

GOVERNMENT OF GOA

AGRICULTURAL CENSUS

***REPORT ON MAIN CENSUS***  
***2005 - 06***  
***GOA***

*DIRECTORATE OF PLANNING,  
STATISTICS & EVALUATION  
PANAJI – GOA*

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## PREFACE

The Directorate of Planning, Statistics & Evaluation has conducted the Agricultural Census (2005-06) which is eighth in the series with the Agricultural year 2005-06 as the reference period.

The data for Agricultural Census 2005-06 has been collected through the field inquiries from all the operational holdings from the selected villages. Since there is no primary system in Goa the data for the current census was collected through random sampling method. The 50 percent of the villages/wards in each Taluka were selected by using random sampling method and in each selected village/ward cent percent of the operational holdings were covered in the census. The selected villages were covered for collection of information on number and area of operational holdings according to size classes, land utilization, crop wise and source wise irrigated area, cropping pattern, tenancy, etc.

In order to ensure uniformity and comparability, the concepts and definitions adopted by the Government of India, Ministry of Agriculture, were used. This report gives a narrative account of the historical background, physical and demographic features, economy of the territory, system of collection of agricultural statistics, etc.

The Directorate is grateful to the large number of cultivators who spared time to provide detailed information required for this census. Similarly the Gram Sevaks, Talathis, Panchayat Secretaries, Investigators, Statistical Assistants, etc. who worked as Enumerators and Supervisors under the census, the Block Development Officers, Research Assistants of this Directorate who functioned as Taluka Level Charge Officers and Additional Taluka Level Charge Officers also deserve the appreciation.

The Co-ordination Division of this Directorate headed by Shri Vijay B. Saxena had shared the main burden in successfully conducting this census right from the beginning. The preliminary draft of this report was prepared by Shri. Suresh Naik, Research Assistant, with the help of Smt. Vandana Naik Panvelkar, Statistical Assistant, and Shri. Mayuresh Shetye, Investigator, has taken the initiative to computerize the report. The valuable guidance of Shri Jagdish N. Shirodkar, Statistical Officer, in preparing the report is equally appreciated.

It is hoped that the data published in this report would be useful for formulation and implementation of Agricultural Development Programmes.

Anand Sherkhane  
Director & Dy. Agricultural  
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Panaji – Goa  
Dated: 04-07-2011

## CHAPTER I

### INTRODUCTION

1.1 Agriculture holds a key position and constitutes a predominant sector of the economy of Goa. The relevant information for micro level agricultural planning is gathered through the Agricultural Census. It is gathered on an operational holding basis. An “Operational Holding” for the purpose of Agricultural Census is defined as “all land which is used wholly or partly for agricultural production and operated directly or managed as one technical unit by one person alone or with others without regard to the title, legal form, size or location. A holding may consist of one or more parcels of land provided they are within the same Talukas and form part of the same management and has the same means of production such as labour force, machinery and animals”.

1.1.2 A World Agricultural Census was organized in 1924 by the International Institute of Agriculture, Rome. India participated in the World Agricultural Census in 1950 and in 1960. The data in these Censuses was collected through the National Sample Survey Organization.

1.1.3 The first Agricultural Census was conducted with the reference year 1970-71. The second Agricultural Census was conducted in 1976-77. The third Agricultural Census was carried out in 1980-81, the fourth in 1985-86, the fifth in 1990-91, the sixth in 1995-96 and the seventh in 2000-01. The present census 2005-06 was the eighth one in the series of such census organised by the Ministry of Agriculture, Govt. of India, as a Centrally Sponsored Scheme.

### **1.2 Agricultural Census in the State of Goa**

The erstwhile Union Territory of Goa, Daman & Diu had participated in the 1970-71 Census for the first time. The Census was conducted in accordance with the guidelines issued by the Ministry of Agriculture, Govt. of India, in order to ensure uniformity and comparability of census data between the States and Centre. For the census of 1970-71 the data had to be collected through a special survey conducted for the purpose of paying house to house visits. The method of retabulation of data from land records could not be adopted due to the absence of the cadastral survey and non-existence of the primary reporting system. The second census was conducted with 1976-77 as the reference year as a part of National Programme. The Third Agricultural Census was carried out as Central Scheme during 1980-81. The entire operation, unlike the last census was carried out in two phases namely Main Census and Input Survey. The fourth Agricultural Census was undertaken in the year 1985-86. Fifth Agricultural Census was conducted in 1990-91; the sixth Agricultural Census was carried out during

1995-96. The Seventh Agricultural Census was carried out during 2000-01. The number of operational holdings and area operated as revealed under different censuses is as below:

<b>Census</b>	<b>No. of operational holdings</b>	<b>Area operated (in Ha.)</b>
1970-71	68961	92421
1976-77	72403	82667
1980-81	75537	89656
1985-86	75619	78129
1990-91	71922	66529
1995-96	70399	59022
2000-01	64080	53924

1.2.1 The present Agricultural Census, eighth in the series was conducted in the state with reference year 2005-06. Data were collected from each of the operational holding in the selected villages covering aspects such as size of holding, tenure and tenancy status, cropping pattern used, sources of irrigation used etc. during the census period. The Secretary (Planning) was appointed as the Agricultural Census Commissioner and the Director of Planning, Statistics and Evaluation was appointed as Deputy Agricultural Census Commissioner. The Collector of North Goa and South Goa Districts were appointed as District Agricultural Census Officers and Mamlatdars of the respective Talukas as Charge Officers for smooth and efficient conduct of the Agricultural Census. The Deputy Directors, Statistical Officers, Research Assistants of Directorate of Planning, Statistics and Evaluation were appointed as Additional Charge Officers. Village Panchayat Secretaries, Talathis, Gram Sevaks were appointed as Enumerators. The Circle Inspectors, Extension Officers and Statistical Assistants of the Common Statistical Cadre were appointed as Supervisors.

## **CHAPTER II**

### **STATE ECONOMY**

2.1 The present Agricultural Census with 2005-06 as the reference year was the eighth in series of such censuses conducted in the State of Goa, as part of National Programme. As in the last Census, this Census was also carried out in two phases called the “Main Census” with the agricultural year 2005-06 as the year of reference and the second phase called the “Input Survey” with the year 2006-07 as the reference. Under the “Main Census” information pertaining to five broad characteristics, viz. i) number and area of operational holdings according to different sizes, ii) tenure and tenancy, iii) land utilization, iv) irrigation, source wise and Cropwise and v) cropping pattern was collected.

2.1.2 Operational holding was the primary unit for collection of data so as to provide an integrated picture of the structure of the States agriculture which is a fundamental unit of decision making for formulation of plans for improving the lot of the individual cultivation especially small and marginal farmers.

2.1.3 For the 2005-06 Agricultural Census, the Ministry of Agriculture, Government of India, had suggested two methods. Under the first method, a complete enumeration was to be carried out in respect of items for which information was readily available from the revenue records directly by retabulation without making any further inquiry from the operational holder. This method was, however, not suitable for this state for lack of availability of land records at village level from the cadastral survey as also for lack of data from primary reporting system which was not introduced. As such the alternative method of enquiry on a sample basis was adopted in this state.

2.1.4 For carrying out the survey, a two stage random sampling design with taluka as the stratum was adopted. The village was the first stage unit of sampling and operational holder was the second stage unit. From each taluka/town 50 percent of the village/wards were selected by simple random sampling method. In each selected village/ward cent per cent of operational holdings were covered for the main census.

## **2.2 Organization and administrative arrangements**

A special cell comprising a Dy. Director, a Research Assistant, a Jr. Stenographer, L.D.C. cum typist and a Peon was created for the census purpose in the Directorate of Planning, Statistics and Evaluation. The Dy. Director of this cell was operational in charge of the census while the Director of the Directorate of Planning, Statistics and Evaluation was Dy. Agricultural Census Commissioner for the state who took overall responsibility of the census work. The Secretary (Planning), Govt. of Goa was appointed as the Agricultural Census Commissioner. The Taluka Mamlatdars were appointed as the Charge Officers in their respective talukas under the overall supervision of the Collectors who were appointed as District Census Charge Officers.

### **2.3 Training of personnel:**

Before launching the main census, a two-tier training programme was drawn according to plan. First, the State level training seminar for the Charge Officers was held at Panaji. In the second phase training to field workers was imparted in the training camps at taluka level.

2.3.2 A meeting of supervisors for discussing the various check points while supervising and spot checking during the field work was also organized by the Directorate of Planning, Statistics and Evaluation.

### **2.4 Schedules and instructions:**

The Directorate of Planning, Statistics and Evaluation drafted the schedules and instruction for conducting the census on the basis of the model schedules provided by the Ministry of Agriculture, Government of India. During the training various schedules to be canvassed by the enumerators were discussed thoroughly.

2.4.2 In order to ensure proper direction and co-ordination of the Agricultural Census operations, a State Level Co-ordination Committee was constituted under the Chairmanship of the Commissioner and Secretary (Planning), the Collectors of North and South Goa, Director of Agriculture, Project Director, Rural Development Agency, Director of Computer Centre, representative of National Informatic Centre, Pune and representative of Ministry of Agriculture, Government of India being the Members and Director, Directorate of Planning, Statistics and Evaluation, being the Member Secretary. A State Level Conference was organised by the Director, Directorate of Planning, Statistics and Evaluation to discuss all the schedules and instructions and arrangements for training and other administrative methods.

2.4.3 In order to obtain realistic data a press note was released through the Directorate of Information in the local dailies giving information about the Main Census 2000-01, personnel engaged, type of enquiry proposed etc. requesting co-operation from the public in giving the required information correctly.

## CHAPTER III

### CONCEPTS, METHODOLOGY, SCOPE & COVERAGE

#### **3.1 Physical features, Rainfall, Temperature, Crop-Season and Population characteristics:**

Goa District attained statehood on 30<sup>th</sup> May, 1987. It constitutes of two districts, South Goa & North Goa. Panaji is the capital of the Goa State. Goa State is located on the West Coast of Indian Peninsula and between the coastal borders of Maharashtra and Karnataka.

3.1.2 Goa State is situated between the parallels  $15^{\circ} - 47' - 59''$  and  $14^{\circ} - 53' - 57''$  of latitude north and between meridians  $73^{\circ} - 40' - 54''$  and  $74^{\circ} - 53' - 11''$  of longitudes east of Greenwich. Its length from the extreme south to north measures 105 kms. And the width from east to west measures 60 kms. It covers an area of 3701 sq. kms. The altitude of the towns of this state range between 20 and 62 meters above the sea level.

3.1.3 The boundaries of this state are well defined in the north by the Tiracol River which separates the State from Maharashtra State in the east and south by Karnataka State and in west by the Arabian Sea.

3.1.4 The State of Goa has a hilly terrain especially on its eastern side, where lies the southern end of the Sahyadri ranges. These mountains, after skirting a considerable portion of the northeastern and southeastern boundaries, branch off westward across the state with many spurs and ridges. The terrain is interspersed by a number of rivers flowing westwards, which provide a network of internal waterways. The important rivers worth mention are Mandovi, Zuari, Tiracol, Chapora and Betul, which are navigable for a total length of 256 kms. The coast is full of creeks and estuaries formed by these rivers which provide a good shelter for fishing crafts. Estuaries of these rivers are rich in marine fauna. The one hundred and five kms. long coastal line of Goa is endowed with some of the loveliest beaches in the world which have earned the fame of bearing idyllic beauty spots and are visited by the holiday makers and lovers of nature both domestic and foreign every year.

3.1.5 The physiographic characteristics are rich and varied consisting of verdant hills, forest, coconut groves and paddy fields. The most picturesque region is located in the lower basins of the Mandovi and the Zuari, which join to form a bay. There are about half a dozen inlets between the estuaries of these rivers, the largest of which is Goa from which the whole state appears to have derived its name. The port of Mormugao situated on the southern side of the Zuari is one of the best natural harbors on the West Coast of India and can shelter large ocean liners. The climate topography, geology and vegetation have played a prominent role in the development of the soils in the state. The soils in general are lateritic. The agricultural low lands, especially in the coastal track are alluvial flats formed through sedimentation along the principal rivers. In many cases, they are



protected by dykes. Along the coastline there are sand dunes, too dry and barren to sustain any agricultural crop except cashew and coconut.

3.1.6 Most of the remaining land much of which classified as forests originates from Archaean rock formations which are very thick. In the highlands laterite covers gneiss and hypogenic rocks, from which iron ore is mined extensively. The soil is murum on the slopes. Many commercial tree species thrive in the well aerated soils at the foothills, where the murum is mixed with humus to form a loamy soil, and where the growth is often thick and high. In the valleys where the perennial natural water springs occur, arecanut plantations are seen.

3.1.7 The soils of this state can, therefore, be classified into three categories viz. (I) Laterite or Lateritic, (II) Sandy. About 2, 75,900 hectares (81 percent of the total area) are of the first category and are highly acidic in nature, sandy loam to silt loam in texture and well drained. They are poor in lime, phosphorus and potash but fairly good in organic matter and nitrogen. About 24,950 (7.4 percent of the total area) hectares are alluvial, 17,600 hectares of which are subject to inundation of saline water and have to be protected by bunds to grow crops successfully. The nine kilometers coastal inland comprise a stretch of 38000 hectares (11.2 percent of the total area) half of which has a high water table and could be exploited for irrigation and multiple cropping. These soils are also acidic, sandy to sandy loams, fairly rich in organic matter but very deficient in phosphate and potash.

### **3.2 Rainfall and temperature**

In Goa the climate is warm and humid. From June to September heavy rainfall is received from the Southwest monsoons. There is much variation in temperature over the year. In the western half where most of the land is below 100 meters in altitude, the rainfall average varies between 2600 and 4000 millimeters and the year round temperature varies from 18<sup>0</sup> C to 34<sup>0</sup> C. In the eastern half, where the hills and mountains rise to higher altitudes (max. 1,666 mts. above sea level), temperature variations are wider and the rainfall is considerably heavier. Among all the 11 towns of the Goa State, the altitude of Mormugao town is the highest i.e. 62 mts above the sea level. Since the towns are situated very near to the coast the maximum temperature seldom exceeds 34<sup>0</sup> C and the minimum seldom falls below 18<sup>0</sup> C.

### **3.3 Crop seasons**

In the State of Goa, basically, the soil and climate conditions are favorable for the growth of a wide variety of tropical crops. Crops like paddy, ragi, pulses, beans, other millets and vegetables are grown during Kharif season (from May to August). The important crops which are grown during Rabi season (December to February) are paddy, pulses, beans and vegetables. During summer seasons some vegetables are grown in this state. Coconut and arecanut are important among the three crops. The common fruit bearing trees are cashew, mango, jackfruit, breadfruit, papaya, lemon, banana and pineapple. Vegetables such as brinjal, ladies finger, radish, cucumber, pumpkin, drumsticks, different varieties

of gourd etc. are widely grown. Sweet potatoes, onions and chilies are grown wherever irrigation facilities are available. Sugarcane is another crop introduced on a large scale due to establishment of sugar factory in the taluka of Sanguem in South Goa District.

### **3.4 Population characteristics**

As per the 2011 provisional results of the Population Census the Population of State of Goa was 14, 57,723. The Male population has been recorded 7, 40,711 which that of Female was 7, 17,012. The most populas town in the State is Margao with the population of 87,678 and Shiroda is the highest population village with population of 14,030. Pernem has registered as least populas town having population of 5,025. The Sex ratio in Goa stood at 968 as against as against 961 in 2001. Sex ratio of Child population of the age six was 920 and above seven is 973. The Literate population in Goa is 11, 52,117 (87.40%). Density Per Sq. Km. in Goa found to be 394.

### **3.5 Main Characteristics of Agricultural Economy of the State**

Agricultural sector plays a vital role in the distribution of regional income. A study of principal characteristics of this sector such as land utilisation, cropping pattern, extent of inputs and other related factors become very important from the point of view of proper planning at the micro level so that the share in the State income of particularly the small and the marginal farmers improves. A brief description of the agricultural economy of the State on the basis of available data is given below:

### **3.6 Contribution of Agriculture to State Income:**

Agriculture proper contributes sizably to the regional income. The Gross Domestic estimates for the year 2005-06 as prepared by the Directorate of Planning, Statistics and Evaluation on the basis of standard methodology recommended by the Central Statistical Organisation of the Government of India; work out to Rs. 86871 at current prices which represent 6.90 percent of the total regional income. These estimates at constant prices (2004-05) work out of to Rs. 83220 lakh, i.e. 7 percent of the State Domestic Product.

3.6.1 The Net Domestic Product at current prices and constant prices for each sector is estimated for the year 2005-06 as shown in the following table in comparison with the corresponding figures for 2000-01 during which year the last Agricultural Census was conducted.

**TABLE 3.1**  
**SECTORWISE DISTRIBUTION OF REGIONAL INCOME**

Sector	(Rs. in lakh)			
	At current prices		At constant prices (2004-05)	
	2000-01	2005-06	2000-01	2005-06
1	2	3	4	5
<b>1. Primary Sector</b>	98567	174147	42228	157306
(Agriculture & livestock, Forestry & Logging, Fishing & Mining & Quarrying)	(14.86)	(13.85)	(12.30)	(13.25)
<b>2. Secondary Sector</b>	212093	499886	129711	485316
(Manufacturing, Construction, Electricity and Water supply)	(31.97)	(39.76)	(37.79)	(40.88)
<b>3. Tertiary Sector</b>	352741	583270	171285	544411
(Transport, Trade, Banking and Insurance, Real estate and Ownership of dwelling, Public Administration and other services)	(53.17)	(46.39)	(49.91)	(45.87)
<b>Net State Domestic Product</b>	<b>663401</b>	<b>1257303</b>	<b>343224</b>	<b>1187033</b>
	<b>(100.00)</b>	<b>(100.00)</b>	<b>(100.00)</b>	<b>(100.00)</b>

**Note: Figures in brackets are in percentages**

3.6.2 The total income from Agricultural Sector which was 98567 lakh at current prices has increased to Rs. 174147/- lakh in 2005-06 showing an increase of 76.68 percent over these five years. The contribution of the Agricultural Sector to the total income of this State at constant prices (1999-2000 base years) was Rs.42228/- lakh in 2000-01 which increased to Rs. 157306/- lakh in 2005-06 i.e. by 64.66 percent.

## CHAPTER IV

### ANALYSIS OF THE CENSUS RESULT

4.1 The data collected under the main census, 2005-06, is tabulated in six tables. The data is grouped in 10 classes on the basis of size of operational holdings, the lowest size class being below 0.5 hectares and the highest being 20 hectares and above. The grouping enables to study aspects such as land use, tenancy, cropping pattern and irrigation as related to the size of the holding. In this chapter, the analysis of the census result is presented. Comparison with the results of the earlier census has also been attempted. Since the proportion of ST operational holdings was very small, the tables have been prepared by clubbing this data with the data of SC operational holding.

#### 4.2 Operational Holdings and their Area.

According to the Agricultural Census, 2005-06 there are in all 52821 operational holdings covering an area of 60742 hectares. There were 64080 operational holdings covering an area of 53924 hectares during the Agricultural Census 2000-01. Thus, there is a decrease of 20 percent in the number of operational holdings and increase of 12.64 percent in the area during the current census as compared to the Census of 2000-01.

#### 4.3 Size Distribution of Operational Holdings

4.3.1 In the table 4.1 below, the distribution of no. of operational holdings and their corresponding area during the year 2005-06 is presented according to different size classes of operational holdings.

**TABLE 4.1**  
**DISTRIBUTION OF OPERATIONAL HOLDINGS AND AREA**  
**ACCORDING TO THE SIZE CLASSES DURING 2005-2006**

Sl. No.	Size Class	No. of operational holding			Area. of operational holdings		
		Total	Percent age	Cumulative Percentage	Total	Percent age	Cumulative Percentage
1	2	3	4	5	6	7	8
1	Below 0.5	33184	62.82	62.82	6226	10.25	10.25
2	0.5-1.0	9561	18.10	80.92	6196	10.20	20.45
3	1.0-2.0	5788	10.96	91.88	7184	11.83	32.28
4	2.0-3.0	1990	3.77	95.65	4470	7.36	39.64
5	3.0-4.0	691	1.31	96.96	2255	3.71	43.35
6	4.0-5.0	449	0.85	97.81	1902	3.13	46.48
7	5.0-7.5	524	0.99	98.80	3046	5.01	51.49
8	7.5-10.0	222	0.42	99.22	1865	3.07	54.56
9	10.0-20.0	282	0.53	99.75	3667	6.04	60.60
10	20.0 & above	130	0.25	100.00	23931	39.40	100.00
<b>Total</b>		<b>52821</b>	<b>100</b>		<b>60742</b>	<b>100</b>	

4.3.2 The above table reveals that the size distribution of the number of operational holdings is positively skewed with the highest frequency (62.82 percent) in the lowest size class (0.5 ha.). The size classes upto 2.0 ha. and below accounted for almost (91.88 percent) was of the total number of holdings. The holdings of the size of above 10.0 ha. formed only about 0.78 percentage of the total number of holdings. The area of operational holdings of size 2.0 ha. and below formed 32.28 percentage of the total operated area and that of operational holdings above 10.0 ha. Formed 45.43 percentage of the total operated area.

4.3.3 The distribution of number of operational holdings and their corresponding area during 2005-06 Census presented in the table 4.2 below by major size group viz. marginal farmers (below 1.0 ha.), small farmers (1.0 – 2.0 ha.), semi medium farmers (2.0 – 4.0 ha.), medium farmers (4.0 – 10.0 ha.) and large farmers (above 10.0 ha.). The attempt is also made to compare the data, with the corresponding data of 2000-01 census.

**TABLE 4.2**

**DISTRIBUTION OF NUMBER AND AREA OF OPERATIONAL HOLDINGS BY FIVE MAJOR CLASSES OF HOLDINGS IN 2000-01 AND 2005-06**

SN	Major Size Classes	Size Group (in Ha.)	Numbers				Area (In Ha.)			
			Numbers		Percentages		Hectares		Percentages	
			2000-01	2005-06	2000-01	2005-06	2000-01	2005-06	2000-01	2005-06
1	2	3	4	5	6	7	8	9	10	11
1	Marginal	Below 1.0	52318	42745	81.64	80.92	16909	12422	31.36	20.45
2	Small	1.0-2.0	6590	5788	10.28	10.96	8312	7183	15.41	11.83
<b>Sub-Total</b>		Below 2.0	58908	48533	91.92	91.88	25221	19605	46.77	32.28
3	Semi-Medium	2.0-4.0	3196	2681	4.99	5.08	8161	6725	15.14	11.07
<b>Sub-Total</b>		Below 4.0	62104	51214	96.91	96.96	33382	26330	61.91	43.35
4	Medium	4.0-10.0	1458	1195	2.28	2.26	8229	6813	15.26	11.22
5	Large	Above 10.0	518	412	0.81	0.78	12313	27599	22.83	45.43
<b>All Categories</b>			<b>64080</b>	<b>52821</b>	<b>100</b>	<b>100</b>	<b>53924</b>	<b>60742</b>	<b>100</b>	<b>100</b>

4.3.4 The distribution of number and area of the holdings according to the five classes indicated above shows a preponderance of marginal farmers. The holdings of less than one hectare accounted for more than three fourths (80.92 percent) of the total holdings in the State, whereas the area covered by these operational holdings formed only 20.45 percent of the total operated area. If small farmers are also taken into account along with the marginal farmers then the percentage of these holdings to the total number of holdings was observed to be 91.88 and the area operated by these two categories of holdings (upto 2.0 hectares) worked out to 32.28 percent. If the holdings upto 4.0 hectares are considered, than it covered 96.96 percent of the total holdings and 43.35

percent of the total operated area. In the upper strata the holdings of more than 10 hectares were only 0.78 percent but their area coverage was more than 45.43 percent. During the 2000-01 census 1192 holdings or 1.86 percent were joint holdings but according to the present census 1528 holdings or 2.89 percent fall under this category.

4.3.5 The average size of the operational holding by major size classes of holdings in the year 2000-01 & 2005-06 is presented in the table 4.3 below.

**TABLE 4.3**  
**AVERAGE SIZE OF OPERATIONAL HOLDING BY**  
**FIVE MAJOR CLASSES IN 2000-01 AND 2005-2006**

Sr. No.	Size Class	2000-01			2005-2006		
		No. of Holdings	Area (in Ha.)	Average size	No. of Holdings	Area (in Ha.)	Average size
1	2	3	4	5	6	7	8
1	Below 1.0	52318	16909	0.32	42745	12422	0.29
2	1.0-2.0	6590	8312	1.26	5788	7183	1.24
3	2.0-4.0	3196	8161	2.55	2681	6725	2.51
4	4.0-10.0	1458	8229	5.64	1195	6813	5.70
5	10.0 & above	518	12313	23.77	412	27599	66.99
<b>Total</b>		<b>64080</b>	<b>53924</b>	<b>0.84</b>	<b>52821</b>	<b>60742</b>	<b>1.15</b>

4.3.6 The average area of holding by categories of holdings, that is marginal, small and semi-medium holdings has decreased marginally in 2005-06 as compared to 2000-01 while the average area of medium and large holdings has slightly increased. The average size of holding for the State is 0.84 ha. in 2000-01 & 1.15 ha. in 2005-06.

#### 4.4 Individual and Joint Holdings

4.4.1 Out of the total 52821 holdings in the State 51200 (96.93 percent) were individual holdings with an area coverage of 38314 hectares (63.08 percent). The joint holdings were 1528 i.e. 2.89 percent covering an area of only 1967 hectares (3.24 percent). There were 93 institutional holdings i.e. 0.18 percent with area coverage of 20461 hectares i.e. 33.69 percent.

**TABLE 4.4**  
**DISTRIBUTION OF NUMBER AND AREA OF OPERATIONAL HOLDINGS**  
**ACCORDING TO INDIVIDUAL, JOINT AND INSTITUTIONAL**  
**HOLDINGS IN 2005-2006**

Sl. No.	Category	Number	Percentage	Area	Percentage
1	Individual	51200	96.93	38314	63.08
2	Joint	1528	2.89	1967	3.24
3	Institutional	93	0.18	20461	33.68
<b>Total</b>		<b>52821</b>	<b>100</b>	<b>60742</b>	<b>100</b>

The district-wise number of holdings and the area under these holdings according to the 2005-06 census are given in the following table.

**TABLE 4.5**  
**DISTRICTWISE DISTRIBUTION OF NUMBER AND AREA OF**  
**OPERATIONAL HOLDINGS IN 2005-2006**

Districts	No. of holdings	Percentage to total no. of holdings	Area operated in Hectares	Percentages to area operated	Average size of the operational holdings (ha)
1	2	3	4	5	6
North Goa	28748	54.43	24503	40.34	0.85
South Goa	24073	45.57	36239	59.66	1.51
<b>Total</b>	<b>52821</b>	<b>100.00</b>	<b>60742</b>	<b>100.00</b>	<b>1.15</b>

4.4.2 It is seen from the above table that North Goa District had 28748 (54.43 percent) holdings accounting for 40.34 percent of the total operated area in the State. There were 24073 (45.57 percent) holdings in the South Goa District covering 59.66 percent of the total operated area in the State.

4.4.3 District wise and Taluka wise distribution of operational holdings by size classes is presented in the table 4.6 A and 4.6 B below.

**TABLE 4.6(A)**  
**DISTRICTWISE DISTRIBUTION OF OPERATIONAL HOLDINGS BY**  
**CLASSES IN 2005-2006**

Districts	No. of holdings & area operated	Less than 1.0 ha. (Marginal)	1.0 to 2.0 ha. (Small)	2.0 to 4.0 ha. (Semi Medium)	4.0 to 10.0 ha. (Medium)	10.0 & above (Large)	Total
1	2	3	4	5	6		
<b>Total</b>	No.	42745 (80.92)	5788 (10.96)	2681 (5.08)	1195 (2.26)	412 (0.78)	52821 (100)
	Area	12422 (20.45)	7183 (11.83)	6725 (11.07)	6813 (11.22)	27599 (45.43)	60742 (100)
<b>North Goa</b>	No.	22711 (79.00)	3368 (11.72)	1690 (5.88)	741 (2.58)	238 (0.83)	28748 (100)
	Area	7069 (28.85)	4172 (17.03)	4207 (17.17)	4198 (17.13)	4857 (19.82)	24503 (100)
<b>South Goa</b>	No.	20034 (83.22)	2420 (10.05)	991 (4.12)	454 (1.89)	174 (0.72)	24073 (100)
	Area	5353 (14.77)	3012 (8.31)	2517 (6.95)	2615 (7.22)	22742 (62.75)	36239 (100)

**Note: Figures in brackets are in percentages**

**TABLE 4.6 (B)**

**TALUKAWISE DISTRIBUTION OF OPERATIONAL HOLDINGS BY CLASSES  
IN 2005-2006**

Taluka	No. of Operational holding	Less than 1.0 ha (Marginal)	1.0 to 2.0 ha (Small)	2.0 to 4.0 ha (Semi Medium)	4.0 to 10.0 ha. (Medium)	10.0 & above	Total
Tiswadi	No.	2394	98	44	38	22	2596
		(92.22)	(3.78)	(1.69)	(1.46)	(0.85)	(100)
	Area	668	112	112	206	390	1488
		(44.89)	(7.53)	(7.53)	(13.84)	(26.21)	(100)
Bardez	No.	4405	371	140	14	4	4934
		(89.28)	(7.52)	(2.84)	(0.28)	(0.08)	(100)
	Area	1293	449	310	91	71	2214
		(58.40)	(20.28)	(14.00)	(4.11)	(3.21)	(100)
Pernem	No.	4071	412	164	36	4	4687
		(86.86)	(8.79)	(3.50)	(0.77)	(0.08)	(100)
	Area	1185	504	430	185	111	2415
		(49.07)	(20.87)	(17.80)	(7.66)	(4.60)	(100)
Bicholim	No.	3710	674	397	251	91	5123
		(72.42)	(13.15)	(7.75)	(4.90)	(1.78)	(100)
	Area	1272	808	978	1413	1717	6188
		(20.56)	(13.06)	(15.80)	(22.83)	(27.75)	(100)
Sattari	No.	3369	1369	699	282	77	5796
		(58.13)	(23.62)	(12.06)	(4.86)	(1.33)	(100)
	Area	1373	1750	1734	1609	1956	8422
		(16.30)	(20.78)	(20.59)	(19.10)	(23.23)	(100)
Ponda	No.	4762	444	246	120	40	5612
		(84.86)	(7.91)	(4.38)	(2.14)	(0.71)	(100)
	Area	1278	549	644	693	612	3776
		(33.85)	(14.54)	(17.05)	(18.35)	(16.21)	(100)
<b>North Goa (District)</b>	No.	<b>22711</b>	<b>3368</b>	<b>1690</b>	<b>741</b>	<b>238</b>	<b>28748</b>
		<b>(79.00)</b>	<b>(11.71)</b>	<b>(5.88)</b>	<b>(2.58)</b>	<b>(0.83)</b>	<b>(100)</b>
	Area	<b>7069</b>	<b>4172</b>	<b>4207</b>	<b>4198</b>	<b>4857</b>	<b>24503</b>
		<b>(28.85)</b>	<b>(17.03)</b>	<b>(17.17)</b>	<b>(17.13)</b>	<b>(19.82)</b>	<b>(100)</b>

**Note: Figures in brackets are in percentages**



Taluka	No. of Operational holding	Less than 1.0 ha (Marginal)	1.0 to 2.0 ha (Small)	4.0 to 10.0 ha. (Medium)	10.0 & above (Large)	Total
Sanguem	No.	3224	910	122	89	4617
		(69.83)	(19.71)	(2.64)	(1.93)	<b>(100)</b>
	Area	1028	1018	650	2001	5358
		(19.19)	(19.00)	(12.13)	(37.34)	<b>(100)</b>
Salcete	No.	7104	120	6	6	7256
		(97.91)	(1.65)	(0.08)	(0.08)	<b>(100)</b>
	Area	1577	143	34	265	2068
		(76.28)	(6.93)	(1.63)	(12.79)	<b>(100)</b>
Quepem	No.	4630	715	213	50	6074
		(76.23)	(11.77)	(3.51)	(0.82)	<b>(100)</b>
	Area	1393	991	1260	1148	6018
		(23.15)	(16.47)	(20.93)	(19.08)	<b>(100)</b>
Mormugao	No.	610	80	-	2	714
		(85.43)	(11.21)	-	(0.28)	<b>(100)</b>
	Area	138	86	-	25	299
		(46.16)	(28.76)	-	(8.36)	<b>(100)</b>
Canacona	No.	4466	595	113	27	5412
		(82.52)	(10.99)	(2.09)	(0.50)	<b>(100)</b>
	Area	1215	774	672	19303	22496
		(5.40)	(3.44)	(2.99)	(85.81)	<b>(100)</b>
<b>South Goa (District)</b>	No.	<b>20034</b>	<b>2420</b>	<b>454</b>	<b>174</b>	<b>24073</b>
		<b>(83.22)</b>	<b>(10.05)</b>	<b>(1.89)</b>	<b>(0.72)</b>	<b>(100)</b>
	Area	<b>5353</b>	<b>3012</b>	<b>2615</b>	<b>22742</b>	<b>36239</b>
		<b>(14.77)</b>	<b>(8.31)</b>	<b>(7.22)</b>	<b>(62.75)</b>	<b>(100)</b>
<b>Goa State (Total)</b>	No.	<b>42745</b>	<b>5788</b>	<b>1195</b>	<b>412</b>	<b>52821</b>
		<b>(80.92)</b>	<b>(10.96)</b>	<b>(2.26)</b>	<b>(0.78)</b>	<b>(100)</b>
	Area	<b>12422</b>	<b>7183</b>	<b>6813</b>	<b>27599</b>	<b>60742</b>
		<b>(20.45)</b>	<b>(11.83)</b>	<b>(11.22)</b>	<b>(45.43)</b>	<b>(100)</b>

**Note: Figures in brackets are in percentages**

TABLE 4.6 (C)

**TALUKAWISE DISTRIBUTION OF NUMBER & AREA OF INDIVIDUAL, JOINT &  
INSTITUTIONAL OPERATIONAL HOLDINGS BY MAJOR CLASSES IN 2005-2006**

Taluka	No. of Individual Operational Holding	Less than 1.0 ha. (Marginal)			1.0 to 2.0 ha. (Small)			2.0 to 4.0 ha. (Semi-Medium)			4.0 to 10.0 ha. (Medium)			10.0 ha. & above (Large)			Total (All Classes)		
		Indiv	Joint	Inst.	Indiv	Joint	Inst.	Indiv	Joint	Inst.	Indiv	Joint	Inst.	Indiv	Joint	Inst.	Indiv	Joint	Inst.
Tiswadi	No.	2372	20	2	96	2	-	42	2	-	36	2	-	22	-	-	2568	26	2
	Area	661	6	1	110	2	-	104	7	-	196	10	-	390	-	-	1461	25	1
Bardez	No.	3864	541	-	310	61	-	112	28	-	14	-	-	4	-	-	4304	630	-
	Area	1143	149	-	372	77	-	243	67	-	92	-	-	71	-	-	1921	293	-
Pernem	No.	4044	27	-	396	16	-	162	2	-	36	-	-	4	-	-	4642	45	-
	Area	1172	13	-	482	22	-	425	5	-	185	-	-	111	-	-	2375	40	-
Bicholim	No.	3584	111	15	639	35	-	346	51	-	219	32	-	65	26	-	4853	255	15
	Area	1223	41	8	764	44	-	847	132	-	1248	165	-	1142	574	-	5224	956	8
Sattari	No.	3284	69	16	1341	26	2	675	24	-	268	12	2	67	2	8	5635	133	28
	Area	1346	22	5	1710	37	3	1665	69	-	1524	68	16	1378	44	534	7623	240	558
Ponda	No.	4700	56	6	426	18	-	232	14	-	110	10	-	40	-	-	5508	98	6
	Area	1249	24	5	526	23	-	607	37	-	647	46	-	612	-	-	3641	130	5
North Goa	No.	21848	824	39	3208	158	2	1569	121	-	683	56	2	202	28	8	27510	1187	51
	Area	6794	255	20	3965	204	3	3891	316	-	3892	290	16	3704	619	534	22246	1684	573
Sanguem	No.	3169	55	-	896	10	4	270	2	-	118	2	2	75	2	12	4528	71	18
	Area	1014	15	-	999	13	6	655	6	-	627	10	12	1231	48	722	4526	92	740
Salcete	No.	6930	172	2	116	4	-	18	2	-	6	-	-	2	-	4	7072	178	6
	Area	1545	33	-	139	4	-	44	5	-	34	-	-	200	-	65	1962	42	65
Quepem	No.	4598	32	-	691	24	-	448	16	2	205	8	-	48	-	2	5990	80	4
	Area	1382	12	-	961	30	-	1176	41	8	1220	40	-	1103	-	45	5842	123	53
Mormugao	No.	610	-	-	80	-	-	22	-	-	-	-	-	2	-	-	714	-	-
	Area	138	-	-	86	-	-	50	-	-	-	-	-	25	-	-	299	-	-
Canacona	No.	4452	6	8	591	2	2	209	2	-	109	2	2	25	-	2	5386	12	14
	Area	1210	1	3	769	2	3	525	7	-	639	16	17	296	-	19007	3439	26	19030
South Goa	No.	19759	265	10	2374	40	6	967	22	2	438	12	4	152	2	20	23690	341	42
	Area	5289	60	3	2954	49	10	2451	59	8	2519	67	29	2855	48	19838	16068	283	19888
Goa State	No.	41607	1089	49	5582	198	8	2536	143	2	1121	68	6	354	30	28	51200	1528	93
	Area	12083	316	23	6918	253	13	6342	375	8	6412	356	45	6559	667	20372	38314	1967	20461



The percentage of marginal holders was higher in North Goa District (53.13) when compared with South Goa District (46.87). The percentage of small holders varied between 58.19 and 41.81 in North Goa & South Goa District respectively. Under semi-medium the percentage in North Goa District is 63.04 and in South Goa it is 36.96. Under medium the percentage of North Goa is 62.01 and in South Goa it is 37.99. As regards large holdings the above table reveals that North Goa District had 57.77 percent accounting for as much as 42.23 in South Goa District.

4.4.4 The following table gives the average size of holdings in different districts during 2000-01 & 2005-06.

**TABLE 4.7**

**DISTRICTWISE AVERAGE SIZE OF HOLDINGS IN 2000-01 & 2005-06**

Name of the District	Agricultural Census 2000-01			Agricultural Census 2005-06		
	Operational holdings (No.)	Area (Ha)	Average size (Ha)	Operational holdings (No.)	Area (Ha)	Average size (Ha)
1	2	3	4	5	6	7
North Goa	39182	32893	0.84	28748	24503	0.85
South Goa	24898	21031	0.84	24073	36239	1.51
<b>Total</b>	<b>64080</b>	<b>53924</b>	<b>0.84</b>	<b>52821</b>	<b>60742</b>	<b>0.15</b>

4.4.5 The average size of the holding was 0.84 ha. in 2000-01 and 0.15 ha in 2005-06. In South Goa District, the same was 0.84 ha. in 2000-01 which is decreased to 1.51 ha. in 2005-06. In North Goa District it was 0.84 ha. in 2000-01 which is increased to 0.85 ha. in 2005-06.

**4.5 Tenancy of Operational Holdings**

4.5.1 Distribution of number of operational holdings according to tenancy status by major classes is given in the following table 4.8

**TABLE 4.8**

**DISTRIBUTION OF NUMBER OF OPERATIONAL HOLDINGS ACCORDING TO TENANCY STATUS BY MAJOR SIZE CLASSES 2005-06**

Sl. No.	Major size class (in ha.)	Total No. of holdings	Wholly owned and self operated	Wholly leased in	Wholly otherwise operated	Partly owned, Partly leased in and partly otherwise operated
1	2	3	4	5	6	7
1	Marginal (below 1.0)	42745 (80.92)	34247 (64.84)	5036 (9.53)	2550 (4.83)	911 (1.72)
2	Small (1.0 to 2.0)	5788 (10.96)	4813 (9.11)	368 (0.70)	242 (0.46)	366 (0.69)
3	Semi- (2.0 to 4.0)	2681 (5.08)	2263 (4.28)	146 (0.28)	79 (0.15)	191 (0.36)
4	Medium (4.0 to 10.0)	1195 (2.26)	1033 (1.96)	34 (0.06)	66 (0.12)	67 (0.13)
5	Large (10.0 above)	412 (0.78)	388 (0.73)	2 (0.01)	4 (0.01)	18 (0.03)
<b>Total</b>		<b>52821</b> <b>(100.00)</b>	<b>42744</b> <b>(80.92)</b>	<b>5586</b> <b>(10.58)</b>	<b>2941</b> <b>(5.57)</b>	<b>1553</b> <b>(2.94)</b>

**Note: Figures in brackets are in percentages.**

4.5.2 The following table gives the distribution of area operated according to tenancy by size classes.

**TABLE 4.9**

**DISTRIBUTION OF AREA OPERATED ACCORDING TO TENANCY BY MAJOR SIZE CLASSES 2005-06**

Sl. No.	Major Size Classes	Total Operated Area	Wholly Owned And Self Operated	Wholly Leased In	Wholly Otherwise Operated	Partly Owned, Partly Leased In And Partly Otherwise Operated			
						Owned	Leased In	Other-wise Operated	Total
1	2	3	4	5	6	7	8	9	10
1	Marginal	12422 (20.45)	9851 (16.22)	1429 (2.35)	678 (1.12)	221 (0.36)	187 (0.31)	56 (0.09)	464 (0.76)
2	Small	7183 (11.83)	5961 (9.81)	440 (0.72)	296 (0.49)	246 (0.40)	175 (0.29)	64 (0.11)	485 (0.80)
3	Semi- Medium	6725 (11.07)	5665 (9.33)	349 (0.57)	200 (0.33)	296 (0.49)	129 (0.21)	86 (0.14)	511 (0.84)
4	Medium	6813 (11.22)	5914 (9.74)	177 (0.29)	339 (0.56)	208 (0.34)	128 (0.21)	46 (0.08)	383 (0.63)
5	Large	27599 (45.43)	27229 (44.83)	26 (0.04)	42 (0.07)	136 (0.22)	125 (0.21)	40 (0.07)	302 (0.50)
All Categories		60742 (100)	54620 (89.93)	2421 (3.97)	1557 (2.57)	1107 (1.81)	744 (1.23)	293 (0.49)	2144 (3.53)

**Note: Figures in brackets are in percentages.**

4.5.3 It would be observed that the bulk of holdings and area operated (80.92 percent and 89.93 percent respectively) was accounted by wholly owned and self operated category. Next to this 10.58 percent of the holdings were leased in accounting for 3.97 percent of total operated area. About 2.94 percent of the holdings which were partly owned, partly leased in and partly otherwise operated accounted for 3.53 percent of the total area and 5.57 percent of the holdings were wholly otherwise operated accounting for 2.57 percent of the total operated area in the State.

4.5.4 About 5.57 percent of the holdings belonged to the category 'wholly otherwise operated' and these accounted for 2.57 % of the total area operated. The category partly owned, partly leased in and partly otherwise operated which accounted for 2.94 percentage of the holdings had a share of 3.53 percentage in the total area operated under the category. Only 0.49 % of the total area was otherwise operated i.e. comprising encroached land and land under dispute.

4.5.5 District-wise percentage share by tenancy status is presented in the following table 4.10

**TABLE 4.10**  
**DISTRICT-WISE PERCENTAGE SHARE BY TENANCY STATUS**  
**IN GOA 2005-06**

Sl. No.	Name of the District	Wholly Owned And Self Operated		Wholly Leased In		Wholly Otherwise Operated		Partly Owned, Partly Leased In And Partly Otherwise Operated	
		No.	Area	No.	Area	No.	Area	No.	Area
1	2	3	4	5	6	7	8	9	10
1	North Goa	21766	20238	4118	1828	2078	1330	787	1107
		(50.92)	(37.05)	(73.72)	(75.51)	(70.66)	(85.40)	(50.68)	(51.63)
2	South Goa	20978	34382	1468	593	863	227	766	1037
		(49.08)	(62.95)	(26.28)	(24.49)	(29.34)	(14.60)	(49.32)	(48.37)
<b>Total</b>		<b>42744</b>	<b>54620</b>	<b>5586</b>	<b>2421</b>	<b>2941</b>	<b>1557</b>	<b>1553</b>	<b>2144</b>
		<b>(100)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>

**Note: Figures in brackets are in percentages.**

4.5.6 Wholly owned and self operated holdings in North Goa District were 50.92 percent of the total holdings and 37.05 % of the operated area, while in South Goa District there were 49.08 percent such holdings with 62.95 percent share in the operated area.

#### **4.6 LAND UTILISATION**

4.6.1 According to the Agricultural Census 2005-06 total operated area of all the holdings was 60742 hectares. Out of this area 58207 hectares or 95.83 percent was net

sown area and 800 hectares or 1.32 percent was current fallow. Thus the net cultivated area formed 97.14 percent of the total operational area in the State. The share of the cultivable waste land was 235 ha. or 0.39 percent. The proportionate share of the land not available for cultivation was 534 ha. or 0.89 percent. It would be quite interesting to study the various relationship such as holdings size and land utilisation size of the holdings and intensity of cropping etc. Table 4.11 below gives the area under different uses by size classes.

**TABLE 4.11**  
**DISTRIBUTION OF AREA UNDER LAND BY MAJOR SIZE CLASSES**  
**IN 2005-06**

SL. No.	Size Classes (ha)	Net area sown	Current fallow	Net cultivated area	Other uncultivated land excluding fallow	Fallow land other than current fallow	Cultivable waste land	Total uncultivated land	Land not available for cultivation
1	2	3	4	5	6	7	8	9	10
1	Below 1.0	12344	60	12403	6	6	2	15	3
	(Marginal)	(21.21)	(7.52)	(21.02)	(0.87)	(2.37)	(0.85)	(1.24)	(0.56)
2	1.0-2.0	7121	35	7156	15	5	2	21	6
	(Small)	(12.23)	(4.33)	(12.13)	(2.05)	(1.98)	(0.85)	(1.79)	(1.12)
3	2.0 – 4.0	6660	16	6676	29	13	3	45	5
	(Semi-Medium)	(11.44)	(1.96)	(11.31)	(4.03)	(5.14)	(1.28)	(3.72)	(0.94)
4	4.0 – 10.0	6710	29	6740	50	16	2	68	5
	(Medium)	(11.53)	(3.70)	(11.42)	(7.04)	(6.32)	(10.85)	(5.65)	(0.94)
5	10.0 & above	25372	660	26032	613	213	226	1052	515
	(Large)	(43.59)	(82)	(44.12)	(86.01)	(84.19)	(96.17)	(87.60)	(96.44)
<b>Total</b>		<b>58207</b>	<b>800</b>	<b>59007</b>	<b>713</b>	<b>253</b>	<b>235</b>	<b>1201</b>	<b>534</b>
		<b>(100)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>	<b>(100)</b>

**Note: Figures in brackets are in percentages.**

4.6.2 A study of land utilization by size classes of holdings reveals that 21.21 percent of the net area sown was operated by marginal farmers, while small farmers had 12.23 percent of area under operation. 22.97 percent area was operated by semi medium and medium size holders. Large size cultivators had only 43.59 percent of the net area sown. Their share in land not available for cultivation was however the highest being 96.44 percent.

4.6.3 Percentage distribution of area by size classes according to land utilization is given in the table 4.12 below.

**TABLE 4.12****PERCENTAGE DISTRIBUTION OF AREA BY MAJOR SIZE CLASSES  
ACCORDING TO LAND UTILISATION IN 2000-01 AND 2005-06**

Sl. No.	Size class (ha.)	Net Cultivated Area		Other Area	
		2000-01	2005-06	2000-01	2005-06
1	2	3	4	5	6
1	Below 1.0 (Marginal)	99.42	99.85	0.58	0.15
2	1.0-2.0 (Small)	98.95	99.62	1.05	0.38
3	2.0 – 4.0 (Semi-Medium)	97.73	99.27	2.27	0.73
4	4.0 – 10.0 (Medium)	95.90	98.93	4.10	1.07
5	10.0 & above (Large)	90.81	94.32	9.19	5.68
<b>All sizes</b>		<b>96.59</b>	<b>97.14</b>	<b>3.41</b>	<b>2.86</b>

4.6.4 A study of the table 4.12 above clearly shows that there were only minor differences between the results of two censuses as far as percentage distribution of area according to different size classes is concerned. The percentage of net cultivated area remained almost the same as it was in the last census.

**4.7 NET AREA SOWN**

4.7.1 District wise distribution of area according to the Land utilization is presented in the following table 4.13

**TABLE 4.13****DISTRICTWISE DISTRIBUTION OF AREA ACCORDING TO THE  
LAND UTILISATION IN 2005-06**

Sl. No.	Name of the District	Land Utilisation							
		Net area sown	Current fallow	Net cultivated area	Other uncultivated land excluding fallow	Fallow land other than current fallow	Cultivable waste land	Total uncultivated land	Land not available for cultivation
1	2	3	4	5	6	7	8	9	10
1	North Goa	24256	48	24305	112	46	30	188	11
		(98.99)	(0.20)	(99.19)	(0.46)	(0.19)	(0.12)	(0.77)	(0.04)
2	South Goa	33951	752	34702	601	207	205	1013	523
		(93.69)	(2.07)	(95.76)	(1.66)	(0.57)	(0.57)	(2.80)	(1.44)
<b>Total</b>		<b>58207</b>	<b>800</b>	<b>59007</b>	<b>713</b>	<b>253</b>	<b>235</b>	<b>1201</b>	<b>534</b>
		<b>(95.83)</b>	<b>(1.32)</b>	<b>(97.14)</b>	<b>(1.17)</b>	<b>(0.42)</b>	<b>(0.39)</b>	<b>(1.98)</b>	<b>(0.88)</b>

**Note: Figures in brackets are in percentages.**



4.7.2 In Goa State the net area sown of 58207 hectares, which formed 95.83 percent of the total operated area, was distributed between North Goa and South Goa as 24256 hectares & 33951 hectares respectively.

#### **4.8 CURRENT FALLOW:**

Current fallow represents land which remained fallow during the agricultural year. Sometimes the cultivators allow current fallow to revive the fertility of their lands while at others, it may remain fallow due to lack of rainfall, seeds etc. During the agricultural census year 2005-06, the area current fallow constituted 1.32 percent of the total operated area. From the table 4.13 it is clear that the proportion of land under current fallow was very low in both the districts, viz North Goa and South Goa, at 0.20 percent and 2.07 percent respectively.

#### **4.9 NET CULTIVATED AREA:**

The net area sown and current fallow which taken together represent the net cultivated area, covered 59007 hectares of land and formed 97.14 percent of the total area of holdings. Out of 59007 hectares of net area cultivated, about 99.19 percent was accounted for by the North Goa District and 95.76 percent by South Goa District.

#### **4.10 TOTAL UNCULTIVATED LAND**

The total uncultivated land, which comprises (i) other uncultivated land excluding fallow land, (ii) fallow other than current fallow and (iii) cultivable wasteland, formed 1.98 percent of the total area. From the land utilization point of view, this category, occupied an important place, because grass is normally not grown in this state as a crop. The permanent pastures in Goa State provide grass to Live Stock. The percentage of uncultivated land was almost the same in both the districts.

#### **4.11 AREA NOT AVAILABLE FOR CULTIVATION**

It covered only 0.88 percent of the total operated area in the State. The percentage of such area in North Goa and South Goa District was 0.04 and 1.44 respectively.

#### **4.12 INTENSITY OF CROPPING**

The agro-climatic conditions and the pattern of land holding being peculiar in the State, extensive cultivation is neither possible nor practicable. Hence, while the intensity of cropping for the State worked out to 100.64 percent, also both the districts had about the same percentage. District wise details of the intensity of cropping in the State are given in the table 4.14.

**TABLE 4.14**  
**DISTRICTWISE DISTRIBUTION OF INTENSITY OF CROPPING**  
**(Percentage)**

Sl. No.	Name of the District	Net area sown (ha)	Total cropped area (ha)	Intensity of cropping col. 4 over 3* 100
1	2	3	4	5
1	North Goa	24256	24454	100.81
2	South Goa	33951	34125	100.51
<b>Total</b>		<b>58207</b>	<b>58579</b>	<b>100.64</b>

#### 4.13 HOLDING BY IRRIGATION STATUS AND AREA IRRIGATED

4.13.1 The current Census has revealed that excluding the purely current fallow holdings, there were 21364 holdings receiving irrigation while 31447 holdings were wholly unirrigated without irrigation facilities. Out of the total irrigated holdings 14742 holdings were wholly irrigated and 6622 holdings were partly irrigated.

4.13.2 The following table 4.15 furnishes the distribution of number and area of holdings by irrigation status in 2005-06.

**TABLE 4.15**  
**DISTRIBUTION OF NUMBER AND AREA OF HOLDINGS BY**  
**IRRIGATION STATUS 2005-06**

Sl. No.	Irrigation status of the holding	Number of holdings	Area of holdings	
			Net area sown	Net irrigated area
1	2	3	4	5
1	Wholly Irrigated	14742	8364	8363
2	Partly Irrigated	6622	12972	5706
	Sub-Total (1+2)	21364	21336	14069
3	Wholly Un-Irrigated	31457	36871	---
<b>All holdings</b>		<b>58221</b>	<b>58207</b>	<b>14070</b>

4.13.3 The net area sown in these holdings was 58207 hectares. Of this 21336 hectares were irrigated consisting of 8364 hectares in the wholly irrigated holdings and another 12972 hectares in the partly irrigated holdings.

4.13.3 Net irrigated area and net area sown by size group of holdings 2005-06 is furnished in the following table 4.16

**TABLE 4.16**  
**NET IRRIGATED AREA AND NET SOWN BY MAJOR SIZE CLASSES**  
**OF HOLDINGS IN 2005-06**

Sl. No.	Category of holdings	Net irrigated area	Area of holdings	
			Net area sown	Percentage of irrigated area to net area sown
1	2	3	4	5
1	Below 1.0 (Marginal)	3924	12343	31.8
2	1.0 - 2.0 (Small)	2472	7121	34.7
3	2.0 - 4.0 (Semi Medium)	2390	6660	35.9
4	4.0 – 10.0 (Semi Medium)	2175	6711	32.4
5	10.0 & above (Large)	3109	25372	12.3
<b>All categories</b>		<b>14070</b>	<b>58207</b>	<b>24.2</b>

4.13.5 It would be seen that the percentage of net irrigated area to net area sown, which is an important indicator of the availability of irrigation for crop production, was a maximum of 12.3 percent in case of large holdings and minimum of 35.9 percent in case of semi medium holdings.

4.13.6 Percentage distribution of the number and net irrigated area of holdings by irrigation status by size classes is given in the following table 4.17

**TABLE 4.17**  
**PERCENTAGE DISTRIBUTION OF NUMBER AND NET IRRIGATED AREA OF**  
**HOLDINGS BY IRRIGATION STATUS IN MAJOR SIZE CLASSES IN 2005-06**

Sl. No.	Size Class	Wholly Irrigated		Partly Irrigated			Wholly Unirrigated	
		No. of holdings	Net area sown	No. of holdings	Net Area Irrigated	Net area sown	No. of holdings	Net area sown
1	2	3	4	5	6	7	8	9
1	Below 1.0	12680	3242	3239	682	1509	26816	7592
	(Marginal)	(86.01)	(38.77)	(48.91)	(11.95)	(11.64)	(85.27)	(20.59)
2	1.0-2.0	1329	1581	1622	890	2032	2837	3508
	(Small)	(9.02)	(18.91)	(24.49)	(15.60)	(15.66)	(9.02)	(9.52)
3	2.0 – 4.0	513	1290	996	1100	2566	1172	2804
	(Semi-Medium)	(3.48)	(15.42)	(15.04)	(19.27)	(19.78)	(3.73)	(7.60)
4	4.0 – 10.0	155	850	562	1325	3076	478	2784
	(Medium)	(1.05)	(10.16)	(8.49)	(23.23)	(23.71)	(1.52)	(7.55)
5	10.0 & above	65	1400	203	1709	3789	144	20183
	(Large)	(0.44)	(16.74)	(3.07)	(29.95)	(29.21)	(0.46)	(54.74)
All Categories		14742	8363	6622	5706	12972	31447	36871
		(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)

**Note: Figures in brackets are in percentages.**

4.13.7 The above table reveals that 86.01 percent of the total number of wholly irrigated holdings belongs to the lowest size class of marginal holdings and only 0.44 percent of the holdings were large holdings. In terms of area, the marginal holdings accounted for 38.77 percent of the net sown area of the wholly irrigated holdings. This proportion declined with the increase in the size of the holdings except large holdings. In case of partly irrigated holdings 48.91 percent of the holdings were marginal holdings sharing 11.95 percent of the net sown area. In case of wholly unirrigated holdings 85.27 percent of the holdings were marginal holdings accounting for 20.59 percent of the net sown area.

#### 4.14 SOURCEWISE CLASSIFICATION OF IRRIGATED HOLDINGS

4.14.1 The following table presents the distribution of number of holdings and net area irrigated by source of irrigation.

**TABLE 4.18**  
**SOURCEWISE CLASSIFICATION OF IRRIGATION HOLDINGS**  
**AND AREA IRRIGATED IN 2005-06**

Sl. No.	Source of irrigation	No. of holdings	Net area irrigated (ha.)
1	2	3	4
1	Canals	6087	4178
2	Tanks	543	216
3	Wells	4433	3542
4	Tube Wells	166	158
5	Other Sources	11350	5975
	<b>All Sources</b>	<b>22579</b>	<b>14070</b>

4.14.2 There were 22579 holdings receiving irrigation including those irrigated from more than one source. Of these, 11350 holdings which were irrigated by other sources had net irrigated area of 5975 hectares. The second important source of irrigation was canal, which irrigated 4178 hectares in 6087 holdings. The wells provided irrigation to 4453 holdings with irrigated area of 3542 hectares. 543 holdings corresponding to 216 hectares were irrigated by means of tanks. Out of the total net irrigated area of 14070 hectares, the share of marginal holdings was the highest i.e. 3924 hectares followed by large holdings with 3109 hectares. While the small holdings had a share of 2471 hectares, the medium and semi medium holdings accounted for 2389 hectares and 2174 hectares of net irrigated area.

4.14.3 The below mentioned table gives irrigated area by source for all size classes for the year 2005-06.

**TABLE 4.19**  
**IRRIGATED AREA BY SOURCES OF IRRIGATION BY**  
**MAJOR SIZE CLASSES OF HOLDINGS IN 2005-06**

Sl. No.	Major size classes	Area irrigated by					Total
		Canals	Tanks	Wells	Tube wells	Other sources	
1	2	3	4	5	6	7	8
1	Marginal	1140	90	587	30	2072	3920
2	Small	735	33	449	13	1241	2471
3	Semi-Medium	874	38	698	10	770	2389
4	Medium	516	27	686	30	917	2175
5	Large	909	28	1122	76	975	3109
<b>All holdings</b>		<b>4178</b>	<b>216</b>	<b>3542</b>	<b>759</b>	<b>5975</b>	<b>14069</b>

4.14.4 The other sources of irrigation accounted for 5975 hectares of area in the State according to 2005-06 Census followed by Canals which accounted for an area of 4178 hectares. Wells provided irrigation facilities to 3542 hectares and tanks irrigated an area of 216 hectares of land. The tube wells irrigated 759 hectares of land.

#### **4.15 CROPPING PATTERN**

4.15.1 The cropping pattern generally indicates the level of development and the economic prosperity of the State. It deals with the nature of crops and percentage of area under each crop. A change in the cropping pattern would mean a change in the area proportionate under different crops. If the proportion of the area under high value crop increase it is likely to result in increase in the total return even if there is no increase in the yield rate or price, provided there is no simultaneous decrease in the proportionate area under equally high or higher value crops. The shift in cropping pattern could be advantageous or disadvantageous depending upon the crop adopted. The study of the cropping pattern is of paramount significance for planning of agricultural development as also to provide balanced programmes for cropping so that the people of this area get adequate food and raw material for agro-based industries.

4.15.2 The following table gives the distribution of area under different crops both irrigated and un-irrigated as per the Agricultural Census 2005-06.

**TABLE 4.20**  
**DISTRIBUTION OF AREA AND THEIR PERCENTAGE**  
**UNDER DIFFERENT CROPS**

Sl. No.	Name of crop	Area in Hectares			Percentage to the total cropped		
		Irrigated	Un-irrigated	Total	Irrigated	Un-irrigated	Total
1	2	3	4	5	6	7	8
1	Paddy	4821	17704	22526	22.62	25.13	24.55
2	Ragi	1	4	5	0.01	0.01	0.01
3	Pulses and other Cereals	3	1	5	0.01	0.01	0.00
4	Sugarcane	866	21	886	4.06	0.03	0.97
5	Arecanut	2994	129	3123	14.05	0.18	3.40
6	Other spices & condiments	3045	143	3188	14.29	0.20	3.47
7	Cashewnut	624	17065	17690	2.93	24.22	19.28
8	Fruit	1413	17699	19113	6.63	25.12	20.83
9	Vegetables	60	71	131	0.28	0.10	0.14
10	Coconut	3635	8823	12416	17.05	12.46	13.53
11	Other oil seeds	3733	15	12556	17.52	12.52	13.68
12	Other crops	118	94	133	0.55	0.02	0.14
<b>Total</b>		<b>21314</b>	<b>70456</b>	<b>91771</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

4.15.3 Paddy during Kharif season had the highest share of cereals grown in the State. Among the cash crops Cashew nut, Coconut and Arecanut in that order were the most important crops. For the State as a whole 24.55 percent of the Gross Cropped area was under paddy. As regards the cash crops, Cashew nut accounted for 19.28 percent of the area followed by Coconut 13.68 percent and Arecanut 3.40 percent.

## CHAPTER V

### SUMMARY OF FINDINGS AND LIMITATIONS

#### 6.1 Summary of findings

The total number of operational holdings in Goa according to the current agricultural census was estimated to 52821 with the total operated area of 60742 hectares.

6.1.2 The total number of holdings in the State in 2005-06 agricultural census has shown a decrease of 11259 holdings, and increase of 6818 hectares when compared with 2000-01 agricultural census figures i.e. 64080 holdings and 53924 hectares.

#### 6.2 Size class with distribution of operational holdings and their area

The size class below 0.5 hectares count for the highest number of holdings i.e.33184 which comes for 62.82 percent of total holdings and only 130 holdings on the size class '20 and above' hectares which count for 0.25 percent of total holdings.

6.2.2 In case of operated areas the size class '20.0 & Above' hectares had maximum operated areas i.e. 23931 hectares which is 39.40 percent of total operated area and the minimum operated area 1865 hectares was observed in the size class 7.5 – 10.0 hectares which is 3.07 percent of the total operated area in Goa.

#### 6.3 Average size class of operational holdings

The average size class of operational holding in Goa in all categories is 1.15 hectares.

#### 6.3.1 Net area sown is 58207 hectares which is 96 percent of total area of operational holdings:

The area under current fallow is 800 hectares which is 0.32 percent of total net cultivated area.

#### 6.3.2 Operational holdings receiving irrigation

There were 22579 operational holdings under irrigation which was 42.74 percent of total holdings in Goa. The net irrigated area was 14070 hectares which was 23.16 percent of total holdings areas in Goa.

#### 6.3.3 Irrigated and un-irrigated area under different crops

As stated above the operational holdings under irrigation formed 43.16 percent of the State holdings. The irrigated area under Paddy formed 22.62 percent of the State irrigated area. The un-irrigated area under Paddy formed 25.13 percent of the total un-irrigated area.

#### 6.3.4 District wise analysis

There are two districts in Goa viz. North Goa District and South Goa District. The number and area of the operational holding in these two districts were as follows.

North Goa District had 28748 holdings with 24503 hectares of operational area. This is 40.34 percent of the operated area in Goa.

South Goa District had 24073 holdings with 36239 hectares of operational area. This is 39.0 percent of the operated area in Goa.

#### **6.4 Limitations:**

For Agricultural Census for 2005-06, the data has been collected through the field inquiries from all the operational holdings from the selected villages. The 50 percent of the villages/wards in each Taluka were selected by using random sampling method and in each selected village/ward, cent percent of the operational holdings were covered in the Census. The data has been collected through oral inquiry methods. Since there is no primary system in Goa, the data has its own limitations, hence to get quality of data; primary reporting system is needed in the State.

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