	1,053
Chin	25	5	30	35	15	50	51	66	117	111	86	197
Sagaing	8,656	13,395	22,051	8,226	14,705	22,931	10,467	66,104	76,571	27,349	94,204	121,553
Tanintharyi	10	19	29	74	71	145	50	70	120	134	160	294
Bago (East)	97	67	164	702	520	1,222	721	679	1,400	1,520	1,266	2,786
Bago (West)	20	25	45	300	261	561	250	165	415	570	451	1,021
Magway	4,877	5,965	10,842	4,949	9,863	14,812	6,998	41,208	48,206	16,824	57,036	73,860
Mandalay	11,092	13,197	24,289	10,661	16,303	26,964	11,548	71,976	83,524	33,301	101,476	134,777
Mon	26	45	71	26	56	82	91	159	250	143	260	403
Rakhine	56	43	99	113	101	214	253	330	583	422	474	896
Yangon	164	200	364	413	478	891	590	780	1,370	1,167	1,458	2,625
Shan (East)	67	40	107	44	20	64	218	290	508	329	350	679
Shan (North)	19	104	123	286	368	654	643	647	1,290	948	1,119	2,067
Shan (South)	77	94	171	379	281	660	387	345	732	843	720	1,563
Ayeyarwady	230	290	520	1,125	1,091	2,216	1,145	1,401	2,546	2,500	2,782	5,282
Nay Pyi Taw	55	136	191	255	208	463	268	1,612	1,880	578	1,956	2,534

Table A- 17 Estimate of the number of goat in by age and sex by Region State

Region/State	Under 2 month			Under 2- over 6 month			6 month and over			Goat Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Union of Myanmar	126,656	156,742	283,398	162,171	215,385	377,556	345,536	776,372	1,121,908	634,363	1,148,499	1,782,862
Kachin	3,032	3,779	6,811	3,656	5,438	9,094	11,740	21,421	33,161	18,428	30,638	49,066
Kayah	241	279	520	270	394	664	750	2,575	3,325	1,261	3,248	4,509
Kayin	13,375	17,121	30,496	16,612	22,945	39,557	25,727	69,986	95,713	55,714	110,052	165,766
Chin	954	1,173	2,127	1,050	1,995	3,045	2,212	8,743	10,955	4,216	11,911	16,127
Sagaing	12,355	15,998	28,353	14,267	18,610	32,877	30,224	73,407	103,631	56,846	108,015	164,861
Tanintharyi	1,574	2,700	4,274	1,636	2,097	3,733	2,903	8,169	11,072	6,113	12,966	19,079
Bago (East)	3,280	4,181	7,461	4,834	6,515	11,349	11,332	19,563	30,895	19,446	30,259	49,705
Bago (West)	1,549	1,876	3,425	3,128	4,574	7,702	2,841	8,944	11,785	7,518	15,394	22,912
Magway	22,521	29,091	51,612	34,235	34,600	68,835	111,210	153,253	264,463	167,966	216,944	384,910
Mandalay	43,992	51,618	95,610	51,629	75,606	127,235	84,855	273,140	357,995	180,476	400,364	580,840
Mon	6,644	7,912	14,556	7,454	9,885	17,339	13,751	32,813	46,564	27,849	50,610	78,459
Rakhine	4,503	5,325	9,828	4,556	6,803	11,359	7,948	23,202	31,150	17,007	35,330	52,337
Yangon	5,340	5,545	10,885	6,111	7,754	13,865	14,728	21,416	36,144	26,179	34,715	60,894
Shan (East)	187	338	525	648	889	1,537	891	1,816	2,707	1,726	3,043	4,769
Shan (North)	914	1,522	2,436	1,858	3,571	5,429	6,608	14,794	21,402	9,380	19,887	29,267
Shan (South)	286	431	717	575	350	925	1,229	1,590	2,819	2,090	2,371	4,461
Ayeyarwady	5,037	6,525	11,562	8,386	11,461	19,847	15,044	34,808	49,852	28,467	52,794	81,261
Nay Pyi Taw	872	1,328	2,200	1,266	1,898	3,164	1,543	6,732	8,275	3,681	9,958	13,639

Table A- 18 Estimate of the number of dogs by age and sex by Region State

Region/State	Under 2 month			Under 2- over 6 month			6 month and over			Dog Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Union of Myanmar	422,083	330,008	752,091	256,730	196,920	453,650	1,636,821	990,389	2,627,210	2,315,634	1,517,317	3,832,951
Kachin	23,197	18,426	41,623	16,664	12,465	29,129	95,055	61,957	157,012	134,916	92,848	227,764
Kayah	3,699	3,912	7,611	4,532	3,474	8,006	15,164	11,106	26,270	23,395	18,492	41,887
Kayin	14,800	12,972	27,772	8,196	6,699	14,895	35,337	27,603	62,940	58,333	47,274	105,607
Chin	4,157	4,404	8,561	4,259	4,316	8,575	7,884	10,407	18,291	16,300	19,127	35,427
Sagaing	49,844	42,613	92,457	28,871	23,079	51,950	183,610	110,618	294,228	262,325	176,310	438,635
Tanintharyi	9,380	8,113	17,493	4,779	4,276	9,055	24,280	21,094	45,374	38,439	33,483	71,922
Bago (East)	31,118	24,249	55,367	18,545	14,235	32,780	123,129	73,127	196,256	172,792	111,611	284,403
Bago (West)	24,876	17,902	42,778	13,264	8,320	21,584	96,318	45,398	141,716	134,458	71,620	206,078
Magway	53,547	41,272	94,819	23,767	18,085	41,852	220,178	125,579	345,757	297,492	184,936	482,428
Mandalay	41,819	31,640	73,459	27,878	22,044	49,922	236,077	143,706	379,783	305,774	197,390	503,164
Mon	8,770	6,992	15,762	4,448	3,541	7,989	23,785	16,889	40,674	37,003	27,422	64,425
Rakhine	22,193	16,572	38,765	12,124	8,815	20,939	56,732	37,147	93,879	91,049	62,534	153,583
Yangon	20,215	14,332	34,547	11,343	8,207	19,550	70,506	45,077	115,583	102,064	67,616	169,680
Shan (East)	7,144	5,654	12,798	7,427	6,147	13,574	49,946	32,979	82,925	64,517	44,780	109,297
Shan (North)	12,275	7,391	19,666	13,186	9,047	22,233	96,655	43,201	139,856	122,116	59,639	181,755
Shan (South)	14,557	8,442	22,999	10,549	6,261	16,810	65,921	28,656	94,577	91,027	43,359	134,386
Ayeyarwady	69,915	56,316	126,231	40,916	32,764	73,680	191,104	127,828	318,932	301,935	216,908	518,843
Nay Pyi Taw	10,577	8,806	19,383	5,982	5,145	11,127	45,140	28,017	73,157	61,699	41,968	103,667

Table A- 19 Estimate of the number of poultry by category by Region State

Region/State	Chicken(Native)			Chicken(meat_commercial)			Chicken(egg_commercial)			
	Hens	Cocks	Total	Broiler	Semi-broiler	Total	Chick	Pullet	Layer	Total
Union of Myanmar	35,665,535	8,560,497	44,226,032	14,946,687	1,238,092	16,184,779	1,334,548	1,441,723	10,043,000	12,819,271
Kachin	1,926,178	428,992	2,355,170	250,132	3,533	253,665	11,013	7,950	62,009	80,972
Kayah	508,424	120,637	629,061	46,481	1,000	47,481	10,500	2,800	66,208	79,508
Kayin	1,122,083	247,593	1,369,676	157,515	-	157,515	2,200	9,813	61,490	73,503
Chin	481,894	108,039	589,933	155	103	258	-	-	960	960
Sagaing	4,201,041	831,292	5,032,333	1,831,560	23,734	1,855,294	124,718	100,396	728,425	953,539
Tanintharyi	732,636	182,964	915,600	178,337	1,482	179,819	29,550	22,848	200,260	252,658
Bago (East)	2,799,515	720,378	3,519,893	2,082,770	260,092	2,342,862	44,654	30,787	270,670	346,111
Bago (West)	2,575,106	394,721	2,969,827	377,402	7,777	385,179	13,976	19,503	154,779	188,258
Magway	3,736,403	784,496	4,520,899	832,529	11,396	843,925	10,444	5,400	101,169	117,013
Mandalay	2,636,642	530,441	3,167,083	2,342,875	15,317	2,358,192	272,341	241,790	1,540,829	2,054,960
Mon	725,741	189,745	915,486	675,942	13,461	689,403	56,120	79,136	484,066	619,322
Rakhine	1,608,312	700,361	2,308,673	300,914	51,832	352,746	82,367	62,682	209,463	354,512
Yangon	2,194,896	569,267	2,764,163	3,330,146	537,724	3,867,870	207,919	141,724	1,266,418	1,616,061
Shan (East)	1,284,732	502,200	1,786,932	2,000	-	2,000	-	11,000	67,400	78,400
Shan (North)	950,765	386,144	1,336,909	197,216	-	197,216	75,300	104,477	1,094,942	1,274,719
Shan (South)	1,324,032	547,011	1,871,043	547,694	3,548	551,242	265,905	488,627	2,867,438	3,621,970
Ayeyarwady	5,955,197	1,174,644	7,129,841	1,280,888	307,093	1,587,981	125,541	110,290	862,974	1,098,805
Nay Pyi Taw	901,938	141,572	1,043,510	512,131	-	512,131	2,000	2,500	3,500	8,000

Table A- 20 Estimate of the Number of Duck (meat) and Duck (eggs) and Quail by category by Region State

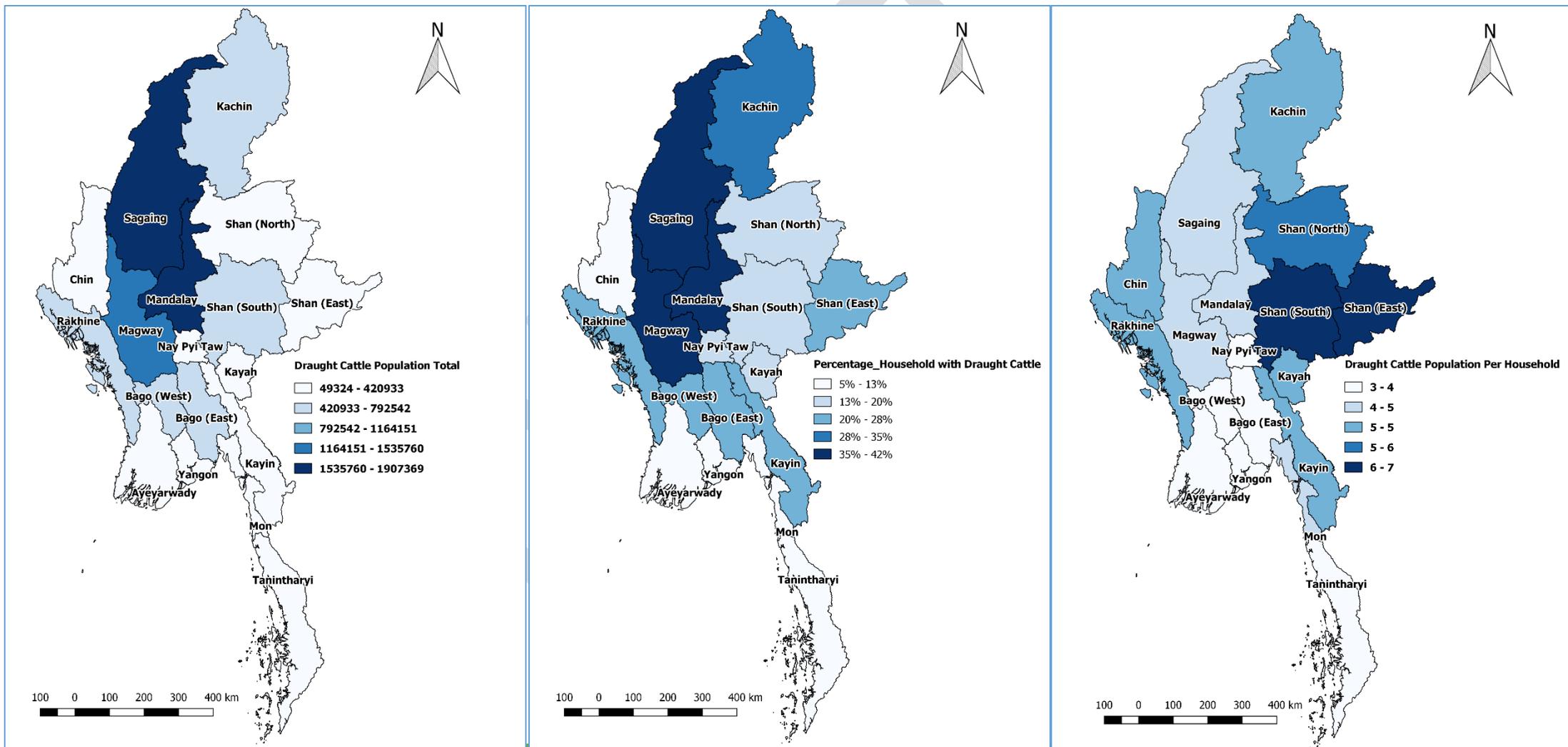
Region/State	Duck									Quail			
	Meat				Egg				Duck Total	Duckling	Pullet	Layer	Total
	Duckling	Pullet	Breeder	Total	Duckling	Pullet	Layer	Total					
Union of Myanmar	56,593	116,353	24,422	197,368	807,272	1,372,864	849,378	3,029,514	3,226,882	681,833	160,655	2,507,012	3,349,500
Kachin	-	-	-	-	-	151	-	151	151	-	-	7,750	7,750
Kayah	-	-	-	-	-	-	-	-	-	-	-	2,375	2,375
Kayin	-	-	-	-	-	2,459	16,720	19,179	19,179	-	-	-	-
Chin	-	-	-	-	-	-	-	-	-	-	-	-	-
Sagaing	3,900	4,266	-	8,166	21,813	180,072	132,805	334,690	342,856	102,733	30,500	958,533	1,091,766
Tanintharyi	2,065	3,273	-	5,338	10,244	2,994	11,158	24,396	29,734	-	-	12,589	12,589
Bago (East)	3,828	21,818	1,229	26,875	133,679	189,039	123,178	445,896	472,771	8,500	6,719	44,000	59,219
Bago (West)	60	965	5	1,030	67	11,645	10,941	22,653	23,683	-	11,813	51,929	63,742
Magway	1,000	-	-	1,000	133	158	46	337	1,337	12,000	-	31,383	43,383
Mandalay	1,719	5,069	1,518	8,306	80,344	52,808	39,833	172,985	181,291	49,100	16,860	138,669	204,629
Mon	6,991	2,323	5,600	14,914	19,377	74,414	29,066	122,857	137,771	8,600	3,900	30,900	43,400
Rakhine	56	23	157	236	734	2,540	816	4,090	4,326	-	-	13,000	13,000
Yangon	13,015	58,712	14,725	86,452	35,853	67,624	106,045	209,522	295,974	468,400	62,000	1,016,677	1,547,077
Shan (East)	-	-	-	-	-	-	-	-	-	-	-	-	-
Shan (North)	-	-	-	-	-	-	-	-	-	-	-	-	-
Shan (South)	-	-	-	-	-	27,507	62,791	90,298	90,298	-	-	-	-
Ayeyarwady	23,959	19,904	1,188	45,051	505,028	761,453	315,979	1,582,460	1,627,511	32,500	28,863	181,097	242,460
Nay Pyi Taw	-	-	-	-	-	-	-	-	-	-	-	18,110	18,110

Table A- 21 Estimate of the Number of Native Duck and Other poultry by Region State by Region State

Region/State	Ducks		Other	
	Muscovy Duck	Native Duck	Geese	Turkeys
Union of Myanmar	874,523	4,028,912	217,577	56,854
Kachin	20,981	8,573	3,597	2,834
Kayah	3,630	2,535	131	1,515
Kayin	22,101	105,066	7,455	12,185
Chin	1,125	1,149	119	198
Sagaing	27,887	22,514	3,748	2,180
Tanintharyi	20,426	39,433	7,893	1,017
Bago (East)	149,156	705,627	27,227	4,788
Bago (West)	57,299	146,286	5,422	1,314
Magway	7,968	11,561	1,900	1,768
Mandalay	37,229	30,340	21,152	3,686
Mon	32,160	140,740	6,563	1,505
Rakhine	8,696	50,425	3,836	2,969
Yangon	163,654	473,184	32,985	6,567
Shan (East)	5,016	6,440	3,715	3,406
Shan (North)	8,351	5,336	4,494	1,578
Shan (South)	8,608	23,300	7,789	701
Ayeyarwady	279,708	2,244,114	77,624	7,095
Nay Pyi Taw	20,528	12,289	1,927	1,548

Annex 7: State region maps

Figure A-1 Draught cattle total population, percentage of holdings with draught cattle, and average number of head per holding by Region



StateFigure A- 2
State

Dairy cattle total population, percentage of holdings with dairy cattle, and average number of head per holding by Region

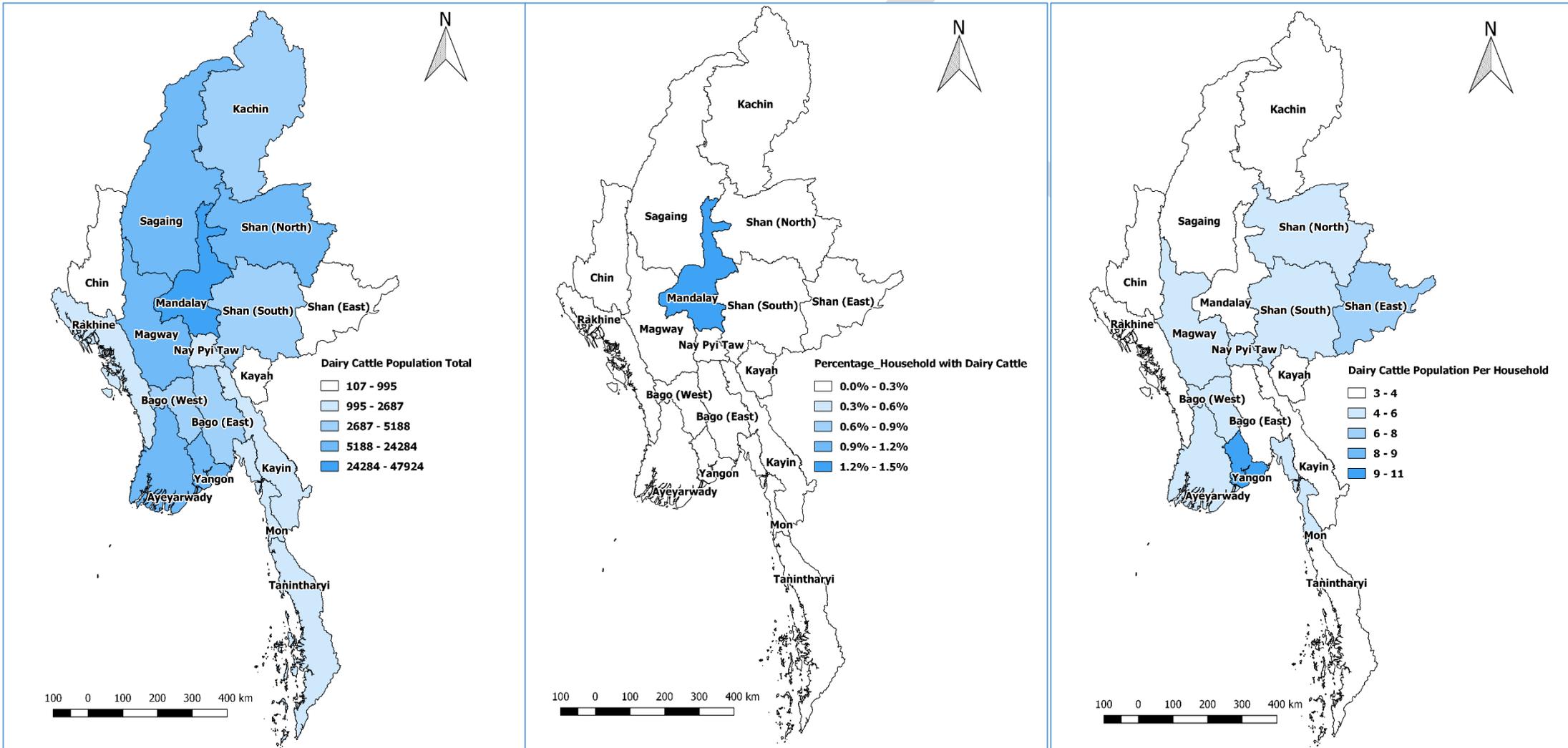


Figure A-3 Draught buffalo total population, percentage of holdings with buffalo cattle, and average number of head per holding by Region State

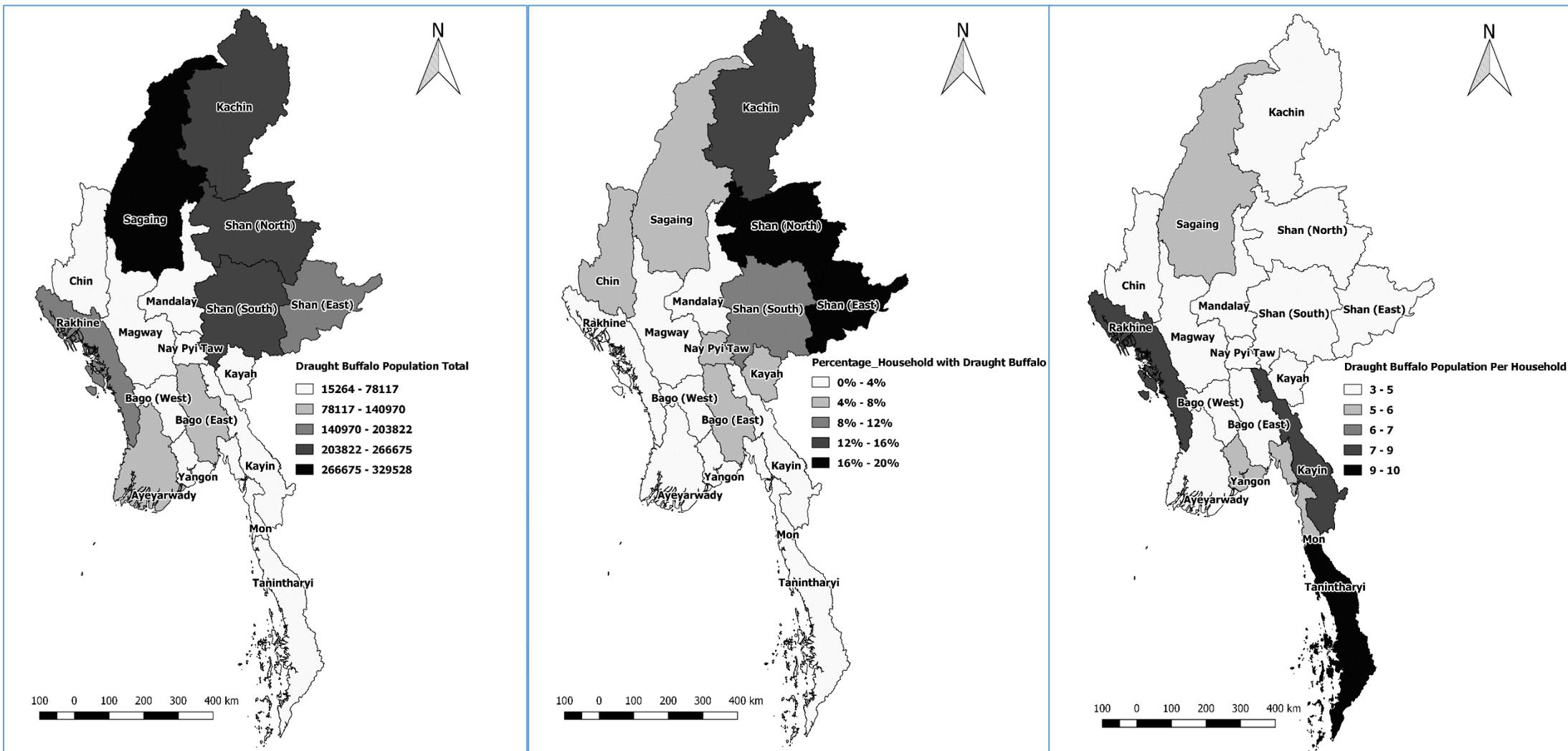


Figure A- 4 Dairy buffalo total population, percentage of holdings with dairy buffalo, and average number of head per holding by Region State

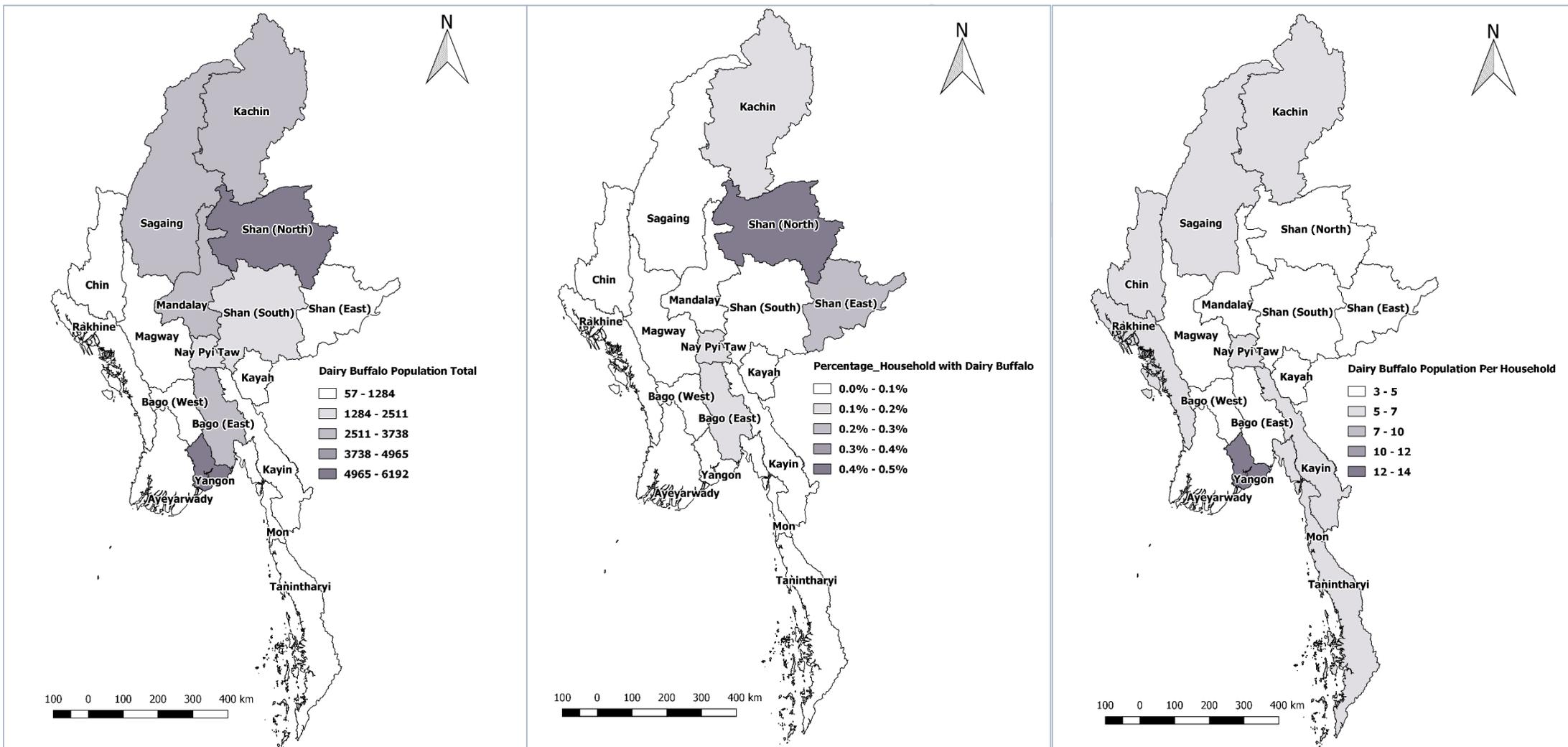


Figure A-5 Horses total population, percentage of holdings with horses, and average number of head per holding by Region State

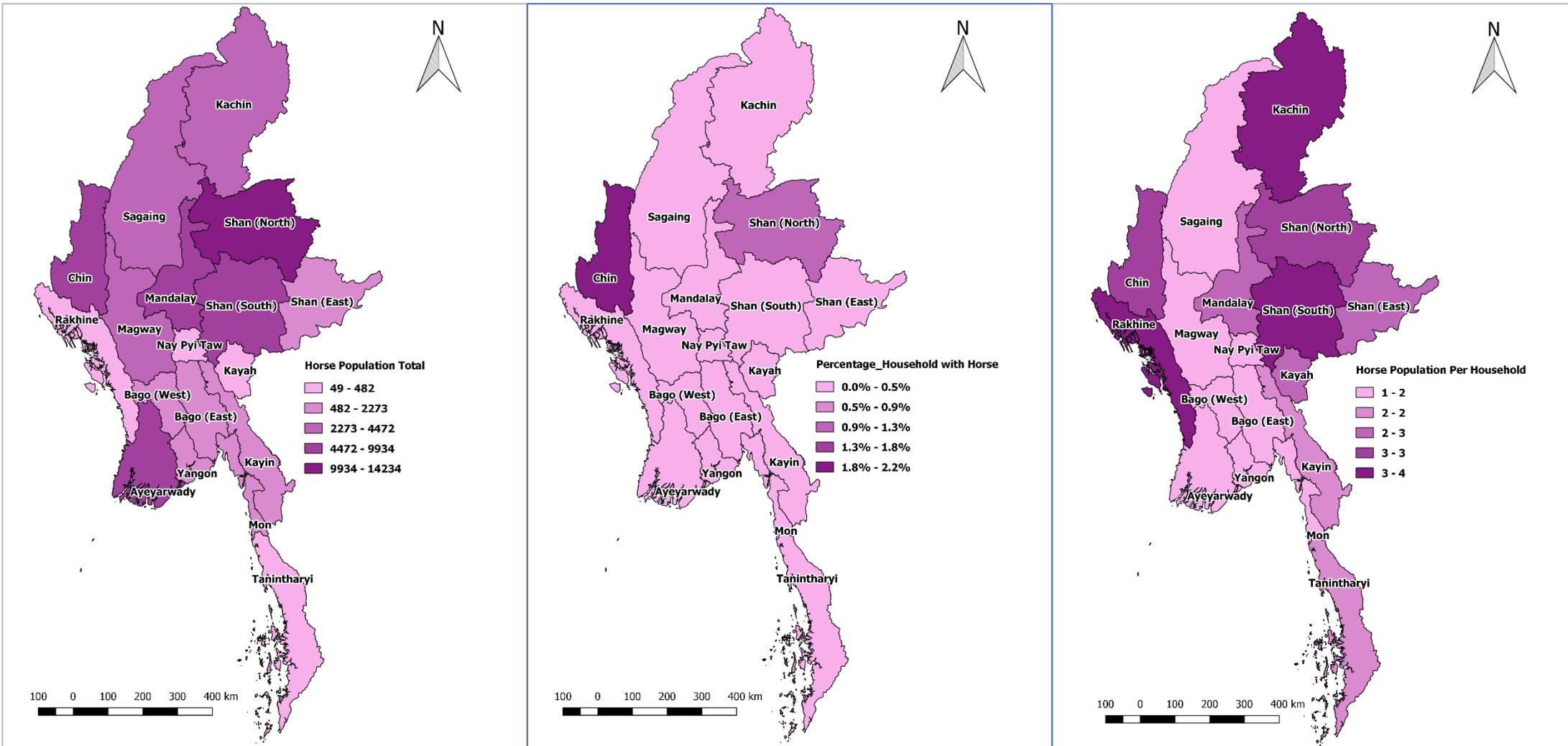


Figure A-6 Mythun total population, percentage of holdings with mythun, and average number of head per holding by Region State

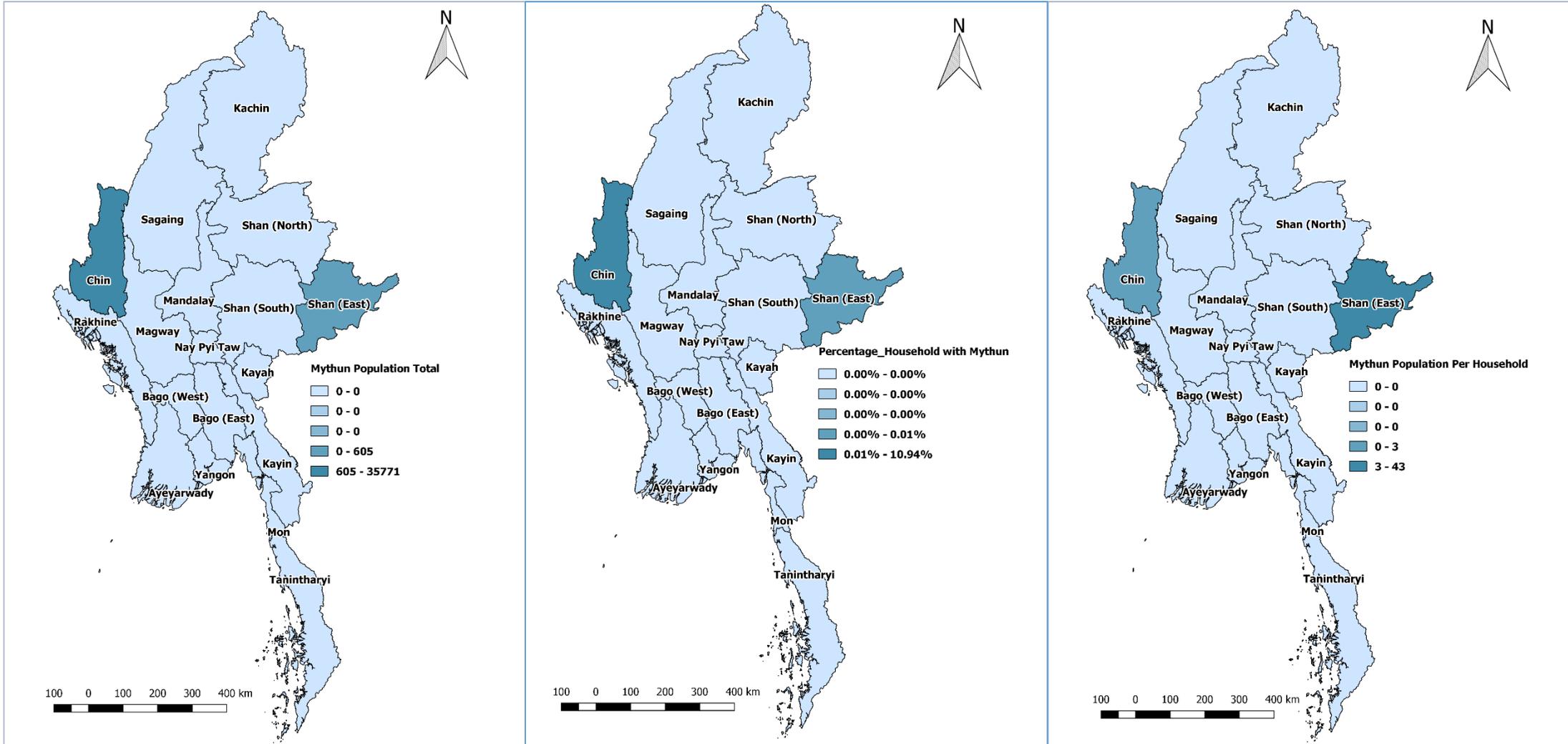


Figure A-7 Pigs total population, percentage of holdings with pigs, and average number of head per holding by Region State

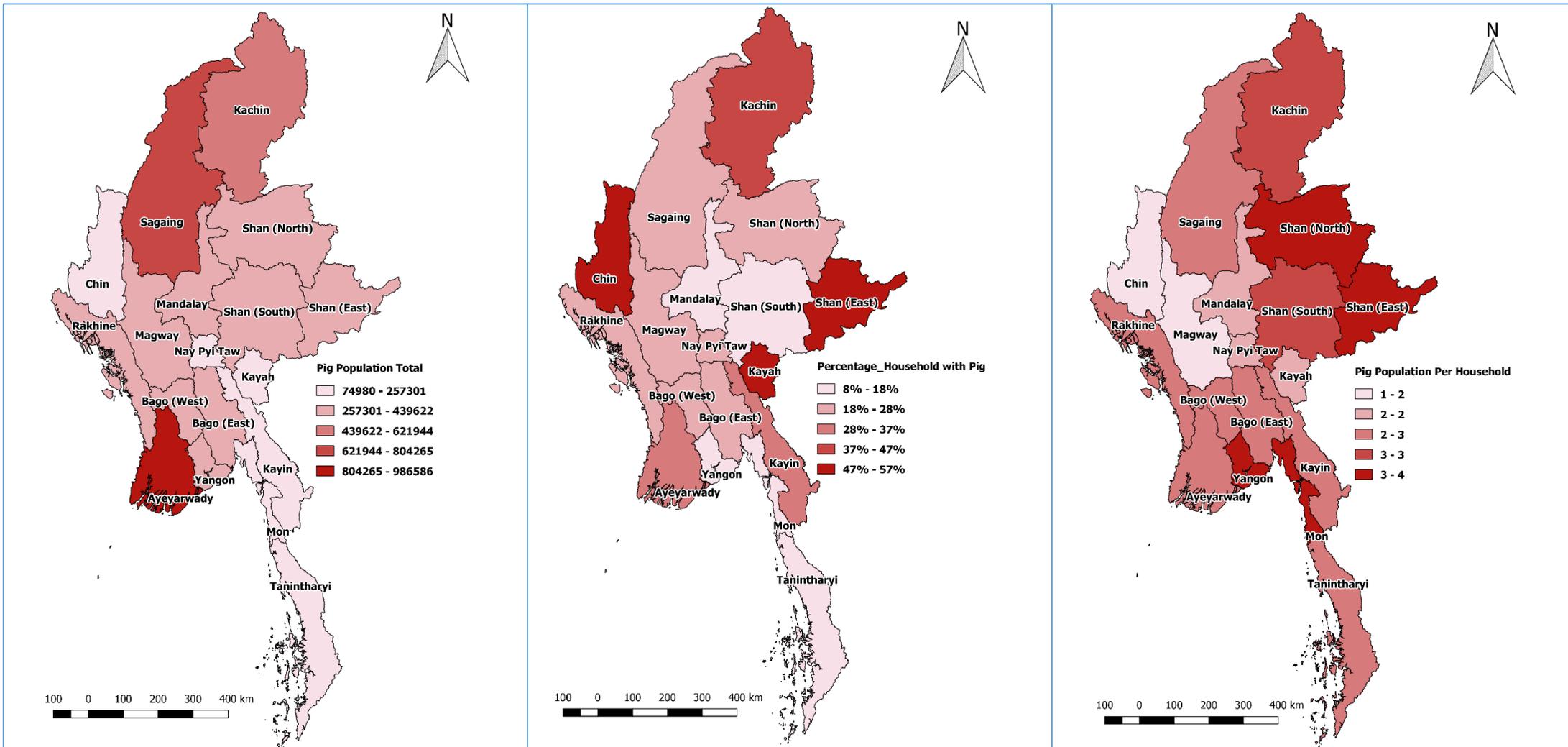


Figure A-8 Goats total population, percentage of holdings with goats, and average number of head per holding by Region State

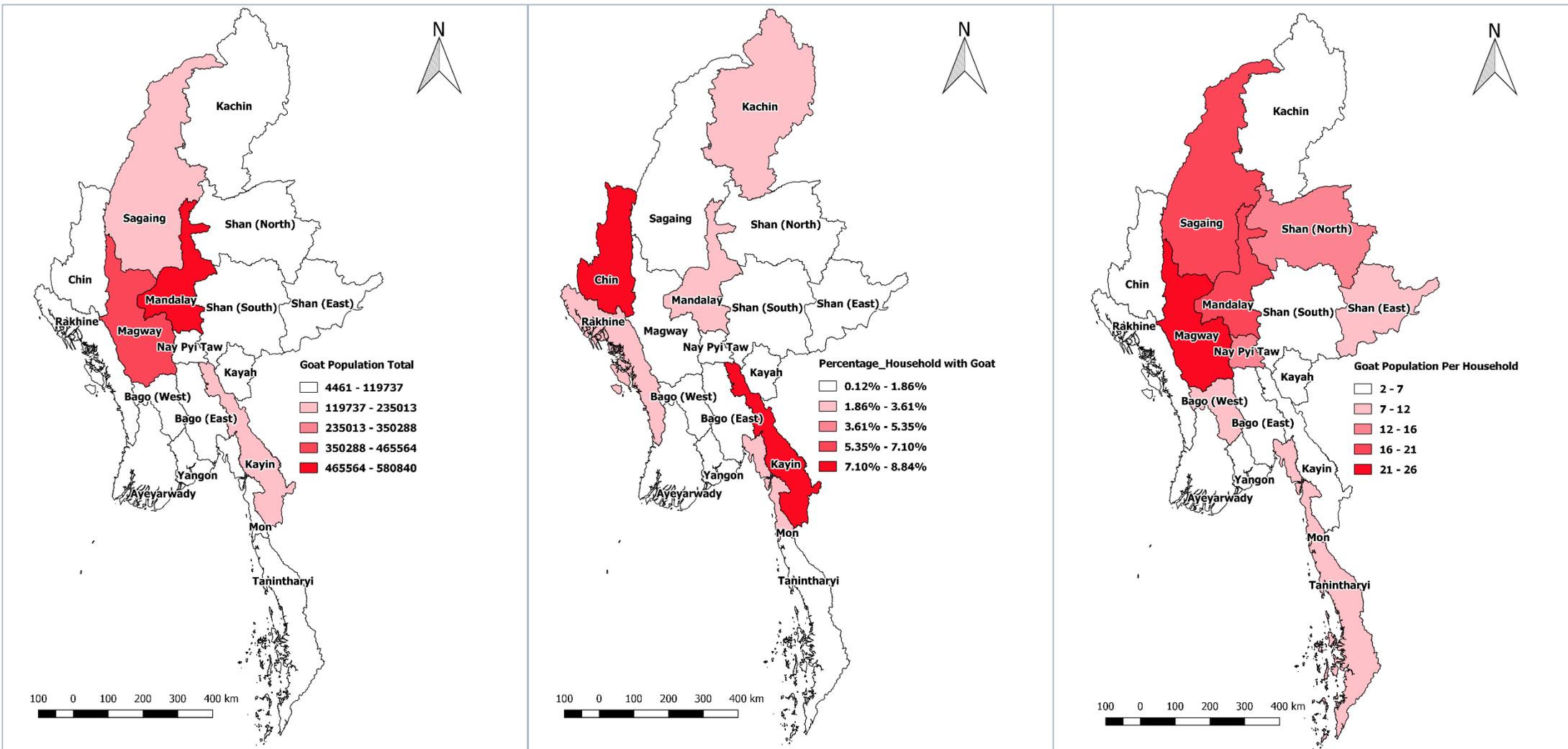
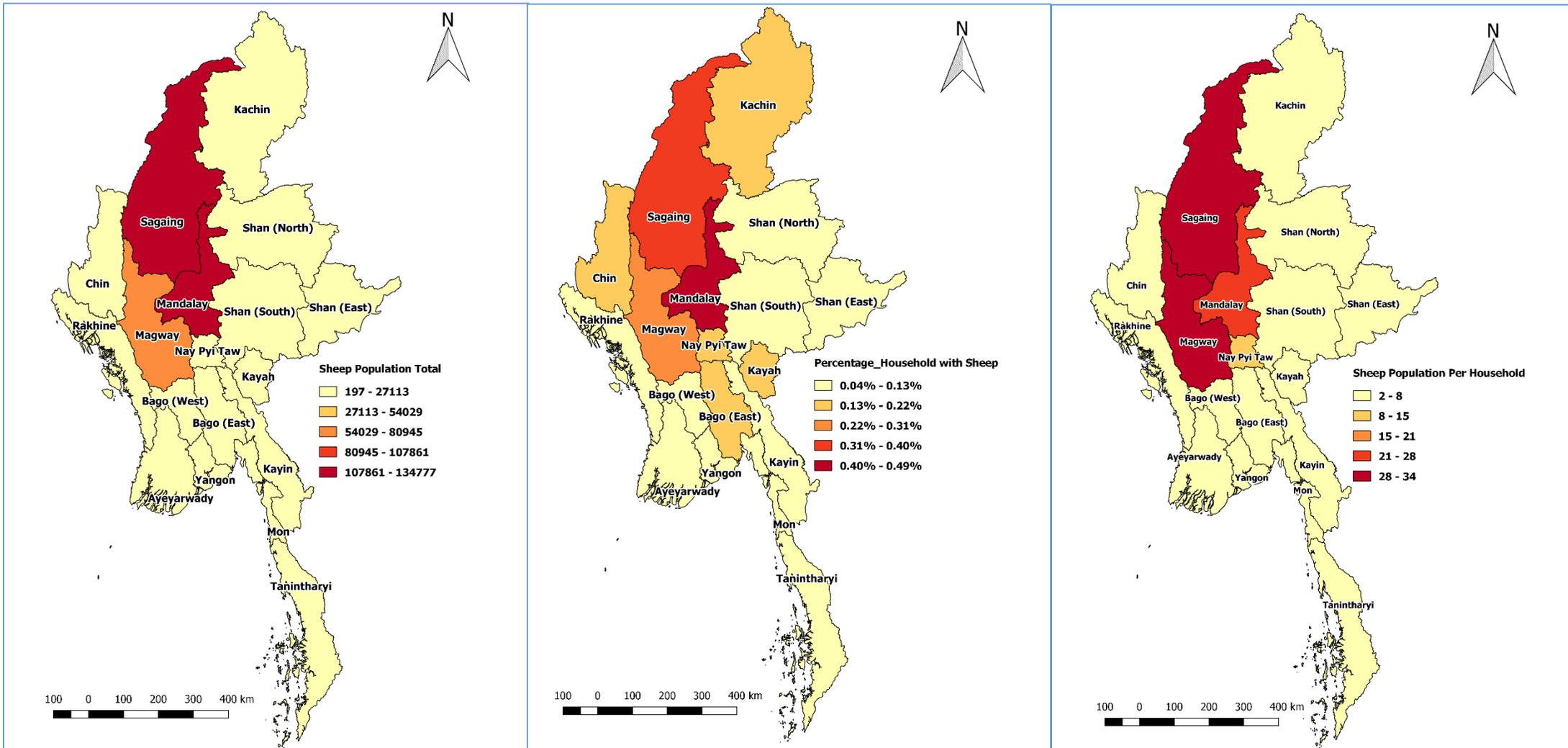


Figure A-9 Sheep total population, percentage of holdings with sheep, and average number of head per holding by Region State



1.

Figure A- 10 Dog total population, percentage of holdings with dogs, and average number of head per holding by Region State

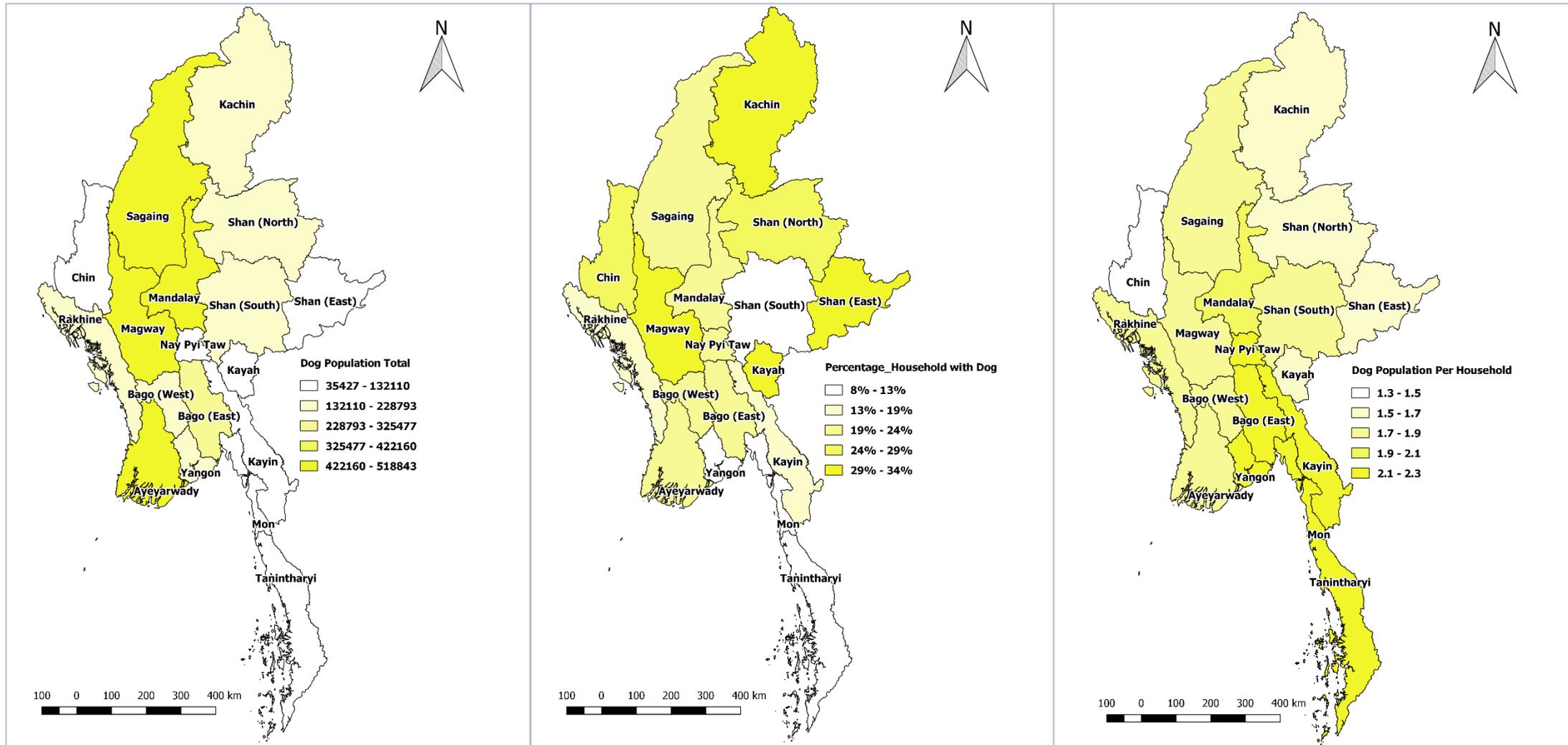


Figure A- 11 Native chicken total population, percentage of holdings with native chickens, and average number of head per holding by Region State

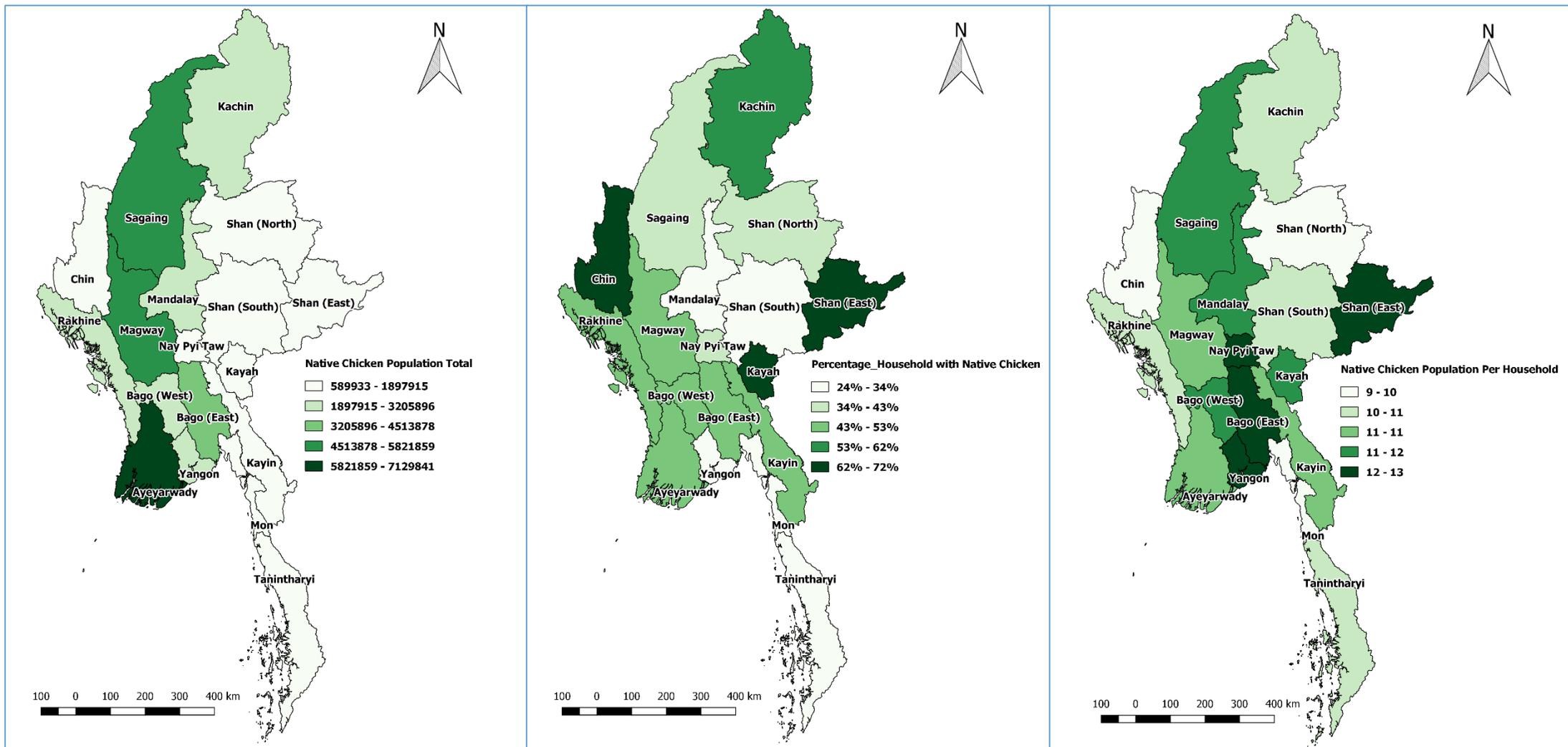


Figure A- 12 Chicken layer total population, percentage of holdings with chicken layers, and average number of head per holding by Region State

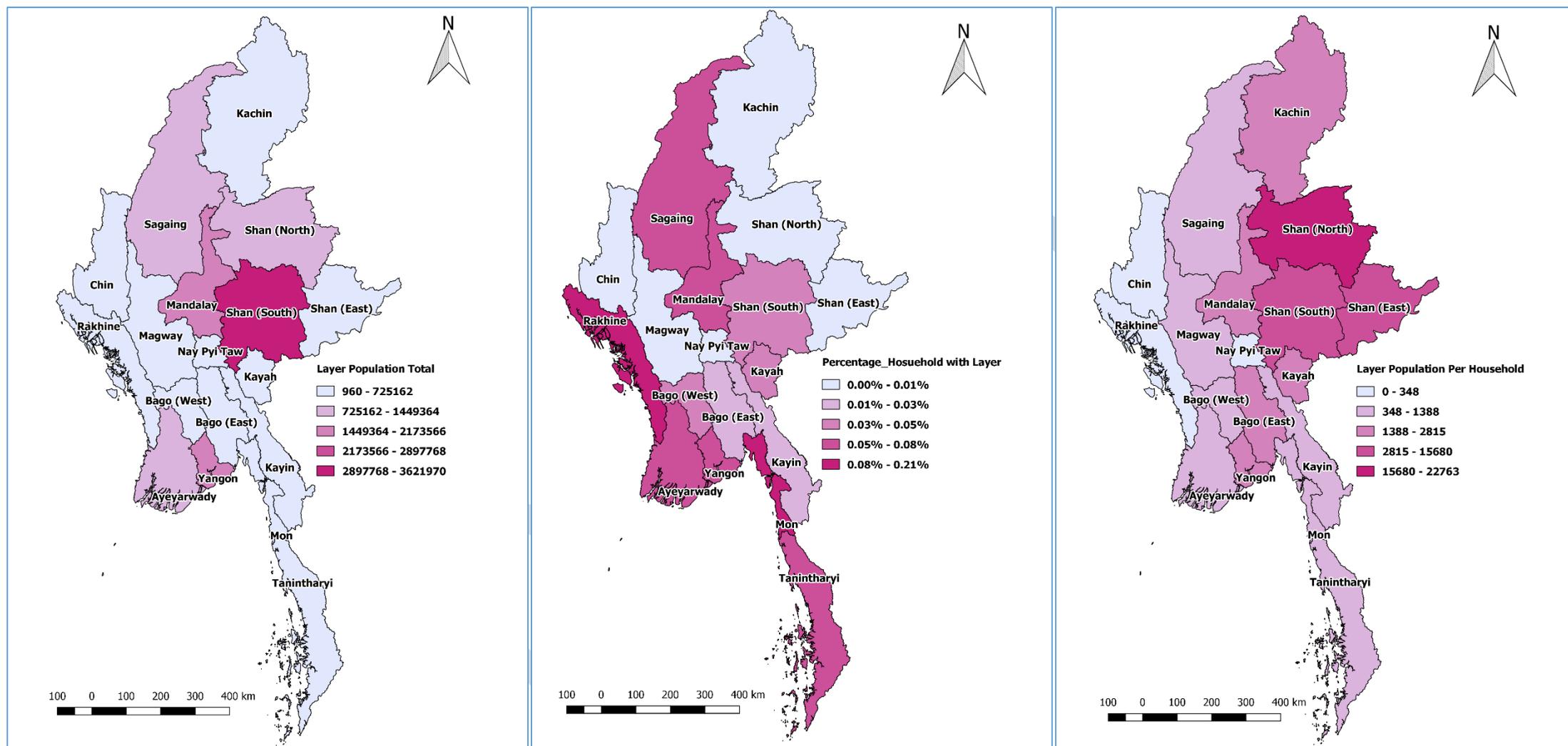


Figure A-13 Chicken broiler total population, percentage of holdings with chicken broilers, and average number of head per holding by Region State

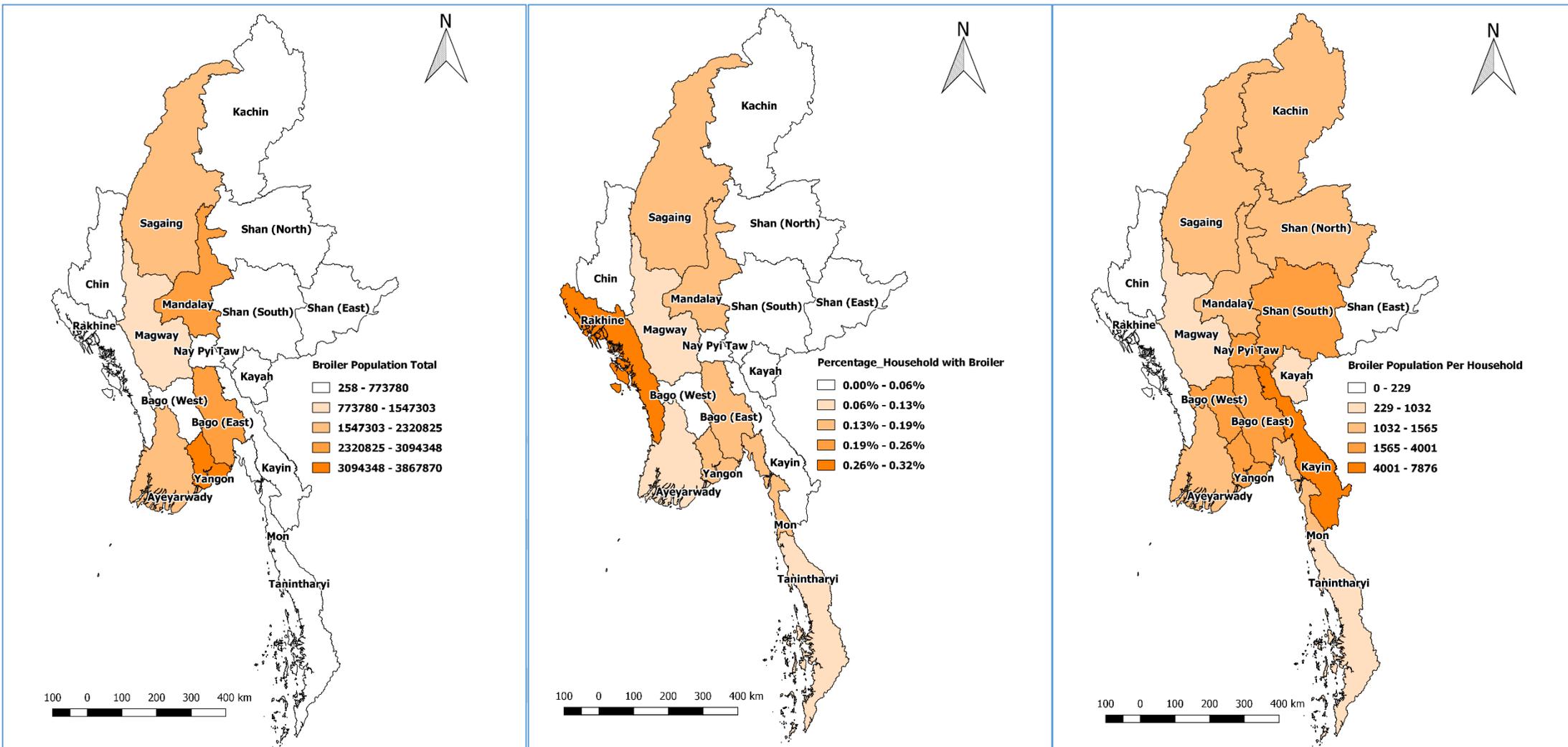


Figure A- 14 Duck layer total population, percentage of holdings with duck layers, and average number of head per holding by Region State

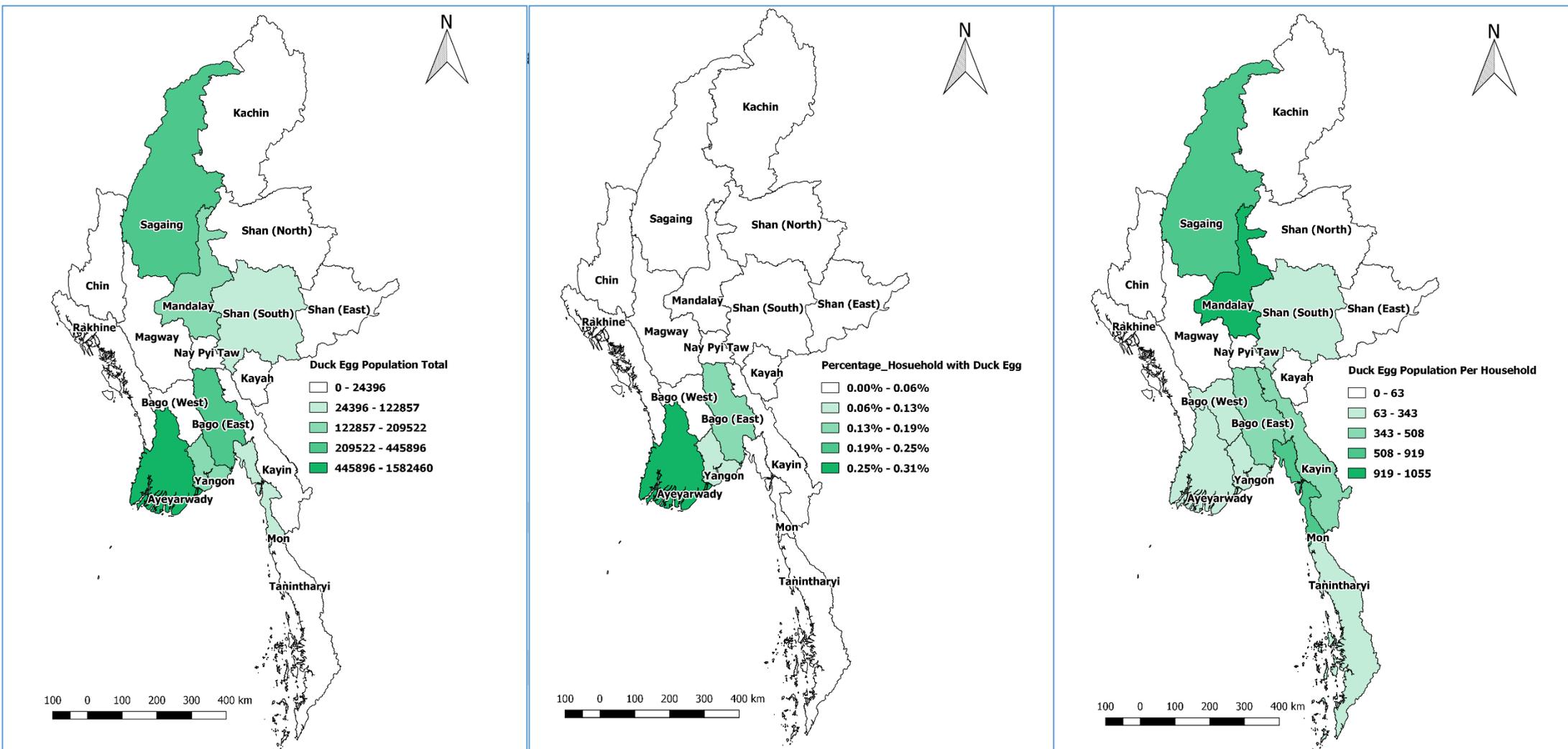


Figure A- 15 Duck meat total population, percentage of holdings with duck meat, and average number of head per holding by Region State

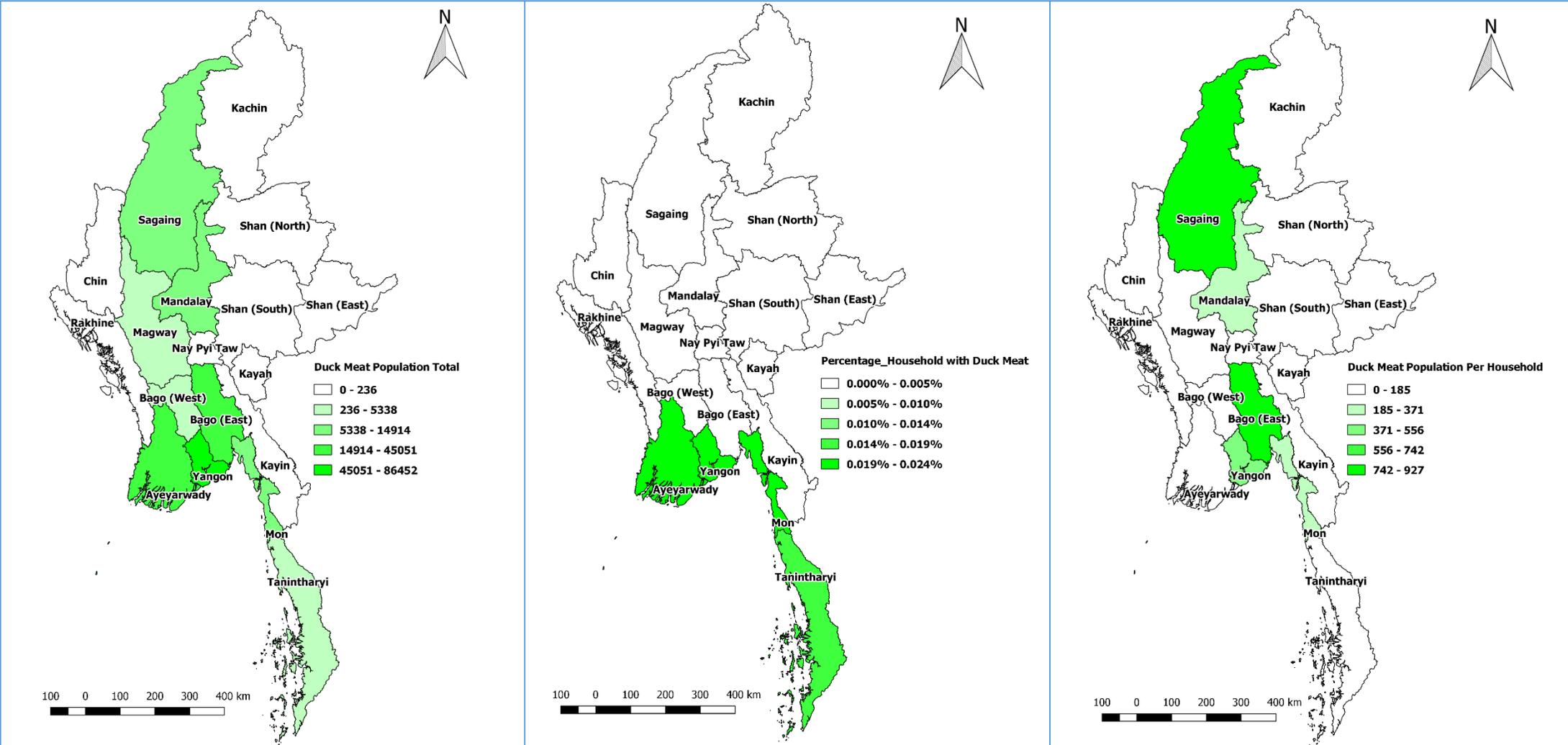


Figure A- 16 Quail total population, percentage of holdings with quail, and average number of head per holding by Region State

