7th Agricultural Census of Pakistan 2024

INTEGRATED DIGITAL COUNT

MAIN FINDINGS REPORT

Government of Pakistan
Ministry of Planning Development & Special Initiatives, Islamabad
PAKISTAN BUREAU OF STATISTICS
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7th AGRICULTURAL CENSUS 2024

Integrated Digital Count

زراعت شماری - بدلے قسمت ہماری

Government of Pakistan
Ministry of Planning Development and Special Initiatives
PAKISTAN BUREAU OF STATISTICS
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SPECIAL MESSAGE

Agriculture remains the backbone of Pakistan's economy, employing a significant share of the population and serving as a vital source of food security, livelihood, and export earnings. In this context, the 7th Agricultural Census 2024, conducted by the Pakistan Bureau of Statistics (PBS), marks a transformative step forward in evidence-based agricultural planning and policy-making.

This census holds special significance as it is the first-ever integrated digital census of agriculture in Pakistan's history—building on the success of the digital 7th Population and Housing Census 2023. Unlike previous rounds, which separately covered agricultural, livestock, and machinery censuses on paper, this integrated digital exercise combines all three domains. It provides comprehensive, timely, and geo-tagged data for use by policymakers, researchers, development partners, and the private sector.

The 7th Agricultural Census Report delivers rich insights into farm holdings, land tenure patterns, cropping practices, agricultural credit, irrigation methods, livestock ownership, and the use of modern machinery. Such data are critical to devising evidence-informed policies for raising productivity, enhancing climate resilience, increasing rural incomes, and aligning with our international commitments including the Sustainable Development Goals (SDGs).

Importantly, this census supports the broader development vision of the Government—URAAN Pakistan and 5 Es National Economic Transformation Plan, which aims to unleash the economic potential of all sectors through innovation, inclusion, and institutional reforms. Reliable and granular agricultural statistics are indispensable for transforming agriculture into a high-value, technology-driven, and sustainable enterprise.

Despite resource constraints, PBS—through strong collaboration with provincial governments—successfully completed this massive exercise across all regions, including Gilgit-Baltistan and Azad Jammu & Kashmir. I commend the dedication of the PBS team, field staff, and stakeholders who ensured the quality and timely execution of this national endeavor.

I am confident that the findings of this census will serve as a cornerstone for policy formulation, investment planning, and rural transformation, paving the way for a prosperous and food-secure Pakistan. I would particularly like to thank and appreciate the efforts of Dr. Naeem uz Zafar (SI), Chief Statistician, PBS, and Mr. Muhammad Sarwar Gondal, Member (SS/RM), for their unwavering commitment and invaluable contributions to this national initiative. Their leadership and hard work are instrumental in supporting the country's development through evidence-based planning.

Prof. Ahsan Iqbal
Federal Minister for Planning,
Development & Special Initiatives
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FOREWORD

Agricultural Census is one of the major activities of Pakistan Bureau of Statistics (PBS). So far, this organization has conducted Six Agricultural, Four Livestock and Five Agricultural Machinery Censuses. The current 7th Agricultural census activity is unique in the methodology as it is not only an integration of all three censuses but it has also been conducted digitally, making it first ever "Integrated digital count" of agriculture in the history of Pakistan after the success of 7th Population and Housing Census 2023. It serves agricultural planners, researchers and academia by providing detailed latest information about agricultural activities in Pakistan.

The report of 7th Agricultural Census provides latest information about agricultural farms, land utilization, tenure classification, cropping patterns, livestock population with age distribution, and usage of modern farming practices. Its other prominent/key features include up to date information about area under different crops, agriculture credit, size of orchards and various types of irrigation methods. The 7th census covered first time in the census history, the new technologies adopted by the farming community like greenhouse technology and tunnel farming practices along with use of modern irrigation systems including sprinkler and drip irrigation systems. This digital data is very useful for economy boosting agricultural productivity, alleviating poverty, enhancing agricultural exports, ensuring food security and achieving the agriculture related Sustainable Development Goals (SDGs).

Pakistan Bureau of Statistics (PBS) collaborated with provincial administrations to ensure effective training of field staff, field operations, monitoring and supervision of agricultural census activities. PBS ensured the timely completion of this gigantic exercise throughout the country including Gilgit Baltistan and Azad State of Jammu & Kashmir in spite of meagre resources, manpower, material and financial resources constraints. This report provides useful information about agricultural structure covering various aspects of the agriculture sector which provides a benchmark not only for future planning but also for comparison with the past performance.

It is expected that the census result presented in this report, will be put up for effective use by agricultural policy makers as well as planners for designing data-driven policies for the development of agriculture sector in particular and for bringing progress and prosperity in Pakistan in general.

Awais Manzur Sumra
Secretary PDSI

PREFACE

Pakistan Bureau of Statistics (PBS) conducted the 7th Agricultural Census 2024 (Integrated Digital Count) through an integrated approach, combining data on Agricultural Lands, Crops, Livestock, and Agricultural Machinery. The previous efforts of The Agricultural Census Organization (defunct) included the 6th Agricultural Census in 2010, the 4th Livestock Census in 2006, and the 5th Agricultural Machinery Census in 2004, all focused on collecting detailed insights of the farming practices for agricultural lands, livestock formations, agricultural machinery to asses the modern agricultural practices by the farming community of Pakistan. Building on the foundation of earlier censuses, the latest initiative employs advanced technologies for data collection. The 7th Agricultural Census 2024 was completed in two phases. First phase was completed in September-November 2024 in cold and snowbound areas and the 2nd phase was completed in January-February 2025 in the rest of country.

The census aims to provide detailed insights into Pakistan's agrarian structure, cropping patterns, livestock demographics, and mechanization trends, which are crucial for addressing challenges such as food security, climate resilience, and rural development particularly with reference to the 2030 agenda of SDGs..

This report covers six chapters, where the first three belong to the introduction, new digital aspects, and the sample design of the 7th Agricultural Census 2024, while the rest of three chapters are dedicated to key indicators about agriculture, livestock, and agricultural machinery.

The 7th Agricultural Census 2024 embraced advanced digital technologies to streamline processes and enhance the reliability of outcomes. Features included tablet-based data collection, geo-tagging of agricultural households, real-time dashboards for monitoring, digital maps, and task management systems. Publicity campaigns utilized social media, while a hotline complaint management system ensured transparency. Various software modules, like the GIS-based dashboard monitoring system and Computer-Assisted Personal Interviewing (CAPI) applications were developed to improve efficiency, accuracy and validity. PBS leveraged its upgraded in-house data center to support operations, reducing costs and ensuring round-the-clock IT support and data security.

The Pakistan Bureau of Statistics has collaborated with provincial administrations to ensure effective field operations, monitoring, and supervision. Extensive training programs were conducted for enumerators and supervisors, ensuring high-quality data collection Which was not possible without dedication and devotion.

I would like to extend my profound appreciation to my entire team, including provincial governments as well as Gilgit Baltistan and Azad State of Jammu & Kashmir administrations, for their remarkable contributions and unwavering commitment throughout this journey. I am especially grateful to Mr. Muhammad Sarwar Gondal (SI), Member (SS/RM), whose exceptional leadership and generous dedication have been pivotal in steering this project towards a groundbreaking new dimension in digital census.

I hope that the 7th Agricultural Census will leave a significant mark on national progress and prosperity by facilitating data-driven policy making and implementation in the future.

DR. NAEEM UZ ZAFAR (ستارۂ امتیاز)
Chief Statistician

DIGITAL CENSUS
A Success Story!

Pakistan Bureau of Statistics (PBS) successfully conducted the 7th Population and Housing Census 2023 (First Ever Digital Count) and achieved a historic milestone by making it South Asia's 1st ever digital census. Through this groundbreaking initiative, PBS gathered demographic data for more than 241 million individuals and geo-tagged 40 million structures, ensuring accurate and comprehensive insights to support data-driven policymaking and development planning.

Following the Population Census 2023, PBS recognized the urgent need to conduct an agricultural census to address food security challenges and guide data-centric policies for its growing population. Agriculture, being the 2nd largest sector in the national economy, contributes around 24% to its GDP and employs about 40% of its labor force, therefore, there was a dire need to conduct an agricultural census.

PBS conducted the 7th Agricultural Census 2024 (Integrated Digital Count) across Pakistan, including GB and AJK. By recognizing agriculture's crucial contribution to economic growth, PBS digitized the census to deliver timely, accurate, and reliable data, establishing a strong foundation for effective agricultural planning and evidence-based policy formulation.

The digital census was conducted on international standards by using tablet-based technology for real-time monitoring through GIS dashboards and advanced analytics to identify trends while enhancing stakeholders' engagement. It sets a foundation for future agriculture surveys, emphasizing inclusivity, accessibility, and efficiency. PBS developed a comprehensive two-tier training program, training of Census Master Trainers (CMTs) from PBS along with stakeholders' Agriculture Extension, Crop Reporting Service, Livestock & Dairy Development Department, Education and Revenue Department, who then trained district-level Enumeration and supervisory staffs.

This comprehensive initiative digitized the entire process, introducing systems like HR and Task Assignment Web Portal, Inventory Management Applications, Complaint Management System, CATI Support Module, and Monitoring dashboards at the provincial and district levels. Equipped with tablet devices and advanced software for data collection, the project revolutionized census operations. This Digital Census project has been a remarkable success for PBS in particular and for country in general.

I would especially thanks to the exceptional efforts of Mr. Ayazuddin, Member (Census & Surveys), Dr. Amjad Javaid Sandhu, Director General (Admn/ ACPMU), Ms. Rabia Awan, Deputy Director General (CPMU), Directors and their teams. They played a pivotal role in designing and implementing the Integrated Digital 7th Agricultural Census 2024. The unwavering commitment and collaboration of the Support Services, DP Centre, GIS staff, Field Services/ Operations, and Subject Matter teams ensured the project's success despite challenging circumstances. Their dedication is truly commendable.

I am genuinely hopeful that this groundbreaking initiative will transform agriculture policymaking and implementation in the years to come.

Muhammad Sarwar Gondal (ستارۂ امتیاز)
Member SS/RM

Core Team of PBS for 7th Agricultural Census 2024
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4	Ms. Rabia Awan	DDG(PCS/PSLM)

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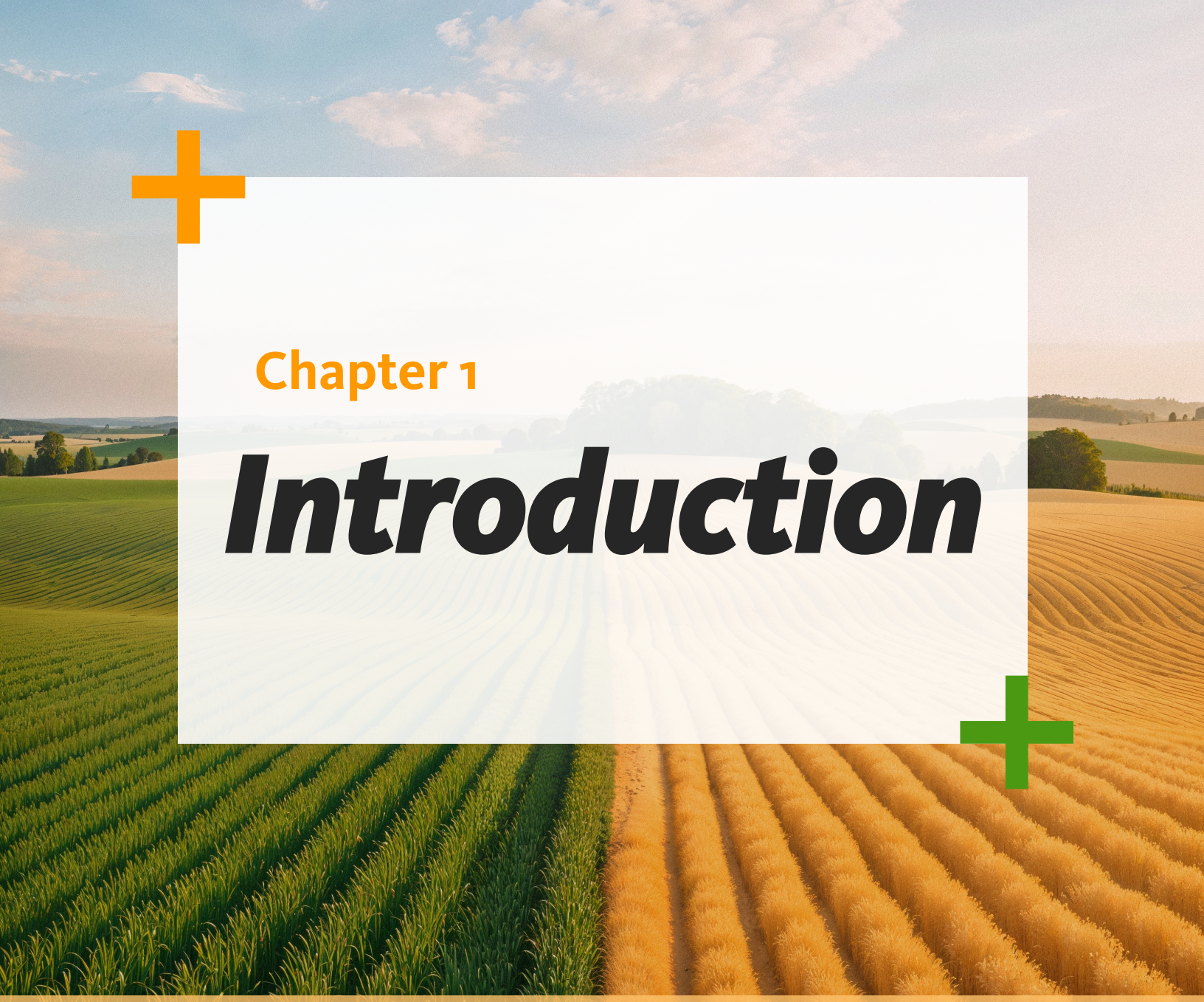


Chapter 1

Introduction

1. INTRODUCTION

1.1 Background

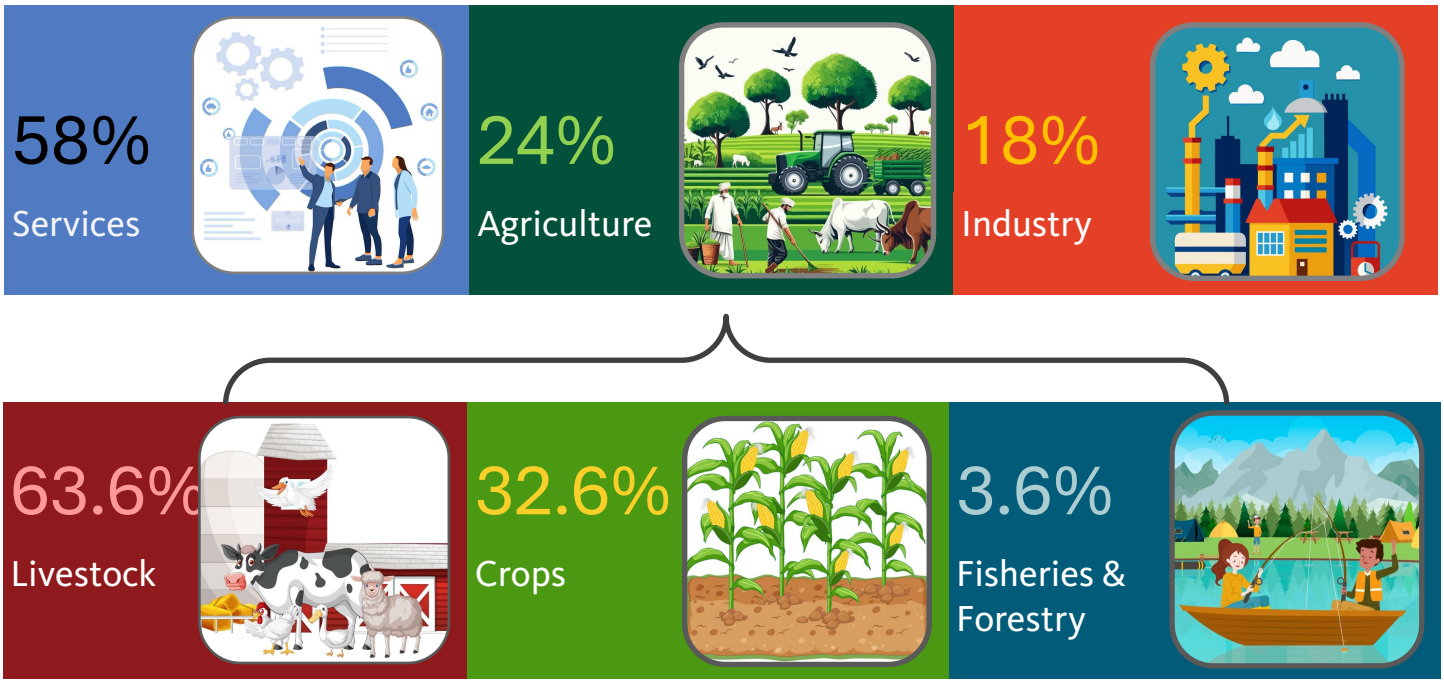
Agriculture is the backbone of Pakistan's economy, contributing significantly to the country's GDP, employment, and food security. It provides livelihood to a large portion of the population, particularly in rural areas, where farming remains the primary source of income. The sector plays a crucial role in ensuring national food supply, supporting agro-based industries, and contributing to exports. Given its economic importance, accurate data collection and analysis are essential to address challenges such as land distribution, farming efficiency, livestock contribution climate change impacts, and resource management.

To facilitate informed decision-making, the Pakistan Bureau of Statistics (PBS) conducts periodic agricultural censuses. These censuses are crucial for assessing landholding patterns, farming practices, and livestock resources, providing valuable insights for policymakers, researchers, and stakeholders. The data collected helps in formulating agricultural policies, allocating resources efficiently, and enhancing rural development strategies. Regular censuses ensure that the government and private sector have up-to-date information to address emerging agricultural challenges for improvement in the production productivity.

The Agricultural Census 2024 marks the 7th edition of this national effort, with the primary objective of collecting reliable and comprehensive agricultural data. This census aims to provide updated statistics to support policy formulation, economic planning, and sustainable agricultural growth. By analyzing current trends, challenges, and opportunities, the census will help to shape policies that drive agricultural innovation, food security, and rural prosperity in Pakistan. To ensure all this, we may have a look into the role of agriculture in the economy of Pakistan.

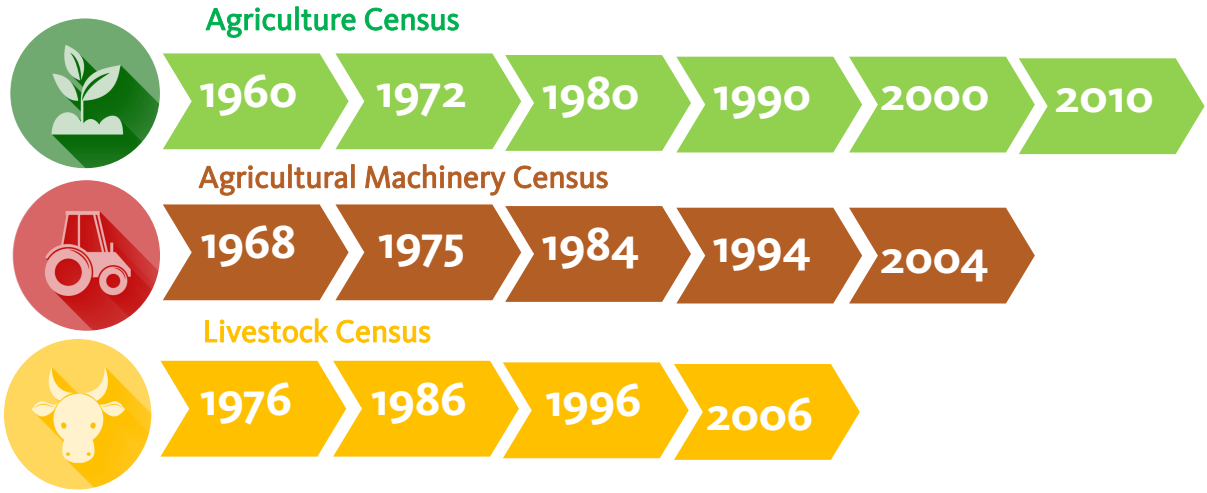
1.1.1 Agriculture's Role in Pakistan's Economy

Agriculture remains a key sector of Pakistan's economy, contributing significantly to GDP. Approximately livelihood of 40 million population directly linked with Agriculture & 37.4% of Labour Force employed in Agriculture Sector.



1.1.2 Periodicity of Agricultural Censuses

To support evidence-based policy making and strategic agricultural planning, the Pakistan Bureau of Statistics (PBS) conducts periodic agricultural related censuses to assess landholding patterns, farming practices, and livestock resources.



1.2 Objectives

The Agricultural Census 2024 aims to provide a comprehensive understanding of Pakistan's agricultural landscape by gathering accurate and up-to-date data on various aspects of the agrarian structure. It provides baseline essential data for effective policymaking, resource allocation, and the development of strategies to enhance agricultural productivity and sustainability. This census will help to assess current farming practices, livestock populations, farm mechanization, resource utilization, and market trends, enabling the government and stakeholders to address key challenges and identify opportunities for growth. By collecting detailed information on landholding practices, cropping patterns, livestock trends and technological adoption, the census will serve as a foundation for evidence-based decision-making in the agricultural sector. Main objectives and scope of integrated 7th Agricultural Census are:

Data for Food Security and Better Livelihood

To furnish information about agrarian structure of the country for baseline data for food security and better livelihood of the population

Food and Cash Crop Estimation

To provide estimates for food and cash crops

Livestock Estimation

To provide estimates of livestock population

Trade Insights

To provide area-wise statistics on milk and meat production for efficient trade planning

Modern Farming Practices

Modern farming practices to enhance the productivity

1.2.1 Scope of 7th Agricultural Census

The scope of the 7th Agricultural Census includes all the relevant topics with some restrictions as mentioned here.

- *The 7th Agricultural Census only focuses on agricultural households involved in operating agricultural land, rearing livestock, and having agricultural machinery, as compared with previous censuses wherein cluster sampling approach was adopted including agricultural and nonagricultural households. The detailed interviews of only agricultural households conducted after segregating them during listing operation adopting stratification approach.*
- *The scope includes, agricultural farm(s) / holding (s) held and or operated by the Government or by private household(s), individually or collectively or under corporate arrangement at the time of census enumeration. Consequently, the undistributed government lands other than government farms, undistributed portion of the lands resumed by the Government under land reforms, built up areas, land under roads, rails,*

ravines, rivers, canals, government forests, parks, lakes, water bodies, shallow lands, hills and mountains, etc. falling under the category of non -farm area, are outside the scope of the census.

- *Livestock count is restricted to the head count of cattle, buffaloes, sheep, goats and camels by age, sex and breed distribution.*
- *Whereas information about the horses, mules and asses have been collected by age distribution. However only number of domestic poultry also collected in the census.*
- *Data on domestic slaughtering also collected. The data on number of animals slaughtered inside the recognized slaughter houses collected through a specially designed survey.*
- *In addition, information about the total production of milk per day by the cows, Dzomo, buffaloes, goats (milking for human consumption) and female camels also collected.*
- *Covered all public and private tractors, bulldozers, combine harvesters used wholly or partly for agricultural purposes. Tractors / bulldozers maintained and used entirely for non-agricultural purposes are not covered in this census. The information about the farm implements normally pulled manually or by animals or motivated with tractor or some other source of energy also covered in the census.*
- *Covered all public and private tube wells, wells with pump, lift pumps, submersible pumps used for irrigation purposes. These machines used for drinking water are outside the scope of this census.*

The 7th Agricultural Census, originally after merger of past agricultural, livestock, and agricultural machinery censuses into one, the 7th Agricultural Census was due in 2015, but was delayed due to multiple critical national statistical priorities. The immediate need to conduct the 6th Population and Housing Census in 2017 took precedence, followed by the necessity to first carry out the Mouza Census held in 2020, which serves as the foundational frame for sampling in agricultural census as well as rural statistics. This was essential for updating and revamping the sampling frame to enable a more efficient and integrated approach for the upcoming census. The delay was further extended by the implementation of the 7th Population and Housing Census in 2023, which was Pakistan's first -ever digital census. These sequential activities, although necessary, pushed the Agricultural Census timeline forward, eventually culminating in the integrated and digital 7th Agricultural Census 2024.

During the Population and Housing Census, the Agricultural Census questionnaire was finalized through a rigorous consultative process led by the Technical Committee, which held multiple sessions to ensure accuracy, relevance, and alignment with national needs. A key milestone in this process was the Technical Committee Meeting held on July 6, 2021, where the structure and content of the questionnaire were finalized and process remained continue till 2023 and several meetings held for finalization of questionnaire.

1.3 Methodology

The Agricultural Census 2024 employs a robust and modernized methodology to ensure the accuracy, reliability, and efficiency of data collection. A hybrid approach is adopted, combining complete enumeration in key areas with sample-based data collection to maximize coverage while optimizing resources. This methodology ensures a comprehensive yet cost-effective data collection process.

To enhance the credibility of the census, extensive stakeholder engagement and consultations were conducted with provincial governments, agricultural experts, and livestock agencies. Their input helped to refine census methodologies, ensuring that the data collected is relevant, comprehensive, and aligned with national and regional agricultural needs.

A key feature of this census is the integration of advanced technology, including tablet-based data collection, geo-tagging, and real-time monitoring. These digital tools improve data accuracy, reduce errors, and allow for efficient processing and analysis. Moreover, stringent quality control measures are in place, including automated validation checks, real-time supervision, and independent verification teams, to maintain data integrity and reliability throughout the census process.

Hybrid Data Collection Approach

The census adopts a combination of complete and sample enumeration techniques for accuracy and efficiency.

Stakeholder Engagement & Consultation

Collaboration with provincial governments, agricultural experts, and live-stock agencies to refine census methodologies.

Technology Integration

Implementing tablet-based data collection, geo-tagging, and real-time monitoring for data accuracy.

Quality Control Measures

Data validation through automated checks, real-time supervision, and independent verification teams.

1.4 Key Features

The key features of the Agricultural Census 2024 ensure accurate, efficient, and stakeholder-driven data collection to provide benchmark for effective policymaking. Integrating the Mouza Census 2020 and process reengineering National Certainty Holdings (NCH) data enhanced land and farm enumeration accuracy. Stakeholders reviewed questionnaire ensures comprehensive data collection, while advanced digital tools like GPS mapping and automated validation, improved data reliability and efficiency. Nationwide training programs equipped field staff for standardized data collection, and public engagement initiatives, including helplines and a grievances redressal management system, enhance transparency. These features make the census a reliable foundation for informed agricultural planning and development.

Developed Agricultural Census Questionnaires in consultation with agricultural experts, policymakers, and international standards.

Selection of Sample on the basis of Mouza Census 2020 and Population and Housing Census 2023

Utilizing GPS-based mapping, automated validation, and digital dashboards for enhanced accuracy.

Conducting comprehensive training for enumerators, supervisors, and field staff to ensure data consistency.

Public Awareness and Complaint Management Establishing helplines, call centers, and a grievance management system for improved transparency.

1.5 Comparative Studies

The comparative study conducted for the 7th Agricultural Census examined key methodological aspects to ensure accuracy and efficiency while maintaining alignment with global best practices. The study assessed various census modules, sampling methods, questionnaire designs, and data collection techniques. It ensured that the overall census methodology and questionnaires adhered to international standards, allowing for reliable data collection and analysis. The adoption of modern data collection techniques was a critical focus, facilitating the transition from traditional paper-based methods to digital tools while improving validation mechanisms.

Additionally, the study provided insights from both developed and regional countries to optimize sampling methods and refine the structure of the questionnaire. In doing so, it helped to identify best practices that could be applied to enhance the overall census framework. The comparative analysis also played a crucial role in strengthening stakeholders collaboration at federal, provincial, and local levels, ensuring the smooth implementation of the census and the credibility of the collected data.

1.5.1 Questionnaire Designing

A crucial part of the comparative study was the evaluation of main questionnaire design and standardization across different census modules. The study emphasized aligning the questionnaire with the best international practices to ensure data comparability and consistency. Developed countries have refined their questionnaire frameworks to include

	Land	Irrigation and Water Management	Crops	Livestock	Agricultural Practices	Agricultural Services	Demography and social Characteristics	Farm Labour	Household Food Security	Aqua-culture	Farm Forest	Management of the Holding
Pakistan	✓	✓	✓	✓	✓	✓	✓	✓	×	×	✓	×
Bangladesh	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×
China	✓	✓	✓	✓	✓	×	✓	✓	×	✓	✓	×
India	✓	✓	✓	✓	✓	×	✓	×	×	×	×	×
Indonesia	✓	✓	✓	✓	✓	×	✓	✓	✓	✓	✓	✓
Iran	✓	✓	✓	✓	✓	×	✓	×	×	✓	×	×
Nepal	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×
Sri Lanka	✓	✓	✓	✓	✓	×	✓	✓	✓	✓	✓	×
Russia	✓	✓	✓	✓	✓	×	✓	✓	×	✓	×	×

detailed farm structure data, production trends, and sustainability metrics. Regional countries, while following similar frameworks, often include additional modules tailored to local agricultural conditions, such as smallholder farming challenges and climatic impacts. The 7th Agricultural Census questionnaire was designed to incorporate lessons from both developed and regional models, ensuring it captured comprehensive, reliable, and policy-relevant data.

1.5.2 Evaluation of Sampling Methods

The comparative study examined different sampling techniques to determine the most effective approach for the 7th Agricultural Census. A key aspect of the evaluation was the comparison between complete enumeration and sample enumeration. Complete enumeration ensures comprehensive data collection by covering all agricultural holdings, but it requires significant time and resources. In contrast, sample enumeration offers a more cost-effective and efficient method by selecting a representative subset of agricultural holdings, allowing for the extrapolation of results to a broader population. The study assessed how developed and regional countries balance these approaches to optimize resource allocation while maintaining data reliability.

	Country	Complete Enumeration	Sample Enumeration
	China (2006)	✓	×
	Iran (2014)	✓	×
	Indonesia (2013)	✓	✓
	India (2010-11)	✓	✓
	Mongolia (2011)	✓	✓
	Nepal (2011-12)	×	✓
	Pakistan (2010)	✓	✓
	Bangladesh (2008)	✓	✓
	Sri Lanka (2013-14)	✓	✓

1.5.3 Computer-Assisted Personal Interviewing (CAPI)

The study also evaluated the integration of digital tools such as Computer-Assisted Personal Interviewing (CAPI) into the census process. In developed countries such as the USA, Canada, Australia, and the UK, CAPI is widely adopted due to its ability to enable real-time data validation, reduce errors, and integrate with satellite-based monitoring. These benefits significantly improve data accuracy and efficiency. Regional countries, such as India and Bangladesh, employ a hybrid approach combining CAPI with traditional Paper and Pencil Interviewing (PAPI) to ensure coverage in areas with limited digital access. Meanwhile, China and Turkey use Computer-Assisted Telephone Interviewing (CATI) as an additional verification mechanism. The findings underscored the importance of adopting CAPI while maintaining flexibility for hybrid models to address infrastructure constraints in various regions.

1.6 Stakeholders Consultation

Accurate and comprehensive agricultural data is vital for evidence-based policymaking, food security planning, and sustainable development. Recognizing this, extensive stakeholders consultations were conducted to ensure the successful execution of the 7th Agricultural Census 2024. These engagements played a crucial role in aligning methodological approaches, refining census strategies, and preparing field staff for data collection. The collaboration of federal, provincial, and district-level stakeholders ensured the smooth implementation of the census and enhanced data reliability.

The involvement of key stakeholders was essential in shaping the design and execution of the census. These consultations facilitated inclusive decision-making by engaging government institutions, agricultural experts, researchers, and policymakers. Their input helped in refining the methodology, ensuring that the census captured all critical aspects of the agricultural sector. Moreover, stakeholders involvement played a pivotal role in logistical coordination at multiple administrative levels, ensuring seamless execution. The consultations also strengthened the ownership and commitment of various agencies, reducing implementation challenges and enhancing cooperation across different governmental tiers.

1.6.1 Consultative Meeting with Senior Members Board of Revenue (SMBRs) – October 4, 2019

A high-level consultative meeting was held with the Provincial Senior Members Board of Revenue (SMBRs) to discuss the integration of the Mouza Census framework with the 7th Agricultural Census 2024. The discussions focused on legal and administrative guidelines required for census operations. The outcome of this meeting was the establishment of a well-defined framework that ensured legal clarity and streamlined census execution.

Consultative Meeting with Provincial Senior Members Board of Revenue (SMBRs) – October 4, 2019

1.6.2 Technical Committee Meetings for Questionnaire Finalization

Technical Committee Meetings for Questionnaire Finalization – July 6, 2021

Technical committee meetings were conducted to finalize the census indicators and questionnaire design. The objective was to standardize the questionnaire to include essential agricultural parameters such as landholding patterns, irrigation methods, livestock numbers, and modern farming techniques. These meetings ensured that the questionnaire adhered to international best practices, making it comprehensive, data-driven, and policy-relevant.

1.6.3 Meeting with Focal Persons from Federal Ministries & Provincial Departments

A strategic meeting with focal persons from federal ministries and provincial departments was conducted to discuss logistics, coordination mechanisms, and technology adoption for census implementation. This meeting facilitated inter-agency collaboration, ensuring that the census framework incorporated technological advancements such as digital data collection tools and real-time monitoring systems. The discussion led to improved efficiency in census operations, reducing delays and enhancing data validation processes.

1.6.4 Meeting with Provincial Government

The provincial Governments played a key role in coordinating provincial-level census operations. A series of meetings was held with provincial Governments in Feb-March 2024 to discuss the integration of provincial data collection efforts with the national framework. The meetings were focused on field deployment strategies, data-sharing protocols, and overall execution mechanisms. The outcome was a well-coordinated approach that ensured the alignment of provincial efforts with national census objectives, thereby enhancing the overall accuracy and coverage of the census.

Meeting with Focal Persons from Federal Ministries & Provincial Departments – December 20, 2023

Meeting with Punjab Government February 15, 2024

Meeting with AJ&K Government
March 7, 2024

Meeting with Balochistan Government
February 2, 2024

Meeting with KP Government
February 20, 2024

Meeting with Sindh Government
February 1, 2024

1.6.5 Meeting with District Governments

The Agricultural Census District meetings were convened in June 2024 in each district throughout the country to discuss the ongoing agricultural census activities, challenges faced in data collection, and strategies for improving the accuracy and efficiency of the census. The district meetings were conducted under the chair of Deputy Commissioners and brought together district heads of provincial departments viz agriculture, livestock, crop reporting service, education, revenue and local stakeholders.

Main objectives of the meetings were:

- To ensure number of required enumeration and supervisory provincial staffs.

- *To address challenges encountered during data collection.*
- *To ensure coordination between various stakeholders.*
- *To discuss technological advancements in census activities.*
- *To outline future steps for completing the census successfully.*
- *Strengthen community engagement through awareness programs.*
- *Improve training for enumerators on digital data collection methods.*
- *Enhance logistical support for data collection teams.*
- *Establish a helpdesk for resolving field-related issues promptly.*
- *Conduct periodic review meetings to track progress and address emerging challenges.*

The extensive stakeholder engagement process significantly contributed to the successful planning and execution of the 7th Agricultural Census. It facilitated cross-sector collaboration, promoted data standardization, and ensured that the census methodology was robust and internationally aligned. The engagement also improved logistical coordination, reducing operational bottlenecks and enhancing the efficiency of the data collection process. Ultimately, the consultations ensured that the census would generate high-quality, reliable, and policy-relevant data to support the development of the agricultural sector and inform strategic decision-making at both national and sub national levels.

1.7 Sensitization Workshops

Sensitization Workshops held at universities played a crucial role in validating the methodologies of the 7th Agricultural Census 2024 by actively engaging academia, researchers, agricultural and livestock specialists. These sessions provided a platform for experts to critically analyze and refine the proposed census techniques, ensuring that they aligned with scientific research, international best practices, and the specific needs of Pakistan's agricultural sector. The involvement of universities fostered cross-sector collaboration, bridging the gap between academic research and policy implementation. By incorporating insights from specialists in agronomy, livestock, data science, and rural development, the census adopted more precise and effective enumeration strategies. Furthermore, these workshops encouraged innovation in data collection and analysis, exploring the use of geospatial mapping, real-time data validation, and digital enumeration tools to enhance the accuracy and efficiency of agricultural statistics. Through these collaborative efforts, the census methodology was proved scientifically robust, technologically advanced, and policy-relevant, ensuring that the findings would contribute to evidence-based decision-making and long-term agricultural planning and sustainability.

Seminar at Sindh Agriculture University, Hyderabad, Sindh, May 27, 2024

Seminar at the University of Agriculture, Peshawar, KP, May 30, 2024

Seminar at the University of Agriculture Faisalabad, Punjab– June 5, 2024

Seminar at the Balochistan Agriculture College, Quetta June 11, 2024

1.8 Brainstorming Session with Agriculture and Livestock Experts

A special brainstorming session was held with agriculture and livestock experts on June 27, 2024. The session aimed to gather expert insights on census methodologies and discuss ways to improve data collection. The key topics discussed included:

Questionnaire Development:

Experts reviewed and provided feedback on the structure and content of the questionnaire to ensure it captured comprehensive and relevant agricultural data.

Training Videos for Enumerators:

The importance of developing and utilizing training videos for census enumerators was highlighted to enhance their understanding of survey methodologies and improve data accuracy.

Technological Enhancements:

Discussions included the potential use of AI-driven tools to assist in data verification and reducing human errors.

Field Challenges and Solutions:

Practical field challenges faced by enumerators were addressed, and experts suggested potential solutions for efficient data collection.

1.9 Pilot Survey

After successful conduct of Population and Housing Census 2023, Leveraging a collaboration between expert statisticians and high-tech IT professionals, PBS developed a comprehensive plan for the First Digital Agricultural Census. As part of its strategic planning, PBS launched a Pilot Survey in July 2024 before training of Master Trainers, to simulate the actual field environment before initiating training for the Census Master Trainers. This pilot survey was critical in assessing the functionality and practicality of census technologies and processes, identifying potential implementation challenges, and ensuring the system's readiness. Conducted in selected rural Mouzas, the survey aimed to evaluate the preparedness of digital tools and gather insights for improving field operations, with its findings playing a vital role in shaping the timeline and methodology of the main census.

The Pilot Survey aimed to evaluate the effectiveness, applicability, and timeliness of new procedures introduced for the 7th Agricultural Census—particularly digital data collection tools such as the "Android House Listing Application" and the "Android Enumerator Data Collection Application." The survey's objectives included testing the clarity and sequence of the census questionnaire, assessing the workload and time required for enumeration, and examining the performance and durability of tablets and associated hardware. Additionally, it sought to verify the reliability and security of census software and GIS tools, evaluate the functionality of high-resolution digital maps for field navigation, and ensure the compatibility of hardware with software. It also tested secure data transmission, real-time monitoring capabilities, and the overall coordination between PBS's IT and field teams. The feedback gathered from the Pilot Survey was intended to refine operations ahead of the nationwide census rollout. Pilot Survey was held in different rural Mouzas:

- **Islamabad:** Gurahmast
- **Rawalpindi:** Dhalla
- **Jhelum:** Bhataya
- **Chakwal:** Chawali
- **Attock:** Jamgha

Pakistan Bureau of Statistics , Pilot Testing for 7th Agricultural Census 2024

1.10 Training of 7th Agricultural Census

A two-tier training program was implemented for the 7th Agricultural Census to ensure the effective preparation of census staff at different levels.

First Tier – Master Trainers Training (July 2024)

- *A specialized training session was conducted at the National Institute of Banking and Finance (NIBAF) in July 2024.*
- *Around 352 Master trainers were equipped with depth knowledge of census methodology, digital data collection tools, and statistical validation techniques.*
- *The training included workshops, hands-on exercises, and expert-led discussions on best practices in agricultural data collection.*

Second Tier – Field Staff Training Sep-2024 (Phase-I), Dec-2024 (Phase-II)

- *Following the training of Census Master Trainers, first phase training of enumerators and supervisors in September while second phase training was conducted in December, 2024 at district levels.*
- *7686, Field staff were trained by master trainers to ensure uniform understanding and execution of census protocols.*
- *The training covered field data collection techniques, ethical considerations, digital tool usage, and troubleshooting common challenges in data gathering.*
- *Role-playing and simulated interviews were conducted to enhance enumerators' interaction skills with farmers.*

The Agricultural Census Training served as a crucial platform for evaluating the census progress

Inauguration of the 7th Agricultural Census Training, Minister PD&SI, Professor Ahsan Iqbal

Second Tier – Field Staff Training (December 2024)

and implementing corrective measures. The resolutions adopted during training are expected to enhance the accuracy and efficiency of the census process. Enumerator and Supervisors reaffirmed their

Table 1.1: Number of Trainers trained at NIBAF, Islamabad

Department	No. of Participants
Pakistan Bureau of Statistics (PBS)	320
Crop Reporting Services (CRS)	7
Agriculture Extension (AE)	13
Agriculture Research (AR)	1
Education Department (ED)	6
Information Technology (IT)	1
Livestock (LS)	1
Provincial Bureau of Statistics (BoS)	3
Total	**352**

1.11 Field Operations

The 7th Agricultural Census of Pakistan was conducted in two distinct phases to account for varying climatic conditions across the country. This comprehensive national exercise aimed to collect up-to-date and accurate agricultural data to support policy formulation and strategic planning for the agricultural sector.

1.11.1 Inaugurations

Formal launch ceremonies were held at federal and provincial levels, marking the nationwide rollout of census activities. The Minister of Planning, Development and Special Initiatives, Mr. Ahsan Iqbal, oversaw the inauguration events and Inaugurated the Field Operations at National Level. In Khyber Pakhtunkhwa, the Minister of Agriculture, Major (Rtd.) Sajjad Barkwal, inaugurated the field operations. In Azad Jammu and Kashmir (AJK), the Minister for Livestock and Dairy Development, Sardar Mir Akbar Khan, presided over the inauguration. In Balochistan, the Chief Minister, Sarfaraz Bugti, inaugurated the event, while in Punjab, the Finance Minister, Mian Mujtaba Shuja-ur-Rehman, inaugurated the field operation on behalf of the Chief Minister. In Sindh, Mr. Nasir Hussain Shah, Minister for Local Government, Forests, and Religious Affairs, led the inauguration. Senior officials from the Pakistan Bureau of Statistics (PBS) in the respective provinces also attended the ceremonies. At District level the field operations were inaugurated by the respective Deputy Commissioners.

1.11.2 Phase I: Cold Areas Field Operations (September 2024)

The first phase of field operations was conducted in September 2024 in 24 districts identified as cold and mountainous areas. These areas were prioritized early due to harsh weather conditions expected in the winter months, which would hinder effective data collection. Covered 24

districts in Gilgit-Baltistan, Balochistan, Azad Jammu & Kashmir, Chitral, Upper Dir, and other northern high-altitude regions of Khyber Pakhtunkhwa. Enumerators conducted in-person interviews with farmers and landowners to collect information on landholding size, ownership, cropping patterns, livestock, irrigation sources, and agricultural machinery. Local administrations provided logistical support for access to remote and rugged terrains. Special training was given to enumerators for data collection in cold-climate conditions in September, 2024. Immediately, after training the enumeration work was started.

Phase 1: Cold Areas Field Operations —September 2024

1.11.3 Phase 2: Nationwide Field Operations (January 2025)

The second phase of field operations was launched in January 2025, with official inaugurations held across Pakistan. Field data collection continued till 10th February 2025 in this phase.

Phase 2: Nationwide Field Operations January 2025

Field Operations Gallery 7th Agricultural Census 2024

Chapter 2

What's New?

Digital Aspects

2. WHAT'S NEW: DIGITAL ASPECTS

2.1 Digital Aspects

After the successful conduct of 7th Population and Housing Census digitally, it was imperative to conduct 7th Agricultural Census on the same grounds by utilizing advanced technology. Modern technology permits end-to-end embedding of processes in the census value chain which ranges from planning, monitoring and implementation to evaluating outcomes. The prime digital aspect of the 7th Agricultural Census 2024 includes integration of three censuses (Agricultural, Livestock and Machinery census) by utilizing advanced technology, using tablet-based data collection, geo-tagging of agricultural households, real-time online dashboard for monitoring, use of digital maps, task management system, publicity campaigns through social media and hotline complain system. These digital tools improve data accuracy, reduce errors, time and cost reduction, enhance efficient processing and analysis that are the essential requirements of any census and survey to be conducted successfully.

Digital Data Collection of 7th Agricultural Census

2.2 Census Software Modules

In an increasingly digital world, organizations are seeking more sustainable and economically viable technology oriented solutions. Given the nature, timeliness and the scope of agricultural census, it is difficult to manage census activities without providing a digital solution for effective implementation and control. That's why, Pakistan Bureau of Statistics has developed indigenous software modules—locally developed applications tailored to the specific needs of Agricultural Census. This solution provided significant cost advantages by minimizing complexities of process according to locally tailored

needs, avoiding additional licensing fees, enabling faster; more affordable support and customized solutions while enhancing digital sovereignty. This approach not only ensured better alignment with local requirements but also contributed as strategic investment in long-term digital resilience.

Pakistan Bureau of Statistics has developed the whole software in-house and it has contributed a lot in terms of cost optimization as well as efficiency. As PBS's own team of developers better understand the requirements of the field and the experiences gained during "Digital Census". These Software Modules have not only overcome the deficiencies of Digital Census but also contains improvements in the process. This technology stack enabled a seamless transition from data collection to validation and reporting, optimizing processing timelines and reducing reliance on third-party Tools :

2.2.1 Potential Features of Software Packages

All administrative tasks are systematically managed in respective software modules developed by in-house PBS experts. These modules not only minimize the cost but also enhance the efficiency of the whole process enabling the PBS to successfully complete this national activity. Some of the potential features of these software applications are discussed in detail such as:

A comprehensive ***HR Management System*** streamlined field team deployment through automated block assignment, dynamic replacement, user access control to minimizing delays and administrative workload. It ensured that staff operated within authorized geographic boundaries, helping maintain data integrity and operational discipline.

The ***Inventory Management System*** tracked the issuance, location, and return of tablet devices in real-time, reducing device loss and misuse, supported swift redistribution where needed, and automated reconciliation at the end of field operations while ensuring optimized use of available resources.

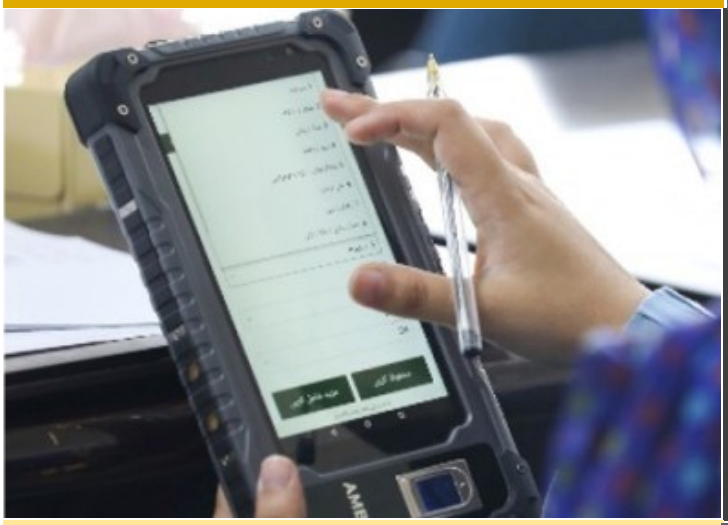
The ***GeoMonitor360 Dashboard***, a web-based GIS monitoring tool, allowed tracking of centralized operational statistics, real-time monitoring of census progress and field activities at all administrative levels—reducing the need for costly field inspections and enabling quick response to ground-level issues. This platform provided spatial validation capabilities, flagging unvisited areas to identify uncovered structures and real time progress insights to uphold enumeration integrity.

Data Cleaning Module is a robust, query-based automated data cleaning app that replaced the traditional manual review methods, enabling faster, repeatable, and scalable error correction. AI-assisted cleaning tools were used at initial scale to detect data anomalies, contributing to more consistent and reliable datasets.

2.3 Census Hardware and IT Infrastructure

a. State of the Art Datacenter

Fortunately, a huge cost reduction could be possible due to the start of operationalization of PBS own's datacenter. PBS recently upgraded its own datacenter to meet the international standards for power backups, network and server security, precision cooling, fire suppression systems, environmental monitoring and control, disaster recovery capabilities and access control systems. A well-established in-house datacenter infrastructure was utilized for this exercise to provide round-the-clock support.



b. Tablets and Allied Devices for Data Collection

The hardware and IT related requirements for this integrated census include 10,000 tablet devices with allied accessories were re-used from population census to minimize cost. Along with these devices 156 laptops, printers, and internet SIMs were provided at 156 census support centers throughout the country. Three data recovery sites, intranet and internet recovery with online and offline support, network SIMs along with internet devices and mobile data provided extensive support throughout the process of field operation.

c. Call Center for Complaint Management and Data Quality Assurance

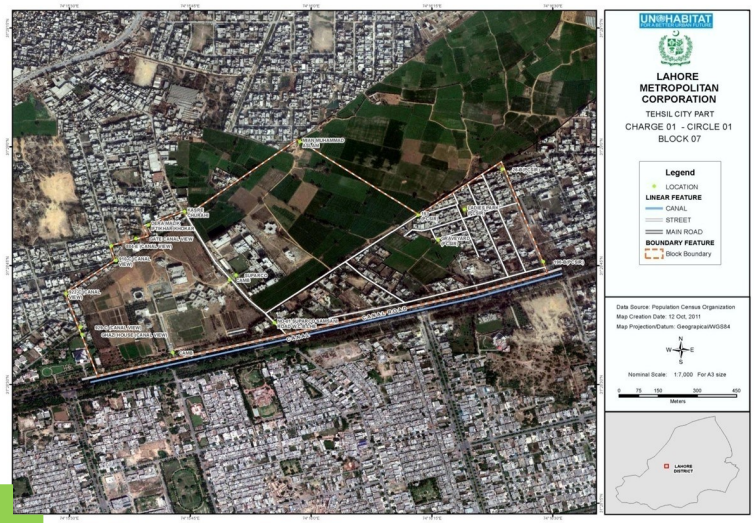
A call center with latest concepts and technologies were established at PBS HQ where 50 well-trained call agents worked to address all the complaints timely by providing IT support round-the-clock and also ensuring data collection quality during census process. However, the main task of this center was complaint management and to handle the non-response from big agricultural holdings.

d. SMS Gateway

In order to strengthen communication and coordination throughout the 7th Agriculture Census, the Pakistan Bureau of Statistics integrated a centralized SMS Gateway into its operational framework. This system played a pivotal role in facilitating rapid and reliable information exchange between the PBS headquarters, regional offices, supervisors, and field enumerators across the country. By leveraging mobile communication networks, the SMS Gateway enabled swift dissemination of updates, technical instructions, operational alerts, and critical deadlines, thereby streamlining field operations and supporting time-sensitive decision-making .

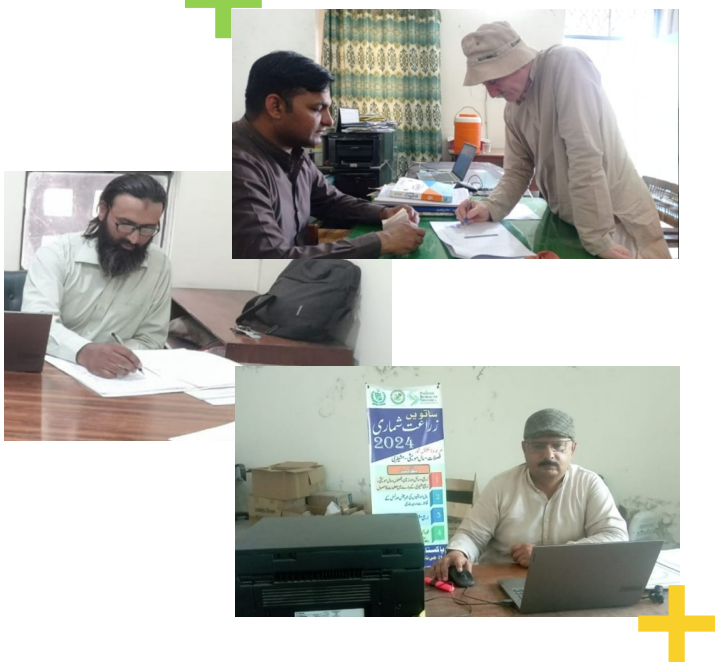
2.4 Utilization of Digital Block Boundaries

PBS has already digitalized all area frame boundaries comprising 185509 blocks and PBS is conducting all surveys through tablets by using these digitalized block boundaries. Mouza Census Frame 2020 mapped with updated sampling frame of 7th Population and Housing Census 2023 for the 7th Agricultural Census 2024. The sampling frame consists of 45,752 Mouzas 103,972 Rural Enumeration Blocks and 39,985 Urban Enumeration Blocks. However, for the sample size of total of 11,054 Mouzas/Blocks selected in the 7th Agricultural Census 2024, the same digital block boundaries developed through GIS technology, are utilized in the listing and enumeration software modules.



2.5 Geo-Tagging of Agricultural Household Structures

While developing Listing and enumeration software modules for 7th Agricultural Census 2024, it is considered essential to geo-tag each house during listing. The android-based listing application has a feature to geo-tag structures within the mouza or block assigned to an enumerator as it is a GIS based application enable enumerator to geo tag houses and households. Alerts can be generated on in/out from relevant blocks.



2.6 Establishment of Census Support Centers

To run the field operation smoothly and efficiently, 157 dedicated Census Support Centers were established at each Census District Level. The role of these CSCs was very crucial to support and facilitate the census field operation. These CSCs are responsible in managing the range of tasks including distribution and retrieval of tablet devices, installation and configuration of software applications, acting as control rooms at district level, and handling complaints at district level. These centers were equipped with furniture, fixture and technical staff mostly from PBS. These staff are instructed to facilitate the field operation staff (enumerators and supervisor) .

2.7 Extensive Social Media Campaigns

For ensuring the successful conduction of census activities, a nationwide publicity campaign was planned on electronic, print, and social media platforms to highlight the importance of the 7th Agricultural Census and its objectives. Use of social media through identification and creating communication with influential, notables, academia, famous personalities from all walks of life and celebrities etc. from all districts and requested them to share their pictures and videos of giving data to enumerators with various mentioned Hashtags to highlight its importance. It was also requested to endorse all census related important information from Social Media handles of PBS by retweeting and sharing. Throughout the agricultural census, PBS officers and officials themselves run the PBS social media pages .

facebook.com/PBSofficialpak

x.com/PBSofficialpak

Instagram.com/pbsofficialpak

linkedin.com/company/pbsofficialpak

@PBSofficialpak

@PBSofficialpak

2.8 Digital Inauguration by Ministers

The First Ever Digital Agricultural Census 2024 was inaugurated by Prof. Ahsan Iqbal, Federal Minister of Planning, Development and Special Initiatives, Mr. Awais Manzur Sumra, Secretary, Ministry of Planning, Development and Special Initiatives and Mr. Muhammad Sarwar Gondal, Member (SS/RM) at federal level. On the same grounds, provincial ministers inaugurated the 7th Agricultural Census 2024 in their respective provinces. Some of the glimpses of inaugural ceremonies of the census are highlighted:

ISLAMABAD
Inauguration by Federal Minister P&D

LAHORE
Inauguration by Minister Finance

KARACHI
Inauguration by Minister for Energy

QUETTA
Inauguration by CM Balochistan

PESHAWAR
Inauguration by Minister for Agriculture

AJK
Inauguration by Minister for Agriculture

2.9 Listing and Enumeration at Same Time (Single Visit)

For hard areas as well as for some specific areas, where complete enumeration of agricultural households was required, it was decided that listing and enumeration will be completed at the same in one go. After listing, the enumerator was not required to revisit the enumeration area for enumeration purpose. These areas include:

i. *Gilgit Baltistan & Azad Jammu & Kashmir*
ii. *Cholistan Area*
iii. *Urban Blocks*
iv. *NCH (Big Farmers, Preidentified)*
v. *MCH (Big Farmers found during listing)*
vi. *Only Machinery Households*
vii. *Gypsy and Nomads*

Listing and Enumeration at same time (single Visit) resulted in following benefits;

By combining both tasks in a single visit, eliminated the need for multiple trips to the same area, saving significantly on transportation and logistic costs, labour costs- including per diems, accommodation, and wages for field staff

Respondents were not contacted multiple times resulted in mutual cooperation, reduced respondent's fatigue, and controlled non-response chances

Data collection starts along with listing, reducing the lag time and risk of units moving, which lowers the missing respondents

Coordinating one visit was easier than managing two separate ones, especially in remote and hard-to-reach areas

PBS has developed in-House ERP Solution covering all aspect of digital integrated agricultural census.

ERP Software's

- Data Collection Software
- Administrative Modules
- Visualization Dashboards

Infrastructure

- Primary Sites
- Disaster Recovery Sites
- Backup Site

Connectivity

- Suitable Network SIMs
- Internet Devices
- Mobile Data and Wi-Fi Support

Hardware

- 10,000 Tablets & Accessories
- 156 Laptops, 156 Printers
- Barcode Scanner for Inventory

2.10 Data Center Services for Hosting of Services

The successful execution of the 7th Agriculture Census was underpinned by the deployment of robust and resilient Data Center Services, which played a critical role in hosting, managing, and securing the digital infrastructure required for this large-scale national operation. Recognizing the immense data processing and storage needs associated with modern census activities, the Pakistan Bureau of Statistics (PBS) established a state-of-the-art Tier-3 Data Center at its headquarters, the Statistics House in Islamabad. This facility was specifically designed to address the growing demand for digital transformation within the organization and to support increasingly complex requirements in the fields of data analytics, artificial intelligence (AI), machine learning, and big data processing.

The Tier-3 classification signifies adherence to international standards, offering 99.982% uptime with full redundancy for power, cooling, and network connectivity, ensuring the high availability, fault tolerance, and operational reliability necessary for mission-critical government functions. This level of infrastructure not only provided uninterrupted support during the Agriculture Census operations but also acted as a backbone for broader e-governance initiatives, centralized data integration, real-time dashboards, and informed policy-making. With multiple layers of security protocols and advanced firewall protections in place, the PBS Data Center ensured data confidentiality, integrity, and accessibility for authorized users throughout the census period.

During the conduct of the 7th Agriculture Census, the Data Center's hosting capabilities were instrumental in enabling smooth operation of all digital services, including the central server management of field-collected data, secure remote access for field officers and regional teams, and real-time data synchronization from thousands of tablet devices deployed across the country. The infrastructure also incorporated a robust disaster recovery and business continuity mechanism, which safeguarded against unexpected failures or external threats, thereby minimizing the risk of data loss or service disruption.

Moreover, the hosting environment supported virtualization technologies and scalable cloud-based solutions, allowing PBS to dynamically allocate computing resources based on the census workload and traffic patterns. This flexibility ensured optimal performance even during peak data transmission hours. The centralized hosting services also facilitated centralized monitoring, troubleshooting, and technical support, enabling PBS to promptly address any IT-related challenges in the field.

In essence, the PBS Data Center served as the digital command center of the entire census operation, offering a secure, scalable, and resilient IT environment that was vital for the successful, accurate, and timely execution of the 7th Agriculture Census across Pakistan.

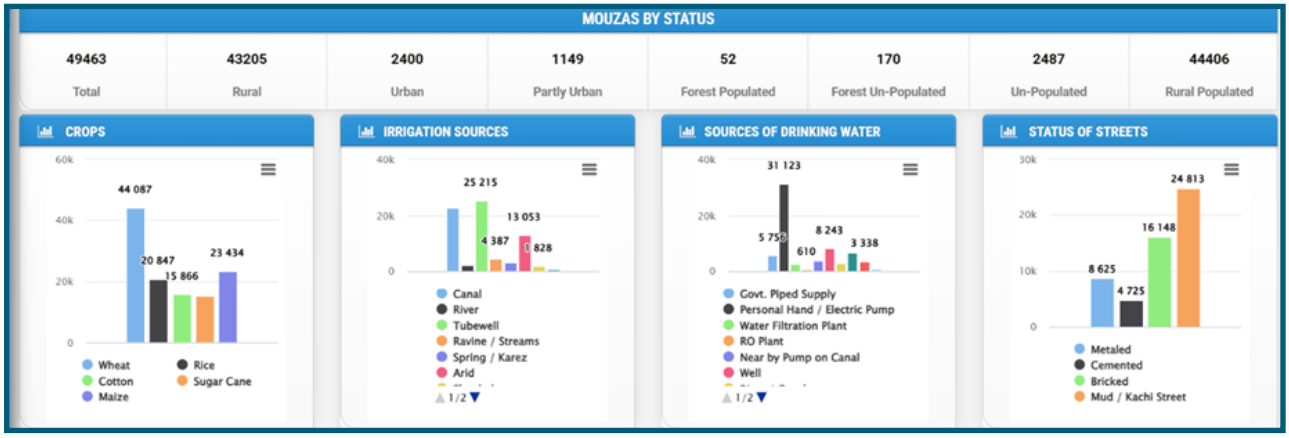
2.11 Development of Web Portals and Dashboards

In order to ensure, timely and maximum outreach of the data, field monitoring and update of important information, multiple cyber based developments have been carried out. These digital products are also developed by the PBS experts. The details are given below:

Mouza Census 2020 Dashboard

The Mouza Census is the initial part of the Agricultural Census, this was completed in 2020 under challenging conditions of Covid-19 pandemic. The primary objective of the Mouza Census-2020 is to provide updated frame for Agricultural Census. Apart from this it provides huge rural development statistics of all over the country.

On the basis of these rural development statistics, an interactive dashboard have been developed through which data and infographics may be observed from National, Provincial level to basic level of any Mouza of the country. Microdata to the Mouza level are also available. This already live on PBS website.



NCH Portal of Big Land and Livestock Holdings

As per methodology of Agricultural Census, the big land and livestock holders are necessarily enumerated. PBS has updated list of such big farmers or holders. Technically these holders are termed as National Certainty Holdings (NCH) in order to signify their mandatory counting during the census. However this list needs a continuous update because of various dynamics. An NCH portal has been developed, primarily for the purpose of updating list of NCH throughout the country.

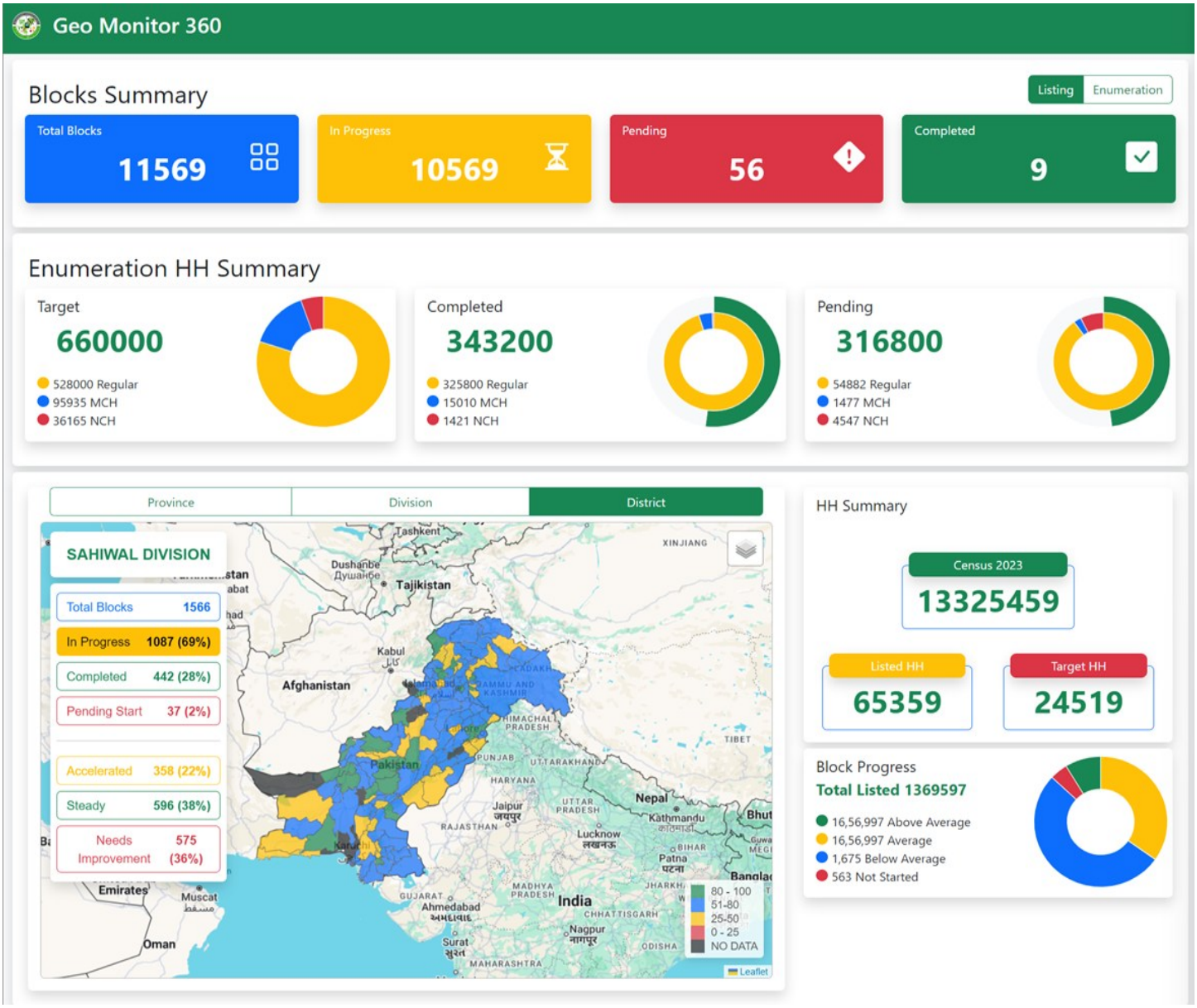
Decision Support System

Dashboard on the basis of current Agricultural Census data have been developed utilizing statistics and infographics in order to get insights from 7th Agricultural census 2024. The Decision Support System developed from the 7th Agricultural Census 2024 will serve as a vital tool for evidence-based planning, policy formulation, and resource allocation in the agriculture and livestock sectors. By offering real-time access to key indicators—such as landholding patterns, crop distribution, irrigation sources, and livestock ownership—the dashboard enables planners, researchers, and government institutions to identify regional disparities, forecast trends, and design targeted interventions. This data-driven approach enhances transparency, improves service delivery, and ensures that national development initiatives are aligned with ground realities and the goals of sustainable agricultural growth.

2.11 Agricultural Census Monitoring Dashboard

Role Based Dashboard for District Focal Person, Divisional In charge, Provincial In charge and Higher Management to track progress and monitor the listing and enumeration.

- Listing Progress
- Enumeration progress
- Enumerator Tracking
- GIS Monitoring
- Quality Monitoring



Chapter 3

Sample Design

3. SAMPLE DESIGN

3.1 Introduction

Pakistan Bureau of Statistics (PBS) successfully conducted 7th Agricultural Census 2024 "Integrated Digital Count" by merging three past censuses i.e. Agricultural Census, Livestock Census and Agricultural Machinery Census. Previously, three separate censuses on Agriculture, Livestock and Agricultural Machinery were conducted using separate methodologies, various sample designs, and at different timings. Pakistan has rich experience of carrying out separate agriculture related three censuses using a mixture of two methods i.e. complete and sample counts, for each of the census but with varying methodologies.

Pakistan Bureau of Statistics decided to cover the agricultural activities in one go using single effort of agricultural census under the same logistic operation instead of three separate censuses. For this purpose, a new sample design was the prerequisite. The FAO supported PBS by hiring the services of an International Sampling Expert to prepare the sample design for merged and 7th Agricultural Census of Pakistan. In the light of various discussions and online meetings between the PBS sampling team and FAO Sampling Consultant, the sample design for 7th Agricultural Census of Pakistan was developed in 2021. The new sample design is efficient as compared with previous designs that it targets only the agricultural households through stratification approach rather cluster approach. The stratification has been applied on the basis of land operators, livestock holders, and agricultural machinery owners while other households has been segregated being out of the scope of the census..

The universe of the census consists of all urban and rural areas of Pakistan. Results are representative at overall district level.

3.2 Sampling Frame

In order to prepare the sampling frame of Agricultural Census (AC), Mouza Census 2020 was conducted. Each mouza also contains Enumeration Blocks (EBs)/block; the mouza may consist of one or more than one block. After conduct of latest Population & Housing Census 2023, the updated information used in the frame of Agricultural Census. Therefore, the mapping of Mouza Census Frame 2020 and P&HC 2023 has been carried out. The latest information of EBs against each mouza of Mouza Census Frame has

Table 3.1: Mouza Census Frame 2020

	Name of Province	No. of Mouza	No of Blocks
1	Khyber Pakhtunkhwa	9,290	21,515
2	Punjab	22,637	53,426
3	Sindh	5,432	16,380
4	Balochistan	6,166	7,686
5	Islamabad	92	576
	Total-I	43,617	99,583
1	Azad Jammu & Kashmir	1,563	3,326
2	Gilgit-Baltistan	573	1,063
	Total-II	2,136	4,389
	Grand Total (I+II)	**45,753**	**103,972**

Table 3.2: Blocks with Agri. Information from Population & Housing Census-2023

	Name of Province	No. of Mouza	Blocks with Agricultural information
1	Khyber Pakhtunkhwa	3,885	2,655
2	Punjab	34,464	19,823
3	Sindh	24,253	15,161
4	Balochistan	2,596	1,428
5	Islamabad	833	485
	Total-I	66,031	39,552
1	Azad Jammu & Kashmir	693	329
2	Gilgit-Baltistan	174	104
	Total-II	867	433
	Grand Total (I+II)	**66,898**	**39,985**

been updated. Later on, Mouza Census Frame 2020 mapped with updated sampling frame of 7th Population and Housing Census 2023 for the 7th Agricultural Census 2024. The sampling frame consist of 45,753 mouzas and 103,972 blocks.

3.3 Sample Size Estimation

Sample size estimation has been carried out at district level using 15% Margin of Error at 95% confidence interval. The sample size of 7th Agricultural Census and Livestock Census in each district has been considered along with information of cultivated land and livestock concentration based on Mouza Census 2020. Initially, sample size of total 11,054 mouzas/blocks was estimated, however, later on, it was enhanced with the addition of 53 mouzas/blocks/Gawala colonies, as details below:

Table 3.3: Summary of Estimated Sample Size

	Name of Province	No of Mouza	No of Blocks	Total
1	Khyber Pakhtunkhwa (KP)	1,999	179	2,178
2	Punjab	3,624	879	4,503
3	Sindh	1,474	767	2,241
4	Balochistan	1,341	129	1,470
5	Islamabad	27	25	52
	Total-I	8,465	1,979	10,444
1	Azad Jammu & Kashmir	360	39	399
2	Gilgit-Baltistan	212	28	240
	Total-II	572	67	639
	Grand Total (I+II)	**9,037**	**2,046**	**11,083**

3.4 Stratification

Various stratification strategies have been adopted for the 7th Agricultural Census according to the ground realities in Pakistan. For stratification purpose, two main strata were identified, however, some other strata were also identified within the selected enumeration areas

a) **National Certainty Holdings (NCH):** these are national level big agricultural holdings or agricultural households (HHs) having at least 100 acres of agricultural land OR 50 cows / buffaloes or both OR 200 goats / sheep or both OR 25 camels. These HHs are enumerated on 100 % enumeration basis throughout the country. Complete enumeration of big holdings is an important strategy and part of sample design to control the variation for the 7th Agricultural Census.

b) **Other Holdings:** the stratum of other than NCH agricultural households is comprised of less than limits of NCH holdings. These HHs are enumerated through sample selection of Mouzas / blocks and then households.

c) **Mouza Certainty Holdings (MCH):** is another stratum within the selected Mouzas / block. The

agricultural HHs having at least 20 acres of agricultural land OR 20 cows / buffaloes or both OR 50 goats / sheep or both OR 20 camels. These HHS are enumerated on 100 % count basis within the selected Mouza / block.

For selection of Mouzas and blocks in stratum (b), further stratification has been made out of rural and urban areas independently.

3.4.1 Stratification in Rural Areas

In sampling frame, rural Mouzas are classified into settled and unsettled areas. Two way classification has been developed based on agricultural information in each Mouza on the basis of Mouza Census Frame 2020.

i. *Cultivated land in the Mouza*

ii. *Livestock concentration in the Mouza*

In first way stratification, Mouzas without and with cultivated land are stratified as Z1, and Z2 respectively as shown in Table 3.4.

Table 3.4: Stratification of Rural Mouzas

Area	Mouza Status	First Way Stratification
Settled and Unsettled	Without cultivated land	Z1
	With cultivated land	Z2

Livestock Concentration: Second way stratification is based on livestock concentration in stratum Z2 against each Mouza as per Mouza Census Frame 2020. Rural area frame in each district is stratified keeping in view the livestock concentration in each Mouza, according to the information about livestock category, collected in Mouza Census Frame 2020. Detailed stratification is elaborated in Table 3.5.

Table 3.5: Categories on the Basis of Livestock

Types of Animals / Categories	Category with Livestock Concentration			
	1	2	3	4
Cows/ Buffaloes	Nil	1-100	101-250	251 more
Sheep/Goats	Nil	1-200	201-500	501 more
Camels	Nil	1-25	26-100	101 more

Mouzas classified with category code 1 present no livestock, Mouzas classified with category code 2 have animals between 1 and 25 heads of camels, OR between 1 and 100 heads of cows/buffaloes, OR between 1 and 200 sheep/goats and so on. Four strata are created as:

Stratum L1: Mouzas having at least one type of animals in category 4.

Stratum L2: Mouzas having no animal in category 4 but at least one type of animals in category 3.

Stratum L3: Mouzas that have neither category 4 nor category 3 but having at least one type of animals in category 2.

Stratum L4: Mouza without livestock as indicated category 1.

Strata L1, L2 and L3 are target livestock holders, also having auxiliary information regarding cultivated land whereas, L4 do not have livestock information but Mouzas have also be selected from this stratum as they are from Z2 having cultivated land. Proportional allocation has been used for number of Mouzas to be selected from each stratum. Stratification is devised considering the larger category for each Mouza as indicated at Table 3.6.

Table 3.6: Stratification of Rural Mouzas on the Basis of Livestock Concentration

Mouza (Village)	Cow/ Buffalo	Sheep/ Goat	Camel	Stratum classification
CHAK NO 039/12-L	4	2	1	"Max"=4 | L1
CHAK NO 021/11-L	2	3	1	"Max"=3 | L2
CHAK NO 037/12-L	4	4	1	"Max"=4 | L1
CHAK NO 038/12-L	4	4	1	"Max"=4 | L1
CHAK NO 040/12-L	2	2	1	"Max"=2 | L3
CHAK NO 034/12-L	4	4	1	"Max"=4 | L1
CHAK NO 041/12-L	4	4	1	"Max"=4 | L1

3.4.2 Stratification in Urban Areas

The PHC 2023 provided an overall idea about the agricultural activities in urban as well as rural blocks. This information at block level is not only used to identify urban blocks having agriculture activities but also used for block selection from selected Mouzas in rural areas. Therefore, various strata were constituted using livestock rearing and self agriculture activities in urban areas.

Stratum 1: 1-9 livestock rearing households in a block.

Stratum 2: 10 and above livestock rearing households in a block.

Stratum 3: 1-9 households in a block reporting self agriculture.

Stratum 4: 10 and above households in a block reporting self agriculture.

Stratum 5: It includes blocks having absence of livestock from which no block was selected.

3.5 Allocation Plan

Sample of rural Mouzas has been proportionally allocated according to number of Mouzas falling in strata Z1 and Z2 and afterwards within the Z2 according to each of the four stratum L1, L2, L3, and L4. The stratum 5 in urban areas has been allocated with zero blocks being absence of agricultural HHs while rest of the four strata i.e., St-1, St-2, St-3, and St-4 have been considered and sample blocks have been allocated by using power allocation using 0.5 alpha quotient.

3.6 Sample Design

3.6.1 First Stage Selection of Rural Mouzas and Urban Blocks:

Mouzas have been selected in the first stage by using various sampling techniques through proportional allocation for each stratum.

Mouzas in stratum Z1 have been selected using Simple Random Sampling (SRS) in the first stage as these Mouzas have no cultivated land.

The remaining Mouzas having cultivated land greater than zero in stratum **Z2** have been selected using Pareto sampling technique with cultivated area as measure of size through PPS design.

Urban Blocks have also been selected using Simple Random Sampling (SRS) in the first stage and a single stage design have been proposed for urban areas being low agricultural activities. All the agricultural HHs have been enumerated in selected urban blocks.

3.6.2 Second Stage Selection of Blocks from Selected Big Rural Mouzas

From selected big size Mouzas having two or more blocks already identified through PHC

2023, a single block has been selected through Multivariate Probability Proportional to Size (MPPS) method using livestock rearing households and self agriculture households as measure of size with Systematic Random Sampling.

3.6.3 Third Stage Selection of Households from Selected Rural Mouzas and Blocks

Complete listing of all the households in selected Mouzas and / or Blocks has been prepared showing variables to be used for (HHs) selection at third stage viz HHs having agricultural land, livestock, and agricultural machinery. After completion of HHs lists in each Mouza or Block, following categories of HHs have been identified:

i. *Households under National Certainty Holdings (NCHs).*

ii. *Households under Mouza Certainty Holdings (MCHs).*

iii. *Households reporting agricultural land under occupation with or without livestock and agricultural machinery*

iv. *Only livestock households with or without agricultural machinery.*

v. *Households showing ownership of only agricultural machinery.*

vi. *Nomads and Gypsy have been listed and enumerated at any stage of listing or enumeration, if found in the boundary of selected Mouza or Block.*

The households in categories NCH, MCH, only agricultural machinery, and nomads/gypsy (i, ii, v, & vi) have been enumerated on 100 % count basis with certainty. However, certain number of HHs from categories iii & iv have been selected using Systematic Random Sampling for detailed interviews to get the data for development of estimates for various indicators.

Chapter 4

Agricultural Indicators

4. AGRICULTURAL INDICATORS

4.1 Agricultural Household

A rural or urban household who operate agricultural land or have livestock or agricultural machinery is considered as agricultural household (HH).

4.1.1 Head of Agricultural Household

Out of the 19,799,443 agricultural households, 98.5% (19,501,431) are male head of HHs, while 1.5% (298,012) are female heads. The distribution reflects a significant gender gap in agricultural household decision-making roles in the country.

4.1.2 Crop Land Holding Households

A total of 11,701,584 agricultural households, with members aged 10 years or above, possess or operate cropland.

4.1.3 Land Tenure Classification

In 2024, Pakistan had around 11.7 million total farms, significantly increase from 8.26 million in 2010. Most farms were owner-operated—about 10.38 million, compared to 6.74 million in 2010—indicating a strong shift toward farm ownership. Owner-cum-tenant farms declined to 0.55 million from 0.60 million, and tenant-only farms dropped to 0.77 million in 2024 from 0.91 million in 2010, showing a sharp reduction in tenancy-based farming. The data highlights a national trend toward land ownership and away from tenant farming.

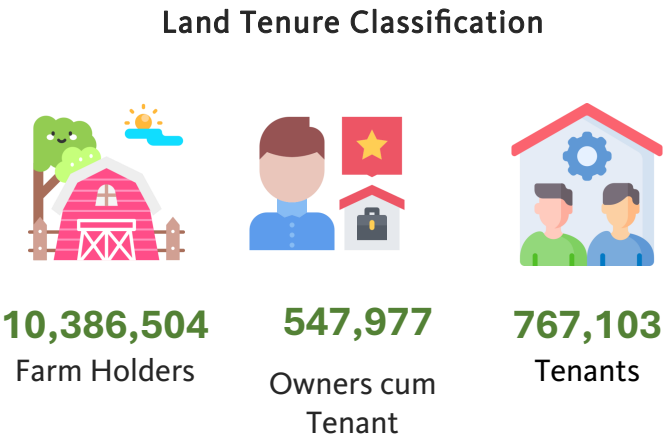
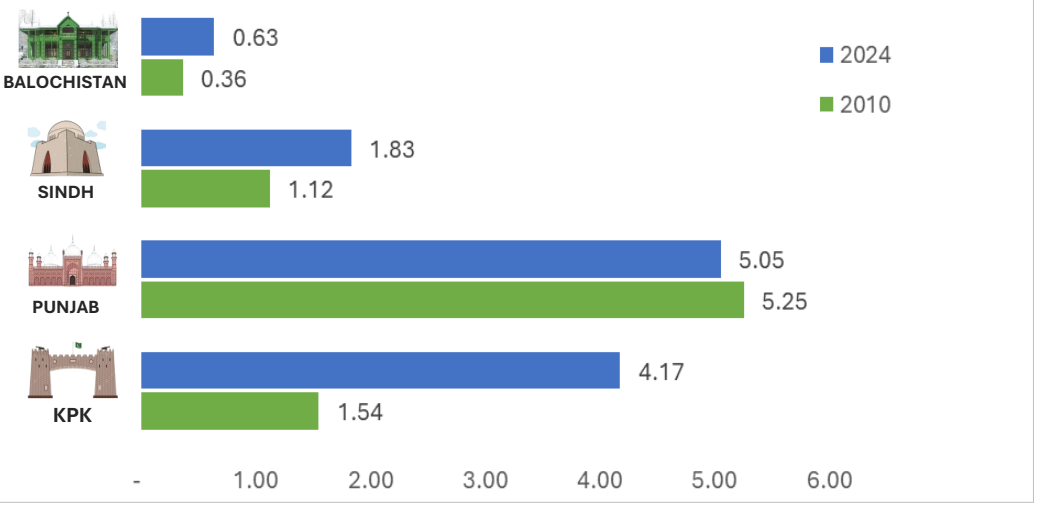


Table 4.1: LAND TENURE CLASSIFICATION OF FARMS (No. of Farms in "000")

ADMIN. UNIT	TOTAL		OWNER		OWNER CUM TENANT		TENANT	
YEARS	2024	2010	2024	2010	2024	2010	2024	2010
PAKISTAN	11,702	8,264	10,386	6,744	548	604	767	916
KPK	4,174	1,539	3,907	1,340	117	93	150	106
PUNJAB	5,050	5,249	4,376	4,293	339	452	335	472
SINDH	1,826	1,115	1,545	784	49	45	233	286
BALOCHISTAN	633	359	542	296	43	14	49	50
ICT	17	*	17	*	#	*	#	*

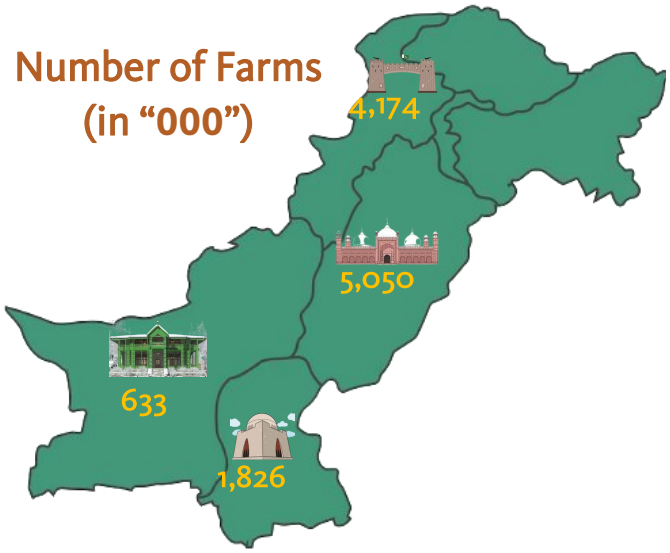
** ICT values included in Punjab Province in 2010*
 # Vale less than 1000

Figure 4.1: Total Number of Farms (in Millions)



Across provinces, Punjab had the highest number of farms (5.05 million), followed by KPK (4.17 million), Sindh (1.83 million), and Balochistan (0.63 million), with the majority in each province being owner-operated farms.

Even in Islamabad, nearly all of the 16,589 farms being owner operated.



4.1.4 Cultivated Area

The cultivated area of Pakistan refers to the land actively used for agricultural purposes, including crop production and livestock farming. The total cultivated area of Pakistan was reported to be 52,787,664 acres.

In 2024, the total number of farms across Pakistan was 11.7 million, showing an increase from 8.3 million in 2010. Along with increase in the total number of farms, the total farm area also increased,

rising from about 52.9 million acres in 2010 to 59.3 million acres in 2024.

Similarly, the total cultivated area has increased from around 42.6 million acres in 2010 to 52.8 million acres in 2024. On average, each farm in 2024 was about 5.1 acres in size, down from 6.4 acres in 2010. The average cultivated land per farm also decreased from 5.2 acres in 2010 to 4.5 acres in 2024, reflecting the same tend of average farm size.

Breaking it down by province, Punjab had the highest number of farms at about 5.05 million in 2024, with a farm area of 31.04 million acres and 29.6 million acres under cultivation. The average farm in Punjab was 6.1 acres, with 5.9 acres cultivated — showing high efficiency. Khyber Pakhtunkhwa followed with 4.17 million number of farms, but had a significant total farm area of 8.8 million acres, and 7.2 million acres of cultivated land area. The average farm size here was 2.1 acres, with 1.7 acres cultivated.

Balochistan, although having only 0.63 million farms, had the largest average farm size of 16.1 acres in 2024, slightly lower than 22.7 acres in 2010. However, only 12.2 acres per farm were cultivated, which may indicate challenges in bringing all land into productive use. Sindh had about 1.83 million farms, with an average size of 5.0 acres and 4.4 acres cultivated.

Finally, Islamabad had the smallest share with 17,000 farms. The average farm size is 3.2 acres in 2024, and cultivated area per farm is 2.8 acres.

Overall, data indicates a trend toward fewer but larger and more efficiently cultivated farms in Pakistan, with provincial differences varying agricultural land availability.

Table 4.2: Cultivated Area (in "000 acres")

ADMIN UNIT	NUMBER OF FARMS		FARM AREA		CULTIVATED AREA		AVERAGE SIZE OF FARM			
	TOTAL		TOTAL		TOTAL		AREA		CULTIVATED AREA	
Year	2024	2010	2024	2010	2024	2010	2024	2010	2024	2010
PAKISTAN	11,702	8,264	59,301	52,910	52,788	42,622	5.1	6.4	4.5	5.2
KPK	4,174	1,540	8,837	5,570	7,236	4,453	2.1	3.6	1.7	2.9
PUNJAB	5,050	5,217	31,040	29,248	29,645	26,974	6.1	5.6	5.9	5.1
SINDH	1,826	1,115	9,190	9,868	8,108	7,644	5	8.8	4.4	6.9
BALOCHISTAN	633	360	10,178	8,145	7,750	3,492	16.1	22.7	12.2	9.7
ICT	17	*	56	*	48	*	3.2	*	2.8	*

** ICT values included in Punjab Province in 2010*

Figure 4.2: Farm Area (in Millions)

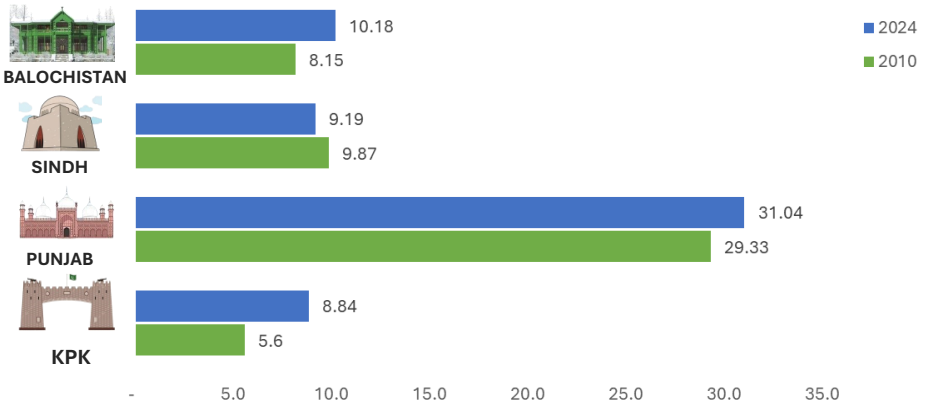
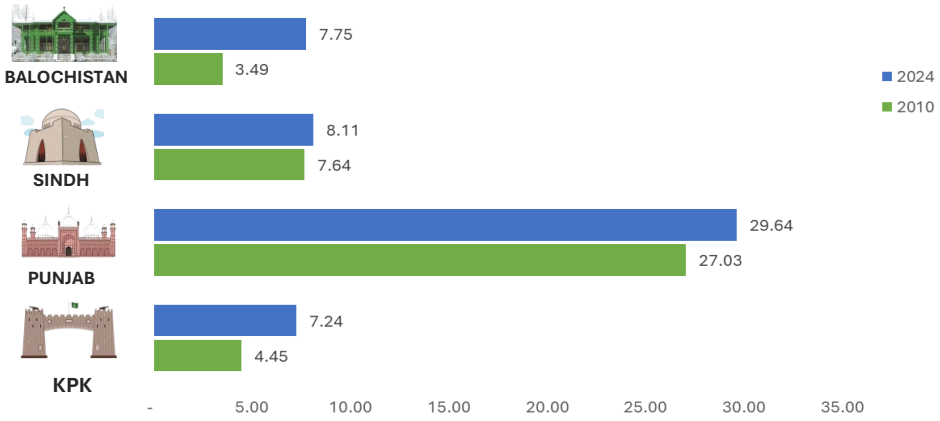


Figure 4.3: Cultivated Area (in Million)



4.1.5 Irrigation

Table 4.3 : CULTIVATED AREA CLASSIFIED BY MODE OF IRRIGATION AND BY SIZE OF FARM (in "000 acres")

ADMIN UNIT	Total Cultivated Area		Total Irrigated Area		Canal Only		Canal, Tubewell & Pump		Tank/Bandat Only		Spring/ Rodkohi Only	
YEARS	2024	2010	2024	2010	2024	2010	2024	2010	2024	2010	2024	2010
PAKISTAN	52,788	42,622	45,937	34,114	14,483	12,316	13,498	13,894	1,159	600	811	912
KPK	7,236	4,453	5,262	2,557	2,963	1,329	302	124	381	419	334	349
PUNJAB	29,645	26,974	27,092	22,264	4,019	4,200	12,036	12,959	140	42	263	129
SINDH	8,108	7,644	7,321	7,113	5,172	6,132	766	733	201	16	35	38
BALOCHISTAN	7,750	3,492	6,226	2,171	2,323	653	388	76	432	121	178	394
ICT	48	*	37	*	7	*	4	*	3	*	#	*

** ICT values included in Punjab Province in 2010*
 # Vale less than 1000

Continued Table 4.3

ADMIN UNIT	Karaez Only		Sprinkle/ Drip/ Central Pivot		Un-Specified Source (Others)		Total Non-Irrigated		Salaba		Barani	
YEARS	2024	2010	2024	2010	2024	2010	2024	2010	2024	2010	2024	2010
PAKISTAN	162	54	41	-	1,663	247	4,961	8,408	113	540	4,815	7,867
KPK	-	-	7	-	352	33	1,647	1,861	17	12	1,623	1,848
PUNJAB	-	-	25	-	626	39	1,934	4,750	9	30	1,918	4,720
SINDH	-	-	#	-	414	73	502	503	25	4	466	499
BALOCHISTAN	162	54	7	-	261	101	866	1,292	60	492	795	800
ICT	-	-	#	*	9	*	10	*	#	*	9	*

** ICT values included in Punjab Province in 2010*
 # Vale less than 1000

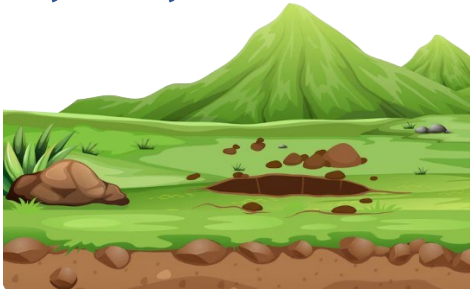
In 2024, Pakistan's total irrigated area is 45.9 million acres out of total, 14.4 million acres was irrigated by canals, as compared to 12.3 million acres in 2010. A slight decrease was observed in combined irrigation methods (canals, tube wells, pumps) 13.5 million acres in 2024 in comparison to 13.9 million acres in 2010. Punjab has the largest irrigated area with 27.09 million acres in total, followed by Sindh with 7.3 million acres. Although in KPK and Balochistan areas are irrigated by canal but other sources are also used. Interestingly traditional methods like Rod Kohi and Karez are still functional in Balochistan.

Non-irrigated (rain-fed) farming saw a sharp decline to 4.9 million acres in 2024, from 8.4 million in 2010, reflecting a shift toward irrigated agriculture nationwide.

45,937,412 acres

Irrigated land

4,961,636 acres



Non Irrigated land

Irrigated Area by Type and Province (Acres)

Figure 4.4: Irrigation by Canal only by Province (in Million)

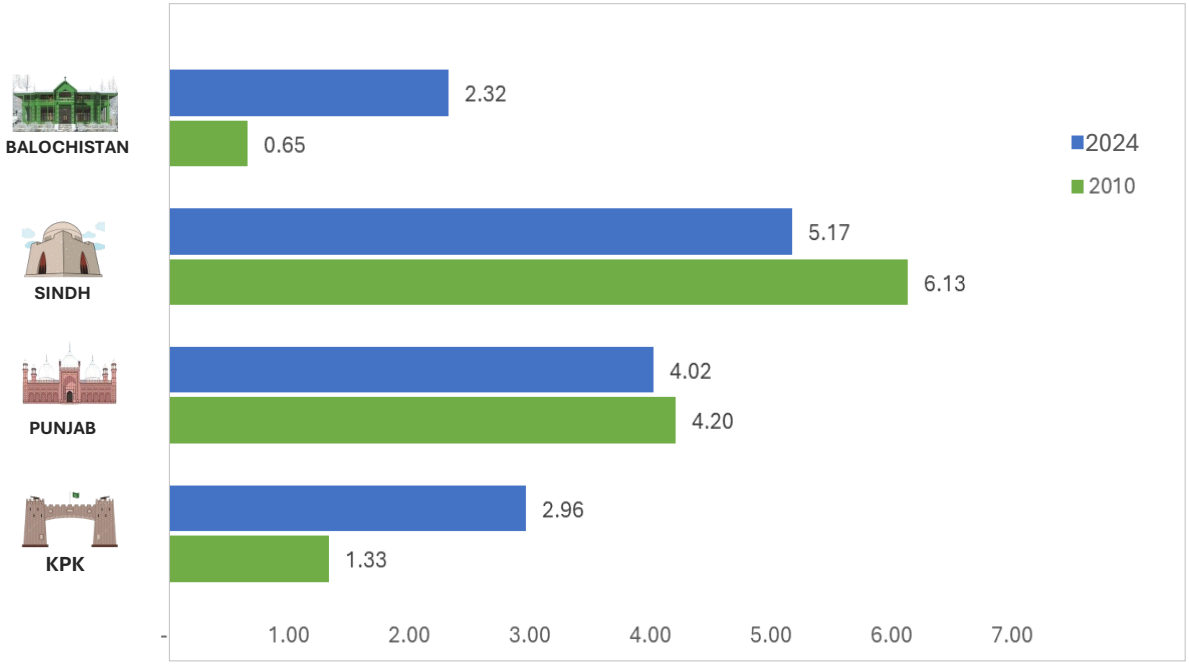


Figure 4.5: Irrigation by Tubewell only by Province (in Million)

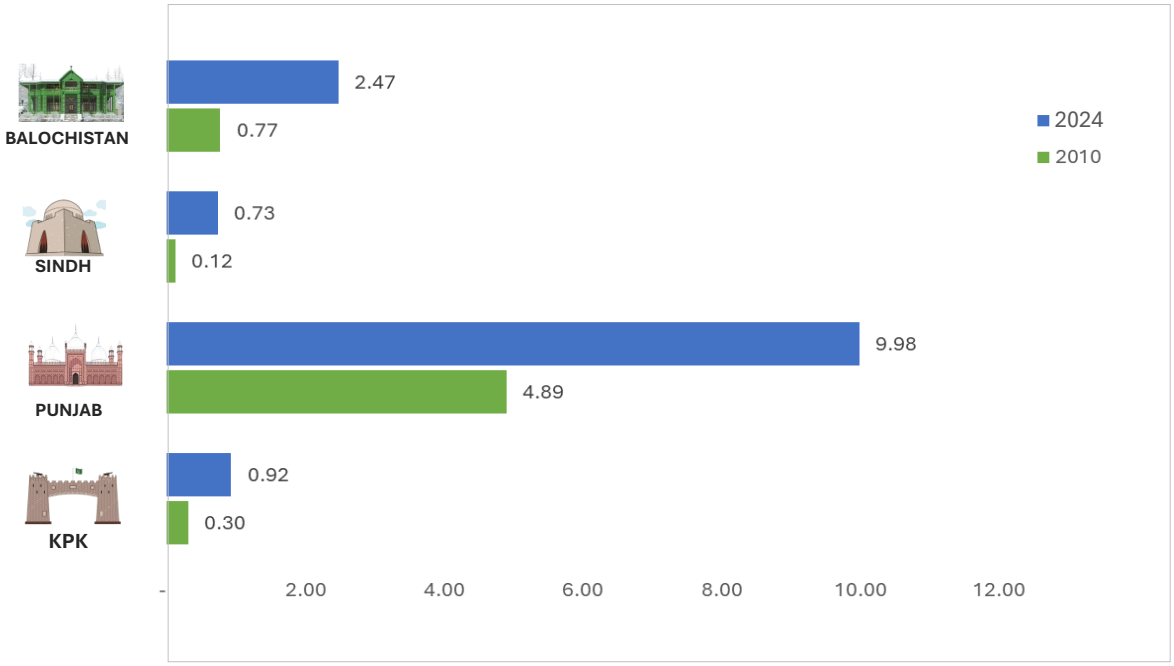


Figure 4.6: Irrigation by Canal, Tubewell & Pump by Province (in Million)

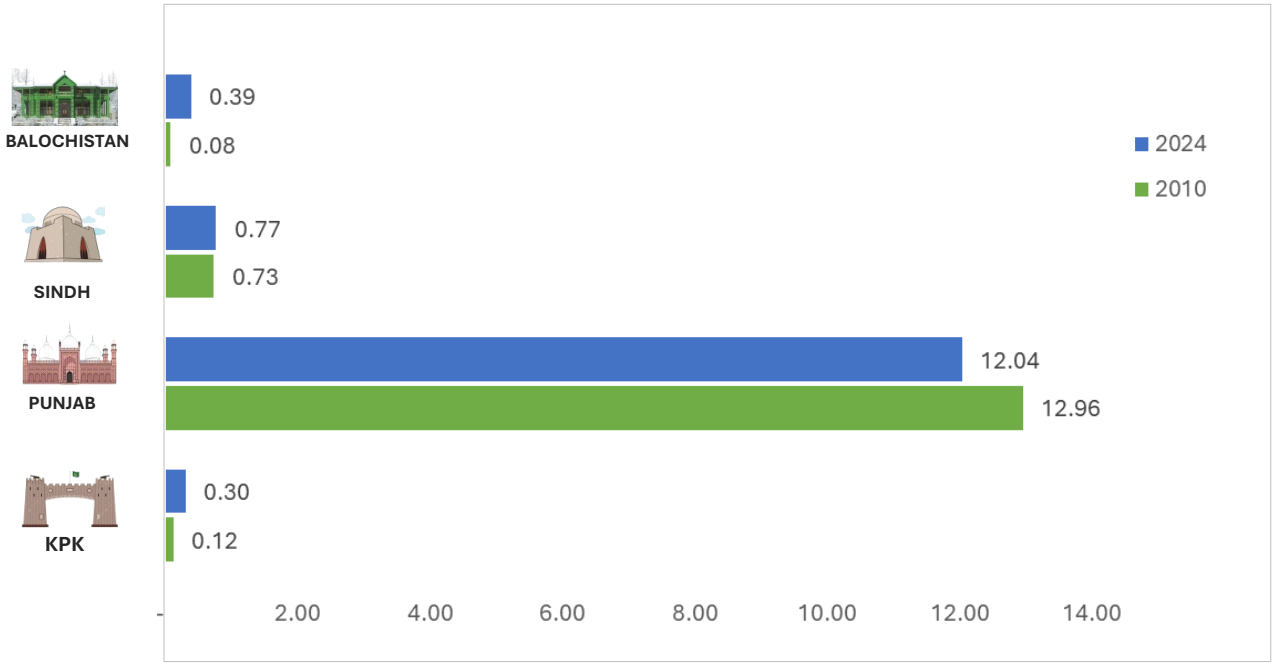
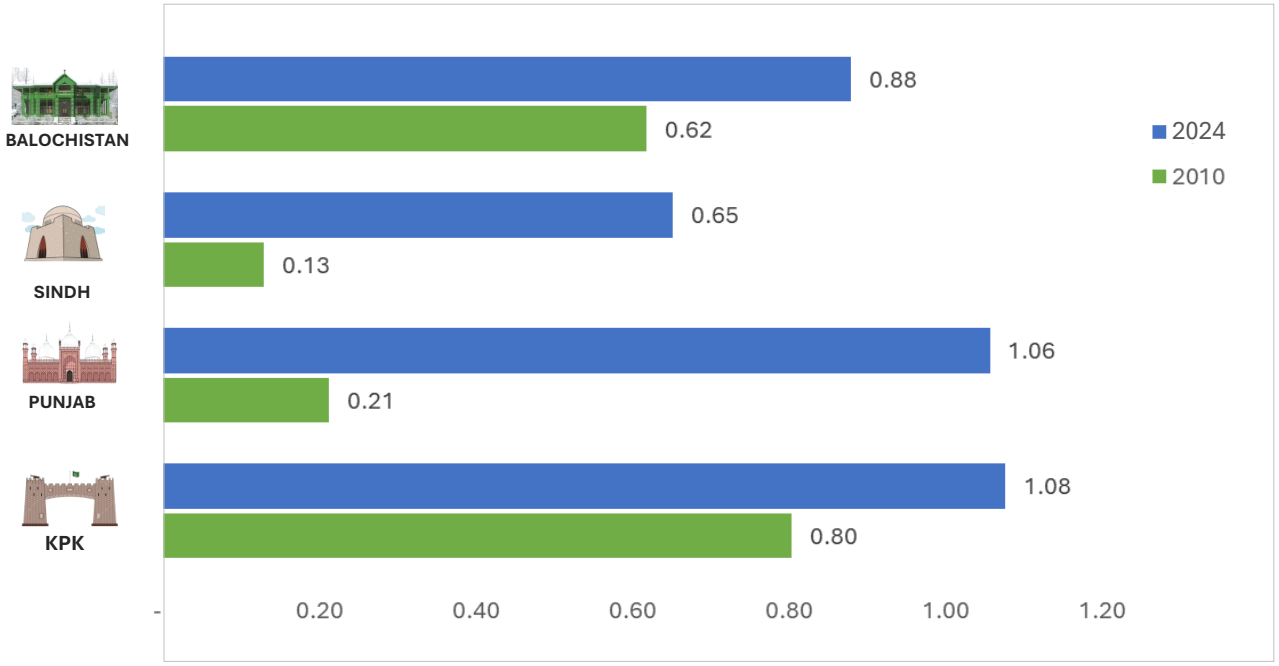


Figure 4.7: Irrigation by other sources of irrigation by Province (in Million)



4.1.6 Cropped Area

Pakistan's total cropped area increased significantly from 67.91 million Acre in 2010 to 82.8 million Acre in Census 2024, showing a growing confidence on agriculture sector. Among all major crops, share of Wheat cropped area remained the dominated crop share in country, with its contribution rising slightly from 42.0% to 43.3% in overall Pakistan.

Cropping area of Rice has been seen slight decline from 14.0% to 12.9%, while Maize increased from 4.0% to 5.1%. The Cotton share dropped sharply from 14.0% to 7.9%. Sugarcane share in cropped area has also been declined from 4.0% to 3.3%. The Fodder crop's share slightly increased from 9.0% to 9.5%, while the share of remaining other crops includes Jawar, Barley, Tobacco, Oil-Seeds, Pules and Orchards has also increased from 15.0% to 15.6%.

82,771,463 acres
Cropped Area

Major Crops Land Utilization

Wheat land usage slightly up from 42% in 2010 to 43.3% in 2024

3.31% of the cropped area used for sugarcane in 2024 while 4% was used in 2010.

13% of the cropped area used for rice in 2024 while 14% was used in 2010.

Land used for cotton dropped from 14% in 2010 to 7.9% in 2024

5.1% of the cropped area used for the cultivation of Maize in 2024 while 4% was used in 2010

9.5% of the total cultivated area is being utilized for fodder production in 2024.

Punjab province contributes the highest share of cropped area in all provinces, expanded from 45.0 million Acre in 2010 to 49.7 million Acre in 2024. The Wheat continued to be the most leading share in cropped area, maintaining a stable share around 41.5%. Rice/ Paddy share of cultivation slightly decreased from 14.0% to 13.4% in 2024, while Maize showed a notable increase from just 1.0% to 4.3% in region. The Cotton's share in Punjab declined steeply from 15.0% to 7.7%, while Sugarcane share dropped from 4.0% to 3.7%. The Fodder share in crops increased from 11.0% to 13.4% and all Other crops are slightly increased in share of crops.

KP holds considerable increase in total cropped area from 6.9 million acre in 2010 to 10.5 million Acre in 2024. Wheat cultivation increased from 47.0% to 50.0%, remaining the province's dominant crop share. Rice share rose modestly from 3.0% to 4.3%. However, Maize cultivation share declined from 24.0% to 18.4%. The Cotton cropped area share remained negligible 0.001 million acre. Sugarcane crop share dropped significantly from 6.0% to 3.0%, while Fodder crop's share minutely decreased from 6.0% to 5.5%. The share of Other crops dropped slightly from 16.0% to 15.7%.

Sindh's total cropped area grew slightly from 12.4 million Acre in 2010 to 13.1 million Acre in 2024. Wheat cultivation increased from 38.0% to 40.8%. Rice continued to be a major cropped share in the province, increasing from 20.0% to 21.5%. Maize remained minimal, with area 0.001 million acre. Cotton remained significant despite a sharp drop from 20.0% to 14.0%, while sugarcane cropped area declined from 5.0% to 3.9%. Fodder share has dropped from 4.0% to 2.7%, while the share of Other crops grew slightly from 13.0% to 15.3% in the province.

Balochistan showed the most significant increase in total cropped area from 3.6 million acre in 2010 to 9.4 million acre in 2024. The Wheat crop share remained dominant with share from 45.0% to 48.3% in 2024. However, Rice crop share shows a notable drop from 13.0% to 8.2%, and Maize share sharply declined from 2.0% to 0.3%. The Cotton crop share shows increasing trend from 1.0% to 9.0%. The Sugarcane crop share remained 0.2% in 2024. The Fodder's share remained stable at 3.0%, in 2024 while Other crops share showing declining from 35.0% in 2010 to 24.8% in 2024 in the province.

Table 4.4: SHARE OF MAJOR CROPS AREA IN TOTAL CROPPED AREA (%)

ADMIN UNIT	TOTAL CROPPED AREA (000) Acres		WHEAT		RICE/ PADDY		MAIZE	
	2024	2010	2024	2010	2024	2010	2024	2010
PAKISTAN	82,771	67,908	43.3	42.0	12.9	14.0	5.1	4.0
KPK	10,502	6,937	50.0	47.0	4.3	3.0	18.4	24.0
PUNJAB	49,720	45,046	41.5	41.0	13.4	14.0	4.3	1.0
SINDH	13,103	12,353	40.8	38.0	21.5	20.0	0.6	#
BALOCHISTAN	9,372	3,573	48.3	45.0	8.2	13.0	0.3	2.0
ICT	74	*	55.4	*	6.9	*	10.8	*

ADMIN UNIT	COTTON		SUGARCANE		FODDERS		OTHER CROPS	
	2024	2010	2024	2010	2024	2010	2024	2010
PAKISTAN	7.9	14.0	3.3	4.0	9.5	9.0	15.6	15.0
KPK	#	#	3.0	6.0	5.5	6.0	15.7	16.0
PUNJAB	7.7	15.0	3.7	4.0	13.4	11.0	14.1	13.0
SINDH	14.0	20.0	3.9	5.0	2.7	4.0	15.3	13.0
BALOCHISTAN	9.0	1.0	0.2	#	3.0	3.0	24.8	35.0
ICT	0.4	*	0.7	*	3.3	*	14.4	*

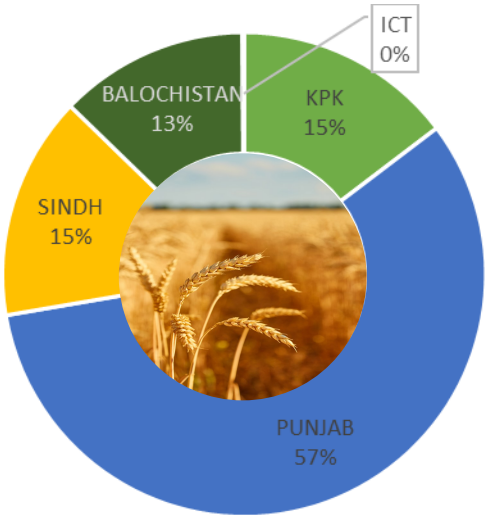
* *ICT value is included in Punjab province in 2010*

\# *Value less than 1 thousand*

Major Crop's Share in Cropped Area with Provinces

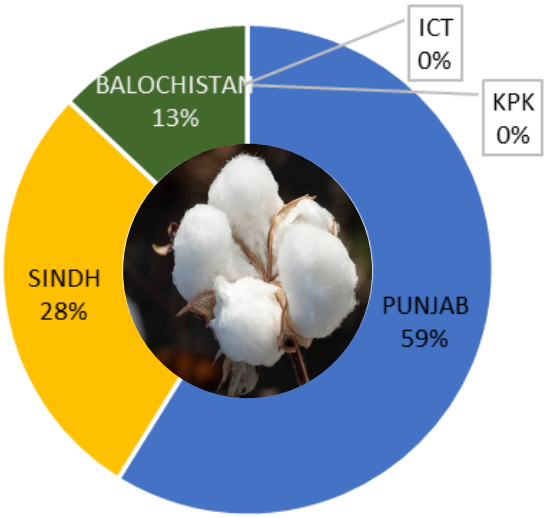
Wheat

The regional contribution of Wheat crop in Pakistan for the year 2024 highlights. 57% in Punjab, 15% Sindh & Khyber Pakhtunkhwa and 13% in Balochistan and Islamabad Capital Territory negligible contributes in Agriculture Census 2024.



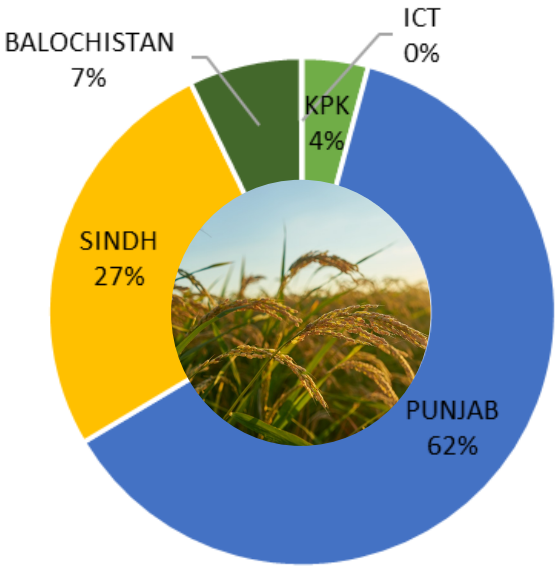
Cotton

The regional contribution of Cotton crop in Pakistan for the year 2024 highlights. 59% in Punjab, 28% Sindh, 13% in Balochistan, Khyber Pakhtunkhwa & Islamabad Capital Territory negligible contribution in Agriculture Census 2024.



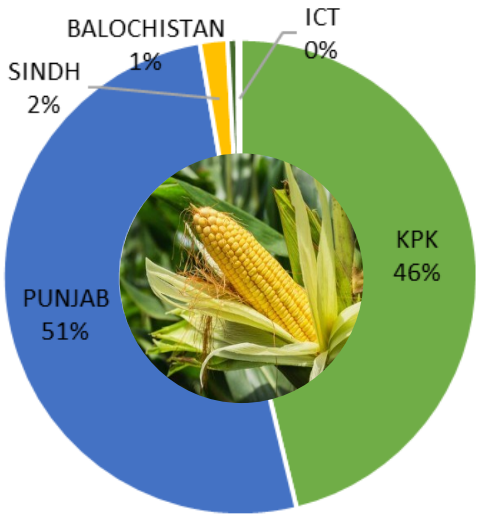
Rice

The regional contribution of Rice crop in Pakistan for the year 2024 highlights. 62% in Punjab, 27% Sindh, 4% in Khyber Pakhtunkhwa and 7% in Balochistan and Islamabad Capital Territory contributes negligible in Agriculture Census 2024.



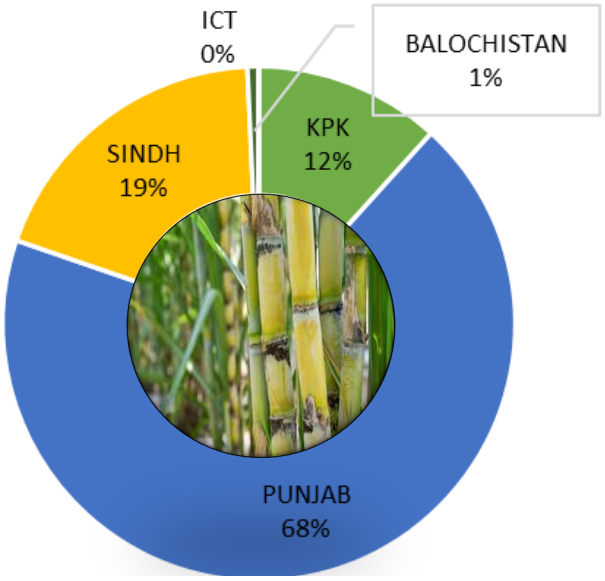
Maize

The regional contribution of Maize crop in Pakistan for the year 2024 highlights. 51% in Punjab, 2% Sindh, 46 in % in Khyber Pakhtunkhwa and Balochistan and Islamabad Capital Territory have minute contribution in Agriculture Census 2024



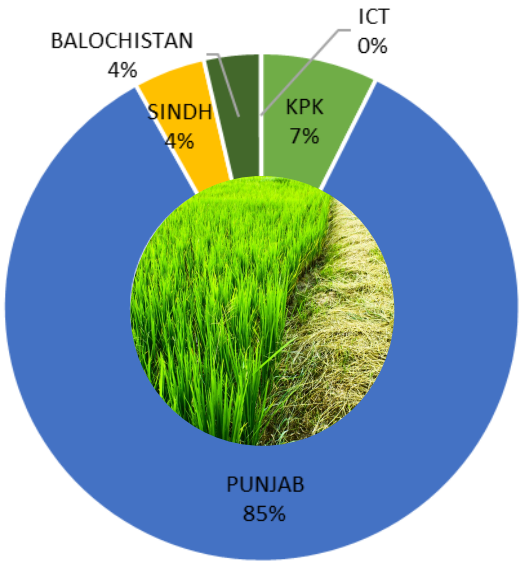
Sugarcane

The regional contribution of Sugarcane crop in Pakistan for the year 2024 highlights. 68% in Punjab, 19% Sindh, 12% in Khyber Pakhtunkhwa, Balochistan 1% and Islamabad Capital Territory contributes negligible in Agriculture Census 2024.



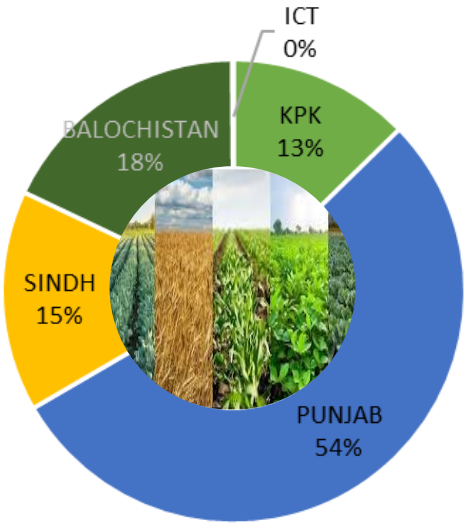
Fodder

The regional contribution of Fodder crop in Pakistan for the year 2024 highlights. 85% in Punjab, 4% Sindh, 4% in Balochistan, 7% Khyber Pakhtunkhwa & Islamabad Capital Territory negligible contribution in Agriculture Census 2024.



Other Crops

The regional contribution of Other Crops includes (Jowar Tobacco, Barley, Oil Seeds, Pulses etc.) in Pakistan for the year 2024 highlights. 54% in Punjab, 15% Sindh, 18% in Balochistan, 13% Khyber Pakhtunkhwa in Agriculture Census 2024.



Chapter 5

Livestock Indicators

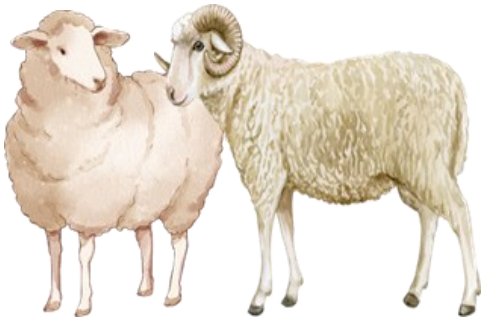
5.LIVESTOCK INDICATORS

5.1 Livestock Indicators

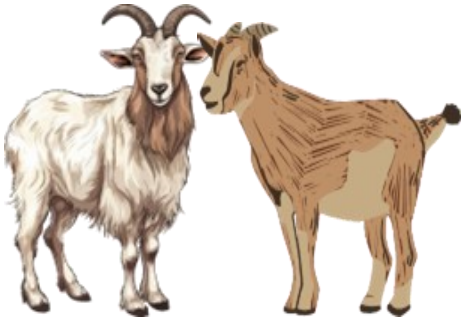
The figures below provides a view of animal populations across country 2024, covering cattle, buffaloes, sheep, goats, camels, horses, mules, and asses.

55,862,560

47,738,367



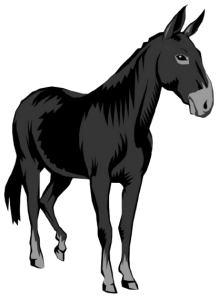
44,584,926



95,827,177

1,511,340

553,256



296,135

4,899,392

1,923

5.1.1 Livestock Population Prevalence in Pakistan

Table 5.1: Livestock Population 2024 Prevalence in Pakistan (In Millions)

Admin Unit	Cattle	Buffalo	Sheep	Goats	Camel
Pakistan	55.863	47.738	44.585	95.827	1.511
KPK	13.509	3.936	7.639	22.492	0.123
Punjab	26.968	29.561	13.385	31.309	0.252
Sindh	11.206	13.458	4.742	19.013	0.365
Balochistan	4.075	0.664	18.814	22.887	0.772
ICT	0.105	0.120	0.005	0.127	0.0038

Table 5.1: Livestock Population 2024 Prevalence in Pakistan (In Millions)

Admin Unit	Horses	Mules	Asses	Yak/ Zomo	Total Animals
Pakistan	0.553	0.297	4.899	0.002	251.3
KPK	0.176	0.088	0.782	0.002	48.7
Punjab	0.251	0.096	2.403		104.2
Sindh	0.052	0.035	1.081		49.9
Balochistan	0.073	0.079	0.630		47.9
ICT	0.001	0.00	0.004		0.36

In 2024, Pakistan's overall livestock population reached 251.3 million. Where Punjab province holds the largest share with 104 million animals, leading in Cattle, Buffaloes, Horses and Asses population in Pakistan. Balochistan province with 47.9 million total animals out of that 18.8 million sheep, 22.9 million Goats and 0.772 million Camels due to its arid terrain and pastoral landscape.

Khyber Pakhtunkhwa province report total 48.7 million animals' population with 22.492 million highest number of Goats and is the only region reporting 0.002 million Yak/Zomo/ Dzomo.

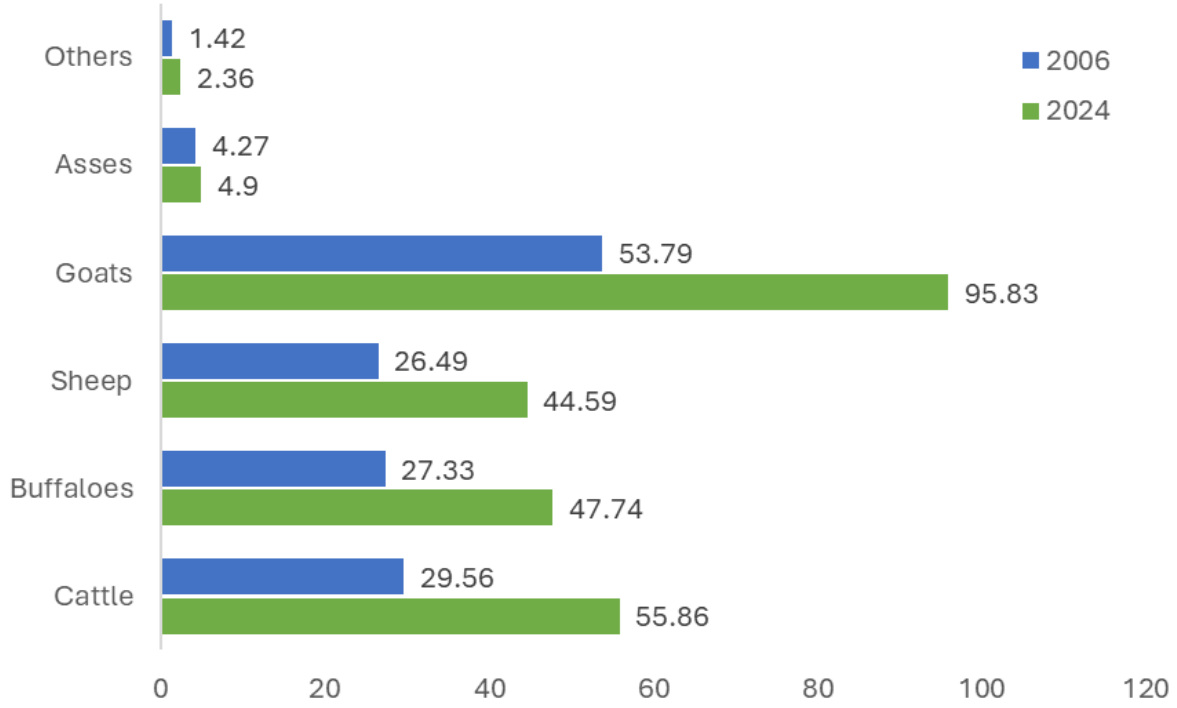
Sindh contributes 49.966 million animals, with vigor 13.458 million in Buffaloes and have 11.206 million Cattle, 19.013 million Goats and 4.742 million Sheep population and notable share of working animals 0.052 million Horses, 0.035 Mules and 1.081 million Asses as shown in table.

Islamabad Capital Territory is first time been reported separately earlier it was tagged with Punjab province has minimal livestock population and took-up less than 1% of the national total livestock population. The results pattern highlights the ecological and functional diversity of livestock across Pakistan's.

5.2: Pakistan: Livestock Population in 2006-2024 (in Million)

	Cattle	Buffaloes	Sheep	Goats	Camels	Horse	Mules	Asses	Yak/ Dzo/ Dzomo
2006	29.56	27.33	26.49	53.79	0.92	0.34	0.16	4.27	-
2024	55.86	47.74	44.59	95.83	1.51	0.55	0.3	4.9	0.002

Figure 5.1: Pakistan Livestock Population 2024 and 2006 (In Millions)



* Others include Horses and Mules

Figure 5.2: Livestock (Cattle) Population Pakistan from 7th Agricultural Census 2024

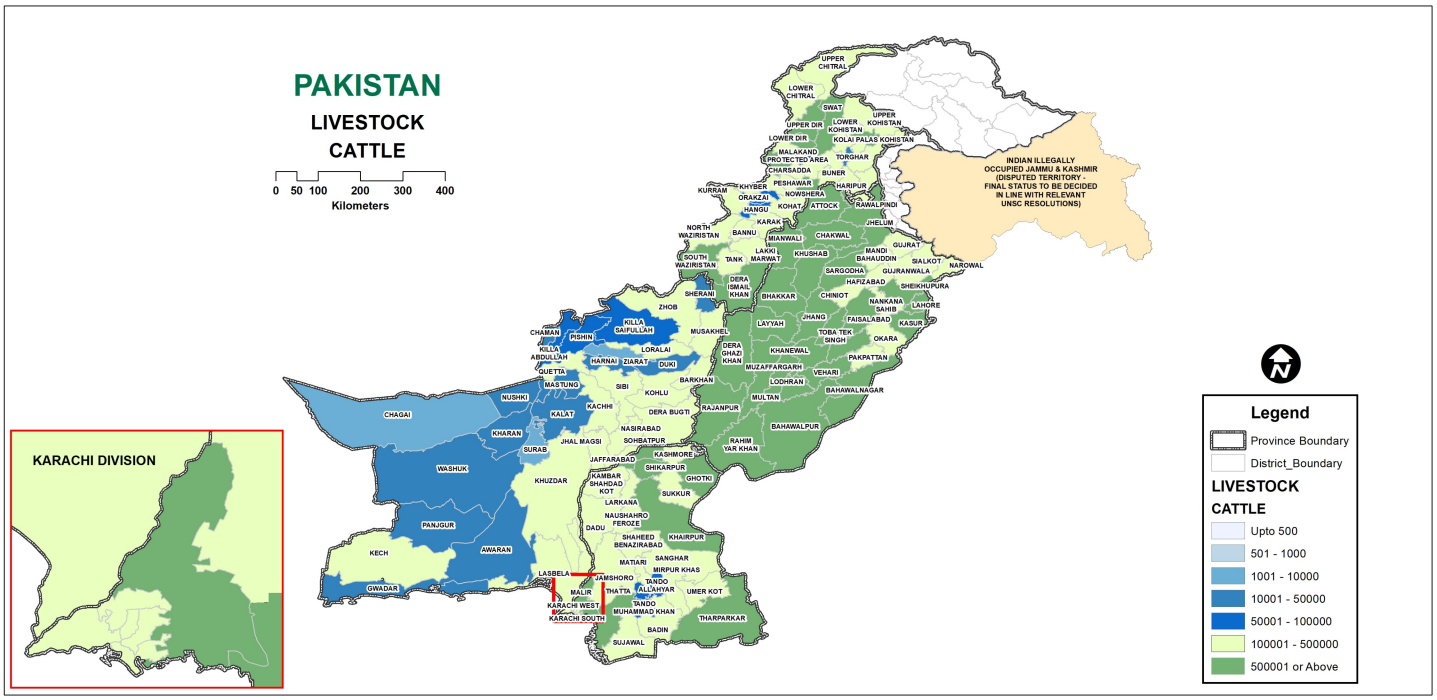


Figure 5.3: Livestock (Buffalo) Population Pakistan from 7th Agricultural Census 2024

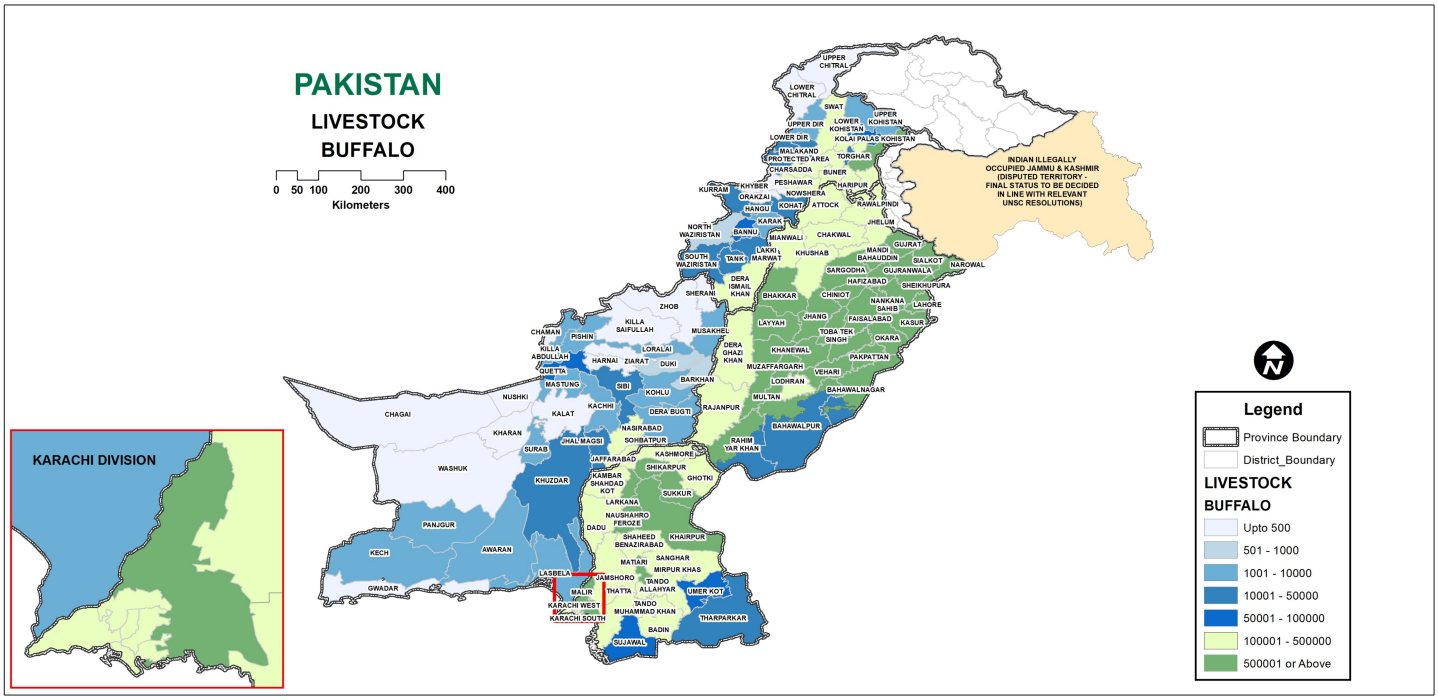


Figure 5.4: Livestock (Sheep) Population Pakistan from 7th Agricultural Census 2024

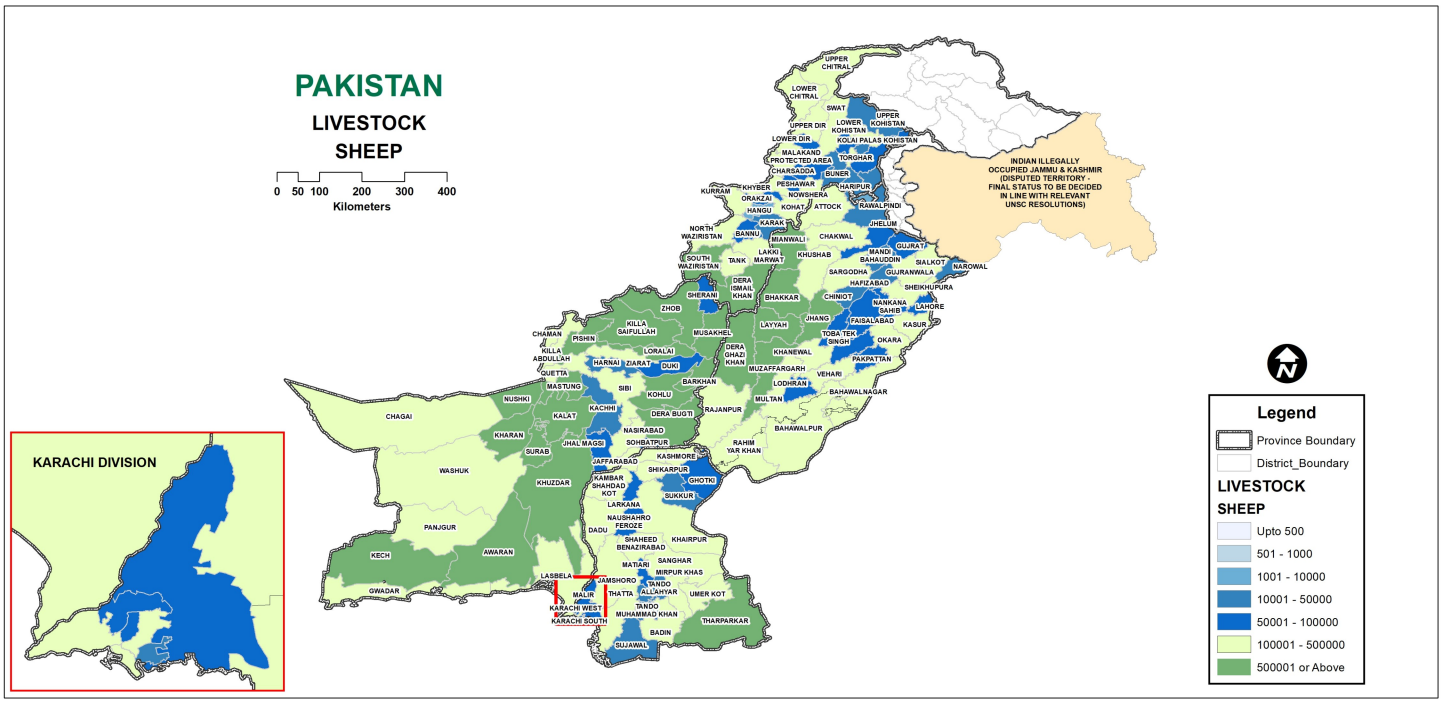
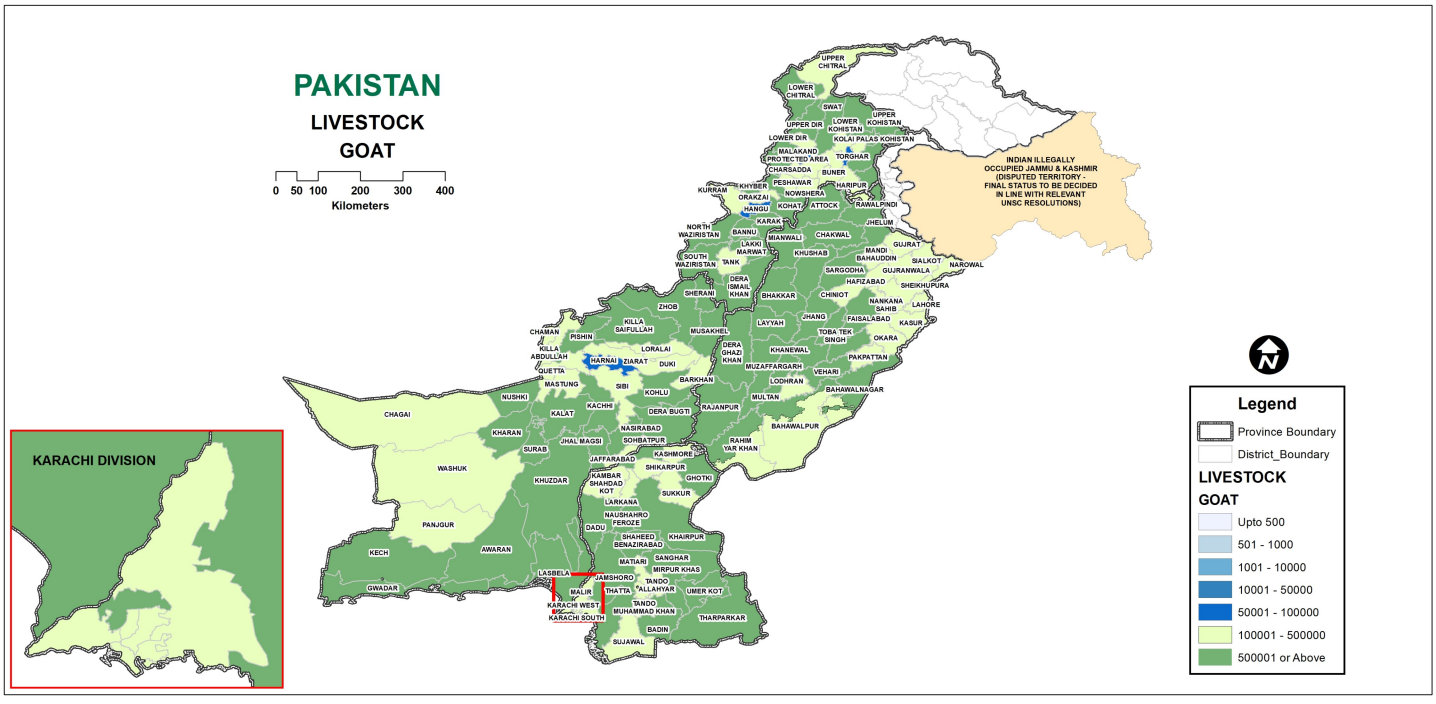


Figure 5.5: Livestock (Goats) Population Pakistan from 7th Agricultural Census 2024



Livestock Population in Punjab

The Punjab livestock for the year 2024 and 2006 is given in table below:

Table 5.3: Livestock Population in Punjab (In Millions)

Livestock Punjab	2006	2024
Cattle	14.412	26.968
Buffaloes	17.747	29.561
Sheep	6.362	13.385
Goats	19.831	31.309
Camels	0.199	0.252
Asses	2.232	2.403
Others*	0.226	0.347

* Others include Horses and Mules

Note: ICT values are covered in Punjab

Between 2006 and 2024, Punjab witnessed a significant increase in its livestock population, reaching approximately 104 million animals in 2024. This remarkable growth reaffirms Punjab's position as the leading province in Pakistan's livestock sector. The province has shown consistent progress in both dairy and meat-producing animals, owing to its fertile land, better infrastructure, and focus on integrated farming.

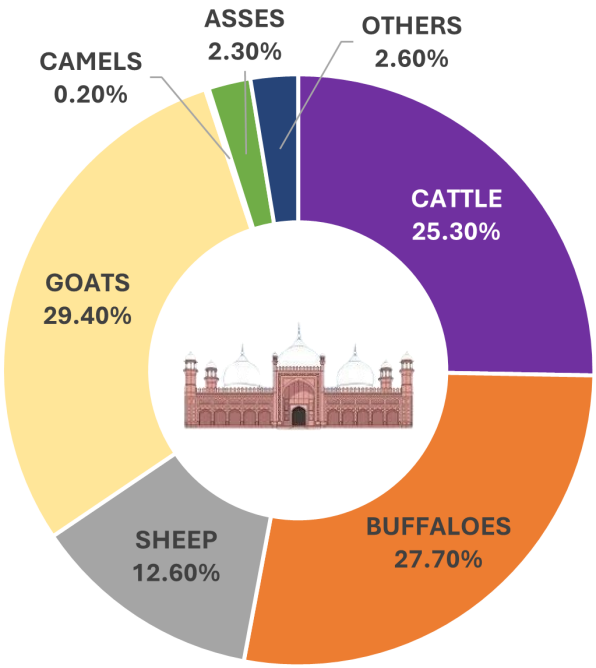
The Cattle population grew impressively from 14.4 million in 2006 to 27 million in 2024, reflecting an increase of over 87%. Similarly, Buffaloes, which are key to milk production in the region, increased from 17.7 million to 29.6 million during the same period. This rise is linked to improved breed management, veterinary services, and the increasing market demand for dairy products.

Small ruminants also exhibited strong growth trends. Sheep more than doubled, rising from 6.4 million to 13.4 million, while Goats climbed from 19.8 million to 31.3 million. These gains highlight the growing role of mixed crop-livestock systems and the adaptability of small ruminants to diverse farming conditions.

In addition to food-producing animals, draught and working animals saw steady growth. Horses increased from 0.163 million to 0.251 million, Mules from 0.063 million to 0.096 million, and Asses from 2.23 million to 2.40 million. These animals remain crucial in rural livelihoods, particularly in areas with limited mechanization.

Camels, though limited in number, rose slightly from 0.199 million to 0.252 million, reflecting their persistence in Punjab's drier southern and western zones. Overall, this growth reflects Punjab's intensive agriculture, high rural population density, and strong market linkages that continue to support and sustain livestock-based livelihoods.

Figure 5.2: Punjab Livestock Population Proportion 2024



Note: ICT values are covered in Punjab

Livestock Population in Sindh

The Sindh livestock for the year 2024 and 2006 is given in table below:

Table 5.4: Livestock Population in Sindh (In Millions)

Livestock Sindh	2006	2024
Cattle	6.925	11.206
Buffaloes	7.340	13.458
Sheep	3.959	4.742
Goats	12.572	19.013
Camels	0.278	0.365
Asses	1.005	1.081
Others*	0.065	0.087

** Others include Horses and Mules*

Sindh province has shown steady growth in its livestock sector over the 18-year period from 2006 to 2024, reaching a total livestock population of over 49.9 million animals. This growth reflects the province's adaptive livestock practices under semi-arid and irrigated conditions, supported by access to the Indus River and the agro-pastoral traditions of rural communities.

The Cattle population increased from 6.93 million in 2006 to 11.2 million in 2024, while Buffaloes—an essential source of dairy in the region—rose significantly from 7.34 million to 13.46 million. These gains point to improved breed selection, access to water resources, and strong dairy market integration around urban hubs like Karachi and Hyderabad.

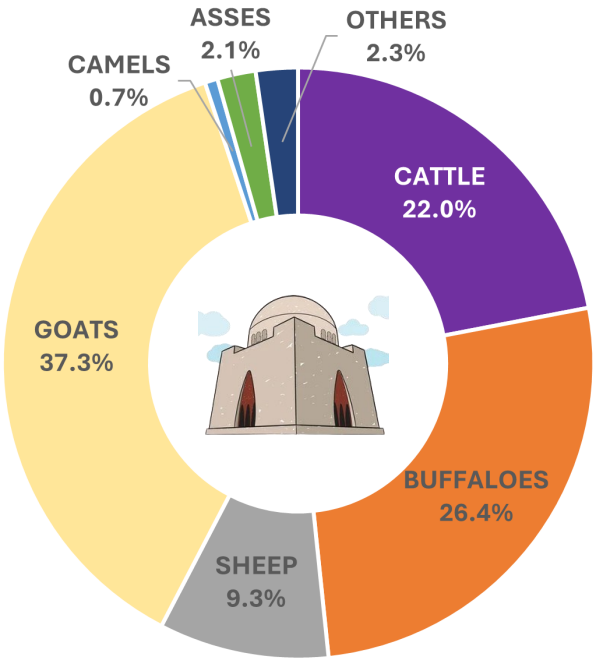
Among small ruminants, Goats exhibited robust growth, rising from 12.57 million to 19.01 million, consistent with the province's dryland herding systems and demand for goat meat during religious and cultural events. Sheep, however, grew modestly from 3.96 million to 4.74 million, suggesting a more localized role in Sindh's livestock economy, particularly in the Thar and desert regions.

Camel population increased from 0.278 million to 0.365 million, reflecting their importance in desert transportation and traditional livelihoods, especially in Tharparkar and surrounding districts.

In terms of working animals, Horses (0.052 million), Mules (0.035 million), and Asses (1.081 million) showed small but steady increases. These animals continue to play a role in local transport, especially in rural and peri-urban settings where mechanization is limited.

Overall, Sindh's livestock sector reflects a balance between traditional herding and modern dairy farming, supported by water access, urban market demand, and resilient pastoral systems.

Figure 5.6: Sindh Livestock Population Proportion 2024



Livestock Population in Khyber Pakhtunkhwa

The KPK livestock for the year 2024 and 2006 is given in table below:

Table 5.5: Livestock Population in Khyber Pakhtunkhwa (In Millions)

Livestock	2006	2024
Cattle	5.968	13.509
Buffaloes	1.927	3.936
Sheep	3.363	7.639
Goats	9.599	22.492
Camels	0.064	0.123
Asses	0.560	0.782
Others*	0.143	0.264

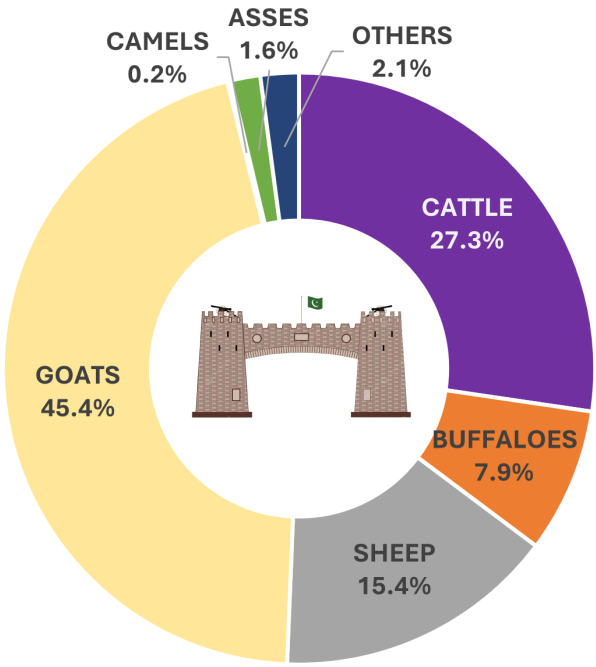
* Others include Horses and Mules

Khyber Pakhtunkhwa's livestock population grew significantly from 2006 to 2024, reaching 48.7 million animals. Cattle increased from 5.97 to 13.51 million, and Buffaloes doubled from 1.93 to 3.94 million, reflecting improved dairy practices.

The province now holds the third largest number of Goats in the country, rising from 9.6 to 22.49 million, while Sheep more than doubled from 3.36 to 7.64 million, benefiting from the province's hilly and grazing-friendly terrain.

Working animals also saw steady growth: Horses, Mules, and Asses collectively increased, maintaining their importance in remote areas. Camels grew modestly, and Yak/Zomo (0.002 million) were reported exclusively from KPK, highlighting its high-altitude livestock diversity.

Figure 5.7: Khyber Pakhtunkhwa Livestock Population Proportion 2024



Livestock Population in Balochistan

The Balochistan livestock for the year 2024 and 2006 is given in table below:

Table 5.6: Livestock Population in Balochistan (In Millions)

Livestock	2006	2024
Cattle	2.254	4.075
Buffaloes	0.320	0.664
Sheep	12.804	18.814
Goats	11.785	22.887
Camels	0.380	0.772
Asses	0.472	0.630
Others*	0.066	0.15

* Others include Horses and Mules

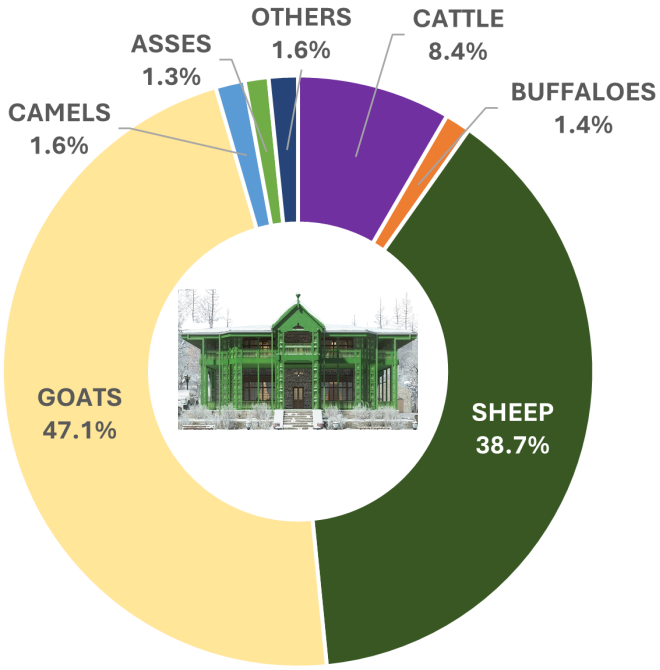
Balochistan's livestock population reached 47.9 million in 2024, showing steady growth across all animal categories. The province remains dominant in Sheep and Goats, which increased from 12.8 to 18.8 million and 11.8 to 22.9 million, respectively. This reflects its arid, pastoral landscape and reliance on extensive grazing systems.

Cattle grew from 2.25 to 4.08 million, and Buffaloes doubled from 0.32 to 0.66 million, indicating gradual shifts toward mixed farming in settled regions.

Camel population rose from 0.38 to 0.77 million, the highest in Pakistan, underlining their key role in desert transport and livelihoods.

Working animals such as Horses, Mules, and Asses also showed moderate growth, supporting rural mobility in the province's rugged terrain.

Figure 5.8: Balochistan Livestock Population Proportion 2024



ANNEX1: NUMBER AND AREA OF FARMS BY SIZE OF FARMS

(AREA IN ACRES)

SIZE OF FARM (ACRES)	NUMBER OF FARMS		FARM AREA		CULTIVATED AREA		CULTIVATED AREA AS % OF FARM AREA	AVERAGE SIZE OF FARM	
	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT		AREA	CULTIVATED AREA
1	2	3	4	5	6	7	8	9	10
PAKISTAN									
PRIVATE-FARMS TOTAL	11,701,584	100	59,300,696	100	52,787,664	100	89	5	5
UNDER 1.0	2,979,985	26	2,102,091	4	1,805,180	3	86	1	1
1.0 TO UNDER 2.5	4,044,180	35	8,245,445	14	7,684,365	15	93	2	2
2.5 TO UNDER 5.0	2,244,729	19	9,249,764	16	8,611,243	16	93	4	4
5.0 TO UNDER 7.5	1,144,045	10	9,352,993	16	8,569,075	16	92	8	8
7.5 TO UNDER 12.5	782,928	7	11,872,278	20	10,621,887	20	90	15	14
12.5 TO UNDER 25.0	357,145	3	9,382,219	16	8,160,138	16	87	26	23
25.0 TO UNDER 50.0	98,680	1	3,332,051	6	2,885,098	6	87	34	29
50.0 TO UNDER 100.0	32,934	0	2,114,111	4	1,786,060	3	85	64	54
100.0 AND ABOVE	16,958	0	3,649,743	6	2,664,619	5	73	215	157
KHYBERPAKHTUNKHWA									
PRIVATE-FARMS TOTAL	4,174,496	100	8,836,751	100	7,236,339	100	82	2	2
UNDER 1.0	1,731,535	42	1,229,931	14	1,020,902	14	83	1	1
1.0 TO UNDER 2.5	1,407,447	34	2,252,195	26	1,982,005	27	88	2	1
2.5 TO UNDER 5.0	776,705	19	1,774,798	20	1,484,050	21	84	2	2
5.0 TO UNDER 7.5	129,333	3	1,123,234	13	876,658	12	78	9	7
7.5 TO UNDER 12.5	93,170	2	1,187,712	13	935,425	13	79	13	10
12.5 TO UNDER 25.0	27,730	1	820,201	9	634,097	9	77	30	23
25.0 TO UNDER 50.0	5,378	0	185,275	2	113,900	2	62	35	21
50.0 TO UNDER 100.0	2,550	0	154,679	2	105,058	2	68	61	41
100.0 AND ABOVE	648	-	108,727	1	84,243	1	78	168	130
PUNJAB									
PRIVATE-FARMS TOTAL	5,050,236	100	31,039,972	100	29,644,855	100	96	6	6
UNDER 1.0	1,141,007	23	825,342	3	745,139	3	90	1	1
1.0 TO UNDER 2.5	1,689,757	34	4,062,580	13	3,960,909	13	98	2	2
2.5 TO UNDER 5.0	948,710	19	5,107,696	17	4,968,168	17	97	5	5
5.0 TO UNDER 7.5	566,150	11	5,143,449	17	4,973,779	17	97	9	9
7.5 TO UNDER 12.5	408,086	8	6,128,596	20	5,868,892	20	96	15	14
12.5 TO UNDER 25.0	206,059	4	4,927,126	16	4,618,621	16	94	24	22
25.0 TO UNDER 50.0	64,114	1	2,162,898	7	2,029,592	7	94	34	32
50.0 TO UNDER 100.0	18,612	0	1,212,845	4	1,143,427	4	94	65	61
100.0 AND ABOVE	7,742	0	1,469,441	5	1,336,329	5	91	190	173

NUMBER AND AREA OF FARMS BY SIZE OF FARMS

(AREA IN ACRES)

SIZE OF FARM (ACRES)	NUMBER OF FARMS		FARM AREA		CULTIVATED AREA		CULTIVATED AREA AS % OF FARM AREA	AVERAGE SIZE OF FARM	
	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT		AREA	CULTIVATED AREA
1	2	3	4	5	6	7	8	9	10
SINDH									
PRIVATE-FARMS TOTAL	1,826,420	100	9,190,482	100	8,108,200	100	88	5	4
UNDER 1.0	57,824	3	25,239	0	22,940	0	91	0	0
1.0 TO UNDER 2.5	729,086	40	1,173,281	13	1,139,786	14	97	2	2
2.5 TO UNDER 5.0	405,834	22	1,322,176	14	1,271,143	16	96	3	3
5.0 TO UNDER 7.5	344,300	19	1,522,403	17	1,454,035	18	96	4	4
7.5 TO UNDER 12.5	193,668	11	1,711,175	19	1,539,897	19	90	9	8
12.5 TO UNDER 25.0	69,686	4	1,272,502	14	1,123,889	14	88	18	16
25.0 TO UNDER 50.0	15,318	1	498,354	5	409,122	5	82	33	27
50.0 TO UNDER 100.0	5,409	0	334,522	4	286,906	4	86	62	53
100.0 AND ABOVE	5,295	0	1,330,831	15	860,483	11	65	251	163
BALOCHISTAN									
PRIVATE-FARMS TOTAL	633,307	100	10,177,960	100	7,750,215	100	76	16	12
UNDER 1.0	38,717	6	17,294	0	12,932	0	75	0	0
1.0 TO UNDER 2.5	215,024	34	752,348	7	597,593	8	79	4	3
2.5 TO UNDER 5.0	112,194	18	1,040,045	10	883,426	11	85	9	8
5.0 TO UNDER 7.5	103,560	16	1,558,814	15	1,260,051	16	81	15	12
7.5 TO UNDER 12.5	87,395	14	2,838,165	28	2,271,181	29	80	33	26
12.5 TO UNDER 25.0	53,326	8	2,356,308	23	1,778,047	23	76	44	33
25.0 TO UNDER 50.0	13,636	2	477,010	5	325,043	4	68	35	24
50.0 TO UNDER 100.0	6,273	1	406,537	4	246,286	3	61	65	39
100.0 AND ABOVE	3,182	1	731,440	7	375,654	5	51	230	118
ISLAMABAD CAPITAL TERRITORY									
PRIVATE-FARMS TOTAL	17,125	100	55,531	100	48,056	100	87	3	3
UNDER 1.0	10,902	64	4,287	8	3,267	7	76	0	0
1.0 TO UNDER 2.5	2,866	17	5,041	9	4,072	9	81	2	1
2.5 TO UNDER 5.0	1,286	8	5,049	9	4,456	9	88	4	4
5.0 TO UNDER 7.5	701	4	5,093	9	4,552	10	89	7	7
7.5 TO UNDER 12.5	609	4	6,630	12	6,492	14	98	11	11
12.5 TO UNDER 25.0	345	2	6,082	11	5,484	11	90	18	16
25.0 TO UNDER 50.0	234	1	8,515	15	7,441	16	87	36	32
50.0 TO UNDER 100.0	90	1	5,529	10	4,382	9	79	61	49
100.0 AND ABOVE	92	1	9,304	17	7,909	17	85	102	86

ANNEX 2: AGRICULTURAL CENSUS 2024 QUESTIONNAIRE

FORM-2
Questionnaire for
Agricultural Household

Confidential
GOVERNMENT OF PAKISTAN
PAKISTAN BUREAU OF STATISTICS

7th AGRICULTURAL CENSUS 2024

Part- 1 IDENTIFICATION & BASIC INFORMATION

1. District		2. Tehsil/Taluka		3. Tehsil/Taluka Code	
4. Kanungo Circle/ Supervising Tapa		5. Patwar Circle/ Tapa		6. Selected Mouza/ Block Code	
7. Name of selected Mouza/Block				8. Serial No. of selected household (Form-1 Col .23)	
9. Name of head of household with father's name & caste/tribe				10. Contact no/Phone no: _____	
11. Gender of head of the household	① Male ② Female		12. Household category:	① NCH ② MCH ③ Govt. ④ Others	
13. Operational Status of the household	① Individual Farming	② Joint farming	③ No Cultivation	14. If answer of Q-13 is "Joint farming" then number of households _____	

Part- 2 AGRICULTURAL LAND DETAILS

Details of agricultural land under possession (Including cultivated & uncultivated area)	No	Total agricultural land		Land in this mouza		Land in other mouzas		
		Acre	Kanal	Acre	Kanal	Acre	Kanal	District
		1		2		3		
1. Total owned area by the household(s)	☐							
2. Owned area given to others on rent, contract, share cropping, lease or rent free basis	☐							
3. Balance of owned area (1–2)	■							
4. Area taken on share cropping basis under possession	☐							
5. Area taken on contract or rent or lease basis under possession	☐							
6. Any other area under possession but not included above	☐							
7. Total area (cultivated and uncultivated) under possession (3+4+5+6)	■							
8. Number of fragments of total area (cultivated and uncultivated) under possession (Q.7, col.1)	→							

NOTE: If the answer of Q.7 is "No" then skip Part-3 to Part-6 and go to Part-7 of the questionnaire.

Part- 3 LAND USE

Detail of land use during the current crop year	Acre	Kanal	Detail of land use during the current crop year	Acre	Kanal
1. Area sown during current crop year (net sown area including orchard area)			5. Other cultivable waste area		
2. Area remained fallow in current crop year but was cultivated for at least once during previous crop year.			6. Wood land area (farm forest)		
3. Total cultivated area (1+2)			7. Uncultivable area including area under buildings, roads, water channel, eroded by rivers/sea and other area not available for cultivation		
4. Cultivable waste area due to water logging and salinity			**8. Total uncultivated area (4+5+6+7)**		

Part- 4 IRRIGATION

Detail of irrigated and unirrigated area during the current crop year	Acre	Kanal	Detail of irrigated and unirrigated area during the current crop year	Acre	Kanal
1. Area irrigated by canal only			8. Area irrigated by other sources		
2. Area irrigated by canal as well as tubewell / pump (mixed irrigation)			**9. Total irrigated area (1+2+3+4+5+6+7+8)**		
3. Area irrigated by tubewell or pump only			10. Out of total unirrigated area how much is flooded (*sailaba*)		
4. Area irrigated by ponds or small dams (*bandat*) or rivulet only			11. Out of total unirrigated area how much is rain-fed (*barrani*)		
5. Area irrigated by spring or hill ravines only			12. Cultivated area having irrigation facility but not irrigated due to some reason(s) in the current crop year		
6. Area irrigated by karez only			**13. Total unirrigated area (10+11+12)**		
7. Area irrigated by modern irrigation systems (Sprinkle / Drip / Centre Pivot)					

Part- 5 ORCHARD AREA, FRUIT & NON FRUIT TREES

1. Is there any orchard area under your possession? ① Yes ② No

2. If Q-1 is " Yes" then report the orchard area below:

3. Total orchard Area | Acre _____ Kanal _____

4. Orchard Irrigated area | Acre _____ Kanal _____

5. Are there any scattered fruit trees in the area under your possession? ① Yes ② No

6. If answer to Q- 1 or 5 is "Yes" then write below fruit name and code, the number of fruit trees according to the type and age.

Note: In case of Grapes and Banana write area only.

Fruit tree name	Code No.	Number of fruit trees			Number of fruit trees of bearing age	Number of fruit trees of non-bearing age
		In orchard	Scattered	Total		
1	2	3	4	5	6	7
		Area Acres	Kanal			
Grapes	30					
Banana	31					

Fruit Trees and their Codes for Q-6

01. Mango	17. Papaya
02. Guava	18. Cherry
03. Dates	19. Ber
04. Malta/Mosami	20. Loquat
05. Kino/Fruiter	21. Mulberry
06. Lemon	22. Percimen
07. Sweet Lime	23. Almond
08. Apple	24. Walnut
09. Plum	25. Olive
10. Peaches	26. Shereefa
11. Pomegranate	27. Falsa
12. Apricot	28. Fig
13. Pear	29. Other fruit tree
14. Jamun	30. Grapes
15. Litchi	31. Banana
16. Chikoo	

7. Are there any non-fruit trees on the area under your possession? ① Yes ② No

If the answer is "Yes" then record below the number of trees according to the type

Type of tree	Sheshum	Kikar	Nim, Dhrek, Bakain	Cirus/Sarian	Simbal	Poplar, Euclyptus	Pine species (Chir, Parrtal, Kele, Dwedar)	Other Non-Fruit trees
	1	2	3	4	5	6	7	8
Numbers of tree								

Part- 6 CROPS IN THE CURRENT YEAR

1. How much area covered with Tunnel Farming/ Green House Technology in last 12 Months? ① Yes ② No

If answer is "Yes" then write the area Acre _____ Kanal _____

Rabi Crops

2. Did you sow any crop during current "Rabi"? ① Yes ② No

If answer is "Yes" record below the name, code number and area of crops sown, otherwise skip to Q-3.

Crop Name & Code	Total Crop Area		Irrigated Area	
	Acre	Kanal	Acre	Kanal
1	2		3	
Total Rabi Crops				

Kharif Crops

3. Did you sow any crop during current "Kharif"? ① Yes ② No

If answer is "Yes" record below the name, code number and area of crops sown, otherwise skip to Part-7

Crop Name & Code	Total Crop Area		Irrigated Area	
	Acre	Kanal	Acre	Kanal
1	2		3	
Total Kharif Crops				

Rabi Crops & Codes for Q- 2

01. Wheat	07. Soyabean	16. Other Rabi Vegetables
02. Barley	08. Castro Seed	17. Rabi Pulses
03. Gram	09. Tobacco (Desi & Virginia)	18. Strawberry
04. Rabi Maize for grain	10.Rabi potatoes	19. Rabi Fodders (Oats, Barseem, Lucerne, etc.)
05. Sunflower	11. Peas	20. Other Rabi Crops
06. Mustard, Toria, Canola, Raya, Taramira, etc	12. Sugar Beet	
	13. Tomatoes	
	14. Onion	
	15. Bamboo	

Kharif Crops & Codes for Q- 3

51. Rice Basmati	58. Moong	66. Kharif tomatoes
52. Rice Irri	59. Mash	67. Melon, Water-Melon, Sarda, Garma, etc.
53. Rice other varieties	60. Other Kharif Pulses	68. Gawara
54. Kharif Maize for grain	61. Sesamum	69. Kharif Fodders (Maize, Jawar, Bajra, etc.)
55. Sugarcane	62. Groundnuts	70. Other Kharif Crops
56. Cotton	63. Other Kharif Oil Seed	71. Other Kharif Vegetables
57. Jawar, Bajra for grain	64. Kharif Potatoes	
	65. Chillies	

Part- 7 OWNERSHIP AND USE OF AGRICULTURAL MACHINERY

1. Did you use tractor, bullocks (or other animals) or both during last 12 months? (Marked relevant box)

①	Only tractor	②	Only bullocks or other animals	③	Tractor and bullocks etc.	④	None	If Q1=2 or 4, skip to Q.10

2. Do you own a tractor or use on rent? ① owned ② Rent ③ Both If Q2=2 , skip to Q.9

3. Number of owned Tractors (workable condition) Numbers:_____

4.Name of tractor ? (Listed on page.7)	5. Model of tracter? (Listed on page.7)	6.Tractor's Horse Power ? (Listed on page.7)	7. Type of Ownership ① individual ② Joint ③ Cooperative	8. Did you rent out your tractor to other during last 12 months? ① Yes ② No

9. Mark from listed below works, for which tractor used during last 12 months: (More than one options are possible)

Ⓐ Land Repair & leveling	Ⓑ Crop sowing	Ⓒ Hoeing	Ⓓ Fertilizer spreading	Ⓔ Crop threshing	Ⓕ Used trolly for agriculture purpose
Ⓖ Ploughing	Ⓗ Crop spraying	Ⓘ Band making	Ⓙ Crop cutting	Ⓚ Tubewell/pump operating	Ⓛ Other work(specify)

10.Do you own Tubewell or use on rent? ① Own ② Rent ③ Both ④ None If Q10=2 or 4, skip to Q.17

11. Number of Tubewell/Pumps owned (workable condition) Number:_____

12: Types of tubewell		13. Operating Power:		14. Electric Motor/Engine Horse Power:	15. Type of Ownership:	16. Depth of underground water (in feet):
Centrifugal Tubewell	Turbine Tubewell	Electricity	Diesel	Horse Power_____	Individual	_____ Feet(s)
Submersible Pump	Pump Installed on Well	Solar	Petrol		Joint	
Lift Pump		Others (specify)			Cooperative	

17. Please indicate agricultural machinery and implements used during last 12 months: **(List at Page No.8)**

Name of machine and implements	Code	On Rent (Number)	Owned (Number)
1	2	3	4

Part-8 Cattle, Buffaloes

Cattle: 1- Does this household possess any cattle? ① Yes ② No

If "Yes" then write number of animals in relevant breed column, If "No" skip to Q. 13.

Type of Cattle Animals		Total Animals	Write below breed name & code and number of animals									Cattle breeds and their codes
		1	2	3	4	5	6	7	8	9	10	01.Sahiwal
Breed names and code →												02.Red Sindhi
Bullocks	2.Bulls 3 years and above for breeding only											03.Thari
	3.Other bullocks 3 years and above											04.Bhag Nari
Cows	4.Cows 3 years and above in milk											05.Rojhan
	5.Dry cows 3 years and above											06.Dhanni
	6.Cows 3 years and above not yet calved											07.Kankrej
Youngstock Male	7. Male cattle under 1 year											08.Lohani
	8. Male cattle1 year and above but less than 3 years											09.Achai
Youngstock Female	9. Female cattle under 1 year											10.Gabrali
	10.Female cattle1year and above but less than 3 years											11.Wilayti
11. Total cattle (male, female & youngstock) (2+3+4+5+6+7+8+9+10)												12.Cross Breed
12. Total daily milk of cow(s) reported in Q.4.(in liters) (morning+evening) in 24 hours												13.Cholistani
												14.Dajal
												15.Haryana
												16.Balochistan
												17.Nari Master
												18.Others (Specify)

Buffaloes:13. Does this household posses any buffalo? ① Yes ② No						If "Yes" then write number of animals in relevant box, if "No" then skip to Part.9.
Type of Buffalo Animals		Total Animals	Nilli Ravi	Kundi	AzaKhali	Others (Specify)
		1	2	3	4	5
Buffalo Bulls	14. Buffalo bulls 3 years & above for breeding only					
	15. Other buffalo bulls 3 years & above					
Buffaloes	16. Buffaloes 3 years and above in milk					
	17. Dry buffaloes 3 years and above					
	18. Buffaloes 3 years and above not yet calved					
Youngstock Male	19. Male buffaloes under 1 year					
	20. Male buffaloes 1 year and above but less than 3 years					
Youngstock Female	21. Female buffaloes under 1 year					
	22. Female buffaloes 1 year and above but less than 3 years					
23. Total buffaloes (male, female & youngstock) (14+15+16+17+18+19+20+21+22)						
24. Total daily milk of buffalo(s) reported in Q.16. (in liters) (morning+evening) in 24 hours						

Part-9 Sheep, Goats

Sheep: 1 Does this household possess any sheep? ① Yes ② No

If "Yes" then write number of animals in relevant col., If "No" skip to Q. 6.

Type of Sheep Animals	**Total**	Write below Breed name & code and number of animals									Sheep Breed and their codes		
	1	2	3	4	5	6	7	8	9	10			
Breed Name and code →											01.Lohi 02.Kajli 03.Thalli 04.Buchi 05.Becanery 06.Harrnai 07.Balochi 08.Bibrik 09.Damani 10.Waziri 11.Awasi	12.Hashtnagari 13.Balkhi 14.Kaghani 15.Rakhshani 16.Koka 17.Kachhi 18.Kail 19.Mundri 20.Salt Range 21.Sipli 22.Khadali	23.Kairi 24.Madak Lashti 25.Ramghani 26.Ariri/ Kutta 27.Terahi 28.Ghalji 29.Mazai 30.Quraqul 31.Dumbhi 32.Machani 33.Other (Specify)
2. Male sheep 1 year and above													
3. Female sheep 1 year and above													
4. Youngstock under 1 year													
5.Total Sheep (Male, Female& Youngstock) **(2+3+4)**													

Goats: 6. This household possess any goat? ① Yes ② No

If "Yes" then write number of animals in relevant col., If "No" skip to Part 10.

Type of Goat Animals	**Total**	Write below Breed name & code and number of animals									**Goat Breeds and their codes**	
	1	2	3	4	5	6	7	8	9	10		
Breed Name and code →											01.Teddy 02.Beetal 03.Kamori 04.Kaghani 05.Damani 06.Dera Din Panah 07.Nachi 08.Jattan 09.Barbari 10.Pateri	11.Lehrri 12.Chaparr 13.Nukri 14.Makhi Chinni 15. Jattal 16.Khurasani 17.Surgalai 18.Guddi 19.Angora 20.Thari 21.Others (specify)
7. Male goats 1 year and above												
8. Female goats 1 year and above in-milk in human use												
9. Female goats 1 year and above in-milk												
10.Dry Female goats 1 year and above												
11. Female goats 1 year and above and calved												
12. Youngstock under 1 year												
13. Total Goats (Male, Female& Youngstock) **(7+8+9+10+11+12)**												
14. Total daily milk of goats reported in Q.8 (morning+evening) in 24 hours (in human use)(in liters)												

Part- 10 Camels, Horses, Mules & Asses

Camels- 1. Does this household possess any camel? ① Yes ② No If "Yes" then write number of animals in relevant col., If "No" skip to Part 9.

Types of Camel Animal	Total	Barhela	Marheca	Brahwi	Kharani	Laasi	Raidi	Kohi	Raigi	Galmani	Guddi	Maya	Khadeer	Others
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2. Male camels 3 years and above														
3. Female camels 3 years and above in milk														
4. Other dry female camels 3 years and above														
5. Male camels less than 3 years														
6. Female camels less than 3 years														
7.Total Camels (2+3+4+5+6)														
8. Total daily milk of female camel(s) reported in Q.3 in 24 hours (in Liters)														

Horses- 9. Does this household possess any horse?

If "Yes" then write number of animals.

If "No" skip to Q.13.

① Yes ② No

Types of Horses	Numbers
10. Horses/mares 3 years and above	
11. Horses/mares less than 3 years	
12. Total horses/mares (10+11)	

MULES / ASSES 13. Does this household possess any mule or ass?

① Yes ② No If "Yes" then write number of animals. If "No" skip to Part-11

Type of Mules	Number	Type of Asses	Number
14. Mules 3 years and above		17. Asses 3 years and above	
15. Mules less then 3 years		18. Asses less then 3 years	
16. Total Mules (14+15)		**16. Total Asses (17+18)**	

Part-11 Yak/Dzo/Dzomo

1. Does this household possess any male or female Yak/Dzo? ① Yes ② No

If answer "Yes" then write number of animals. If "No" Skip to Part-12.

Type of Yak/Dzo/Dzomo Animal	Number			Type of Yak/Dzo/Dzomo Animal	Number		
	Total	Yak	Dzo/ Dzomo		Total	Yak	Dzo/ Dzomo
	1	2	3		1	2	3
2.Male Yak/Dzo 3 years and above				6. Female Yak/Dzomo less then 3 years			
3. Female Yak/Dzomo 3 years and above In-milk				7. Total Yak/Dzo/Dzomo (Male, Female) (2+3+4+5+6)			
4. Other Female Yak/Dzomo 3 years and above				8. Total daily milk of female Yak/Dzomo(s) reported in Q.3 (morning+evening) (in liters)			
5. Male Yak/Dzo less then 3 years							

Part-12 Changes & Veterinary Treatment of Animals During Last 12 Months

Note: The following questions must be asked even if no animal is reported on the day of enumeration.

During Last 12 months		Bulls/ Bullocks	Cows	Cattle Youngstock Male	Cattle Youngstock Female	Male Buffaloes	Female Buffaloes	Buffalo Youngstock Male	Buffalo Youngstock Female	Sheep (male/Female)	Sheep Youngstock	Goats (Male/Female)	Goat Youngstock	Camels (Male/Female)	Camel Youngstock	Yak Breed	Dzo Breed	Total Animals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.Vaccinated																		
2. Fallen sick																		
3. Treated																		
4. Artificially Inseminated																		
Slaughtered	5. On Eid																	
	6. On other days																	
7. Sold																		
8. Purchased																		
9. Died																		
10. Born																		

Part-13 Agricultural loan and sources of income

1. Did your household take any loan for agricultural/livestock purposes during the last 12 months
. ① Yes ② No If answer of Q.1 is 2 then go to Q.4

2. If the answer of Q.1 is "Yes", then what was the purpose of the loan. (More than one answers are possible)

Ⓐ For Agricultural	Ⓑ For Livestock	Ⓒ For Agricultural Machinery

3. If Q.1 answer is "Yes" than tick the relevant box of debt source. (More than one answers are possible)

Ⓐ Commission agents	Ⓑ Other financial institutions	Ⓒ Zari Taraqiati Bank
Ⓓ Relatives/friends	Ⓔ All NGO's	Ⓕ All commercial banks

4. If any member of the household earn income from sources other than own agriculture or livestock, identify that source by marking the relevant box, otherwise mark box for "none".

Ⓐ Service/ Pension	Ⓑ Trade/sale/purchase/ shopkeeping / handicrafts	Ⓒ Agricultural labor	Ⓓ Non agricultural labor
Ⓔ Foreign remittances	Ⓕ Income from property (agri. land/house/shop rent)	Ⓖ Income from agricultural machinery	Ⓗ Poultry farming
Ⓘ Fancy birds	Ⓙ Ostrich farming	Ⓚ Fish Farming	Ⓛ Other sources
Ⓜ None			

5. If any source of income is reported in Q-4, then indicate the basic source of income of this household.

① Own agriculture / livestock ② Select the possible answer from question No.4

ATTESTATION

Name of Respondent & Cell No.		Respondents Relation to Owner	
Enumerators Name		Name of Checker	
Enumerators Designation		Designation of Checker	
Enumerators Cell/Phone No.		Checkers Cell/Phone No.	
Date of Interview		Date of Checking	

فہرست ٹریکٹر و کوڈ

فارم-2، حصہ 7 کے سوال 4، 5 اور 6 میں اندراج کیجئے

ٹریکٹر کوڈ	ٹریکٹر کا نام	ماڈل کوڈ	ٹریکٹر ماڈل	ہارس پاور
1	میسی فرگوسن Massey Ferguson	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15	MF 590 MF 470 MF 455 MF 385& 385 4WD MF 375 & 375 S MF 360 MF 350 MF 290 MF 265 MF 260 MF 240 MF 210 MF 465 MF135 Others	99 120 100 85 75 60 50 90 65 60 50 60 60 45
2	نیو ہالینڈ New Holland	16 17 18 19 20 21	NH 55-56 NH 60-56 NH 70-56 NH 304 NH Td 95 s Others	55 60 85 35 105
3	فیٹ/نیو ہالینڈ فیٹ /الغازی Fiat/ New Holland fiat / Alghazi	22 23 24 25 26 27	NHF 640 NHF 640-S NHF 480 NHF 480S AL-Ghazi Others	75 85 50 55 65
4	فورڈ/یورو فورڈ Ford / Euro ford	28 29 30 31 32 33 34 35 36 37	EF 5880 EF 4610 EF 4600 EF 4560 EF 4000 EF 3850 EF 3610 EF 3600 EF 3000 Others	80 64 64 60 62 50 47 45 46
5	آئی ایم ٹی/بل پاور IMT/BULL POWER	38 39 40 41 42 43 44 45	BP 585 BP 533 BP 540 BP 549 BP 560 BP 565 BP 577 Others	85 41 52 50 67 60 76
6	بیلارس BELARUS	46 47 48 49 50 51 52	MTZ-50 UMZ-60 Belarus-510 Belarus-520 Belarus-511 Belarus-800 Others	55 60 57 62 57 80
7	یونیورسل Universal	53 54 55	U-520 U-335 Others	52
8	ارسس URSUS	56 57 58 59	2812 3512 4512 Others	50 60 75
9	ٹوموسون TUMOSAN	60 61 62 63 64	TUMO-8095 2WD TUMO-8095 4WD TUMO-8195 4WD TUMO-8185 4WD Others	95 95 95 85
10	وائی ٹی او YTO	65 66 67 68 69	YTO-EX-800 2WD (HM) YTO-EF-804 4WD YTO-EF-800 2WD YTO-EMF-604 4WD Others	80 80 80 60
11	راہی RAHI	70 71 72 73	RAHI-SR-550 RAHI-SR-650 RAHI-SR-750 Others	55 64 75
12	دیوان DEWAN	74 75 76	DEW-DF-550 DEW-DF-650 Others	55 65
13	انٹرنیشنل INTNATIONAL	77		
99	دیگر Others	99		

01-کمبائن ہاویسٹر 01-Combined Harvester	25- پوٹیٹو (آلو) پلانٹر 25- Potato Planter	49-رائس سٹرا شریڈر 49-Rice Straw Shredder
02- بلڈوزر 02- Bulldozer	26- کاٹن پلانٹر 26- Cotton Planter	50-سٹرا بیلر 50- Straw Bailer
03- کلٹیویٹر (ہل) 03- Cultivator	27- ملٹی کراپ پلانٹر 27- Multi Crop Planter	51- سائیلیج بیلر 51- Silage Bailer
04- بیلڈ (کراہ) فرنٹ/بیک 04-Blade (Front/back)	28-ویجیٹیبل سیڈر 28- Vegetable Seeder	Hay-52 بیل 52-Hay Bailer
05- لیزر لیولر 05-Laser Leveler	29-لہسن پلانٹر 29- Garlic Planter	53-چارہ کٹر کم چاپر 53- Fodder Cutter cum chopper
06- ایم بی پلو (مٹی پلٹنے والا ہل) 06- M B Plough	30-رائس ٹرانسپلانٹر 30- Rice Transplanter	54- چارہ کٹائی مشین 54- Fodder Cutter
07- ڈسک پلو (تھالی والا ہل) 07- Disk Plough	31- ہیپی سیڈر 31- Happy Seeder	55- چارہ کیلئے ٹوکا 55- Fodder Chopper
08- چیزل پلو 08- Chisel Plough	32- رائس نرسری ریزنگ مشین 32- Rice Nursery Raising Machine	56-سپرے مشین (دستی/بیٹری) 56- Spray Machine (Manual/Bettry)
09- سب سوئلر 09- Subsoiler	33- آلو ڈگر 33- Potato Digger	57-بوم سپریئر 57- Boom Sprayer
10- رجر 10- Ridger	34- مونگپھلی ڈگر 34- Peanut Digger	58- پاور نیپ سیک سپریئر 58- Power Knapsack Sprayer
11- پاور ٹلر 11- Power Tiller	35-گنے کیلئے بیلنا 35- Sugarcane Crusher	59-مسٹ بلوئر 59- Mist Blower
12- پڈلر 12- Puddler	36-کارن پکر خودکار 36- Corn Picker Auto	60- ہائڈرولک بلوئر 60- Hydraulic Blower
13- روٹاویٹر 13- Rota waiter	37-تھریشر 37- Wheat Thresher	61-ویل بیرو 61- Wheel Barrow Sprayer
14- ڈسک ہیرو 14- Disk Harrow	38-ریپر/کٹر بائنڈر 38- Reaper/Cutter Binder	62- آرچرڈ گن سپریئر 62- Orchard Gun Sprayer
15- ملٹی کراپ ڈرل 15- Multi Crop Drill	39-میز شیلر 39- Maize Sheller	63- آرچرڈ ایئر بلاسٹ سپریئر 63- Orchard Air Blast Sprayer
16- پلسز ڈرل 16- Pulses Drill	40-شوگر کین ہارویسٹر 40- Sugarcane Harvester	64- آرچرڈ ٹریلڈ سپریئر 64-Orchard Trailed Sprayer
17- ربیع ڈرل 17- Rabi Drill	41-شوگر کین بڈ کٹر 41- Sugarcane Bud Cutter	65- کنو واشر گریڈر 65- Citrus Washer Grader
18- زیرو ٹلیج ڈرل 18- Zero Tillage Drill	42-مونگپھلی تھریشر 42- Peanut Thresher	66- کھاد بکھیرنے والا 66- Fertilizer Broadcaster
19- کولٹر ڈرل 19- Coulter Drill	43-لہسن ہارویسٹر 43- Garlic Harvester	67- پوسٹ ہول ڈگر 67- Post Hole Digger
20- بینڈ پلیسمنٹ ڈرل 20- Band Placement Drill	44-گاجر ہارویسٹر 44- Carrot Harvester	68- ٹری پرونر 68-Tree Pruner
21- ڈرائی ڈرل 21- Dry Drill	45-سبزی/گاجر واشنگ مشین 45- Vegetable/Carrot Washing Machine	69- ٹرالی 69- Trolley
22- گراؤنڈ نٹ پلانٹر/ڈرل 22- Peanut Drill/Planter	46-سیڈ گریڈر/کلینر 46- Seed Grader/Cleaner	70- پانی کا ٹینک 70- Water Tank
23- میز پلانٹر 23- Maize Planter	47-شوگر کین سٹبل شیور 47- Sugarcane Stubble Shaver	99-دیگر (وضاحت کریں) 99- Other (Specify)
24- شوگر کین پلانٹر 24- Sugarcane Planter	48-ویٹ سٹرا چاپر بلور 48- Wheat Straw Chopper Blower	

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