GOVERNMENT OF KERALA

REPORT ON INPUT SURVEY (2016-17)

Agriculture Census Division
Department of Economics & Statistics
Thiruvananthapuram, Kerala.
www.ecostatkerala.gov.in

GOVERNMENT OF KERALA

REPORT ON INPUT SURVEY (2016-17)

Agriculture Census Division
Department of Economics & Statistics
Thiruvananthapuram, Kerala.
www.ecostatkerala.gov.in
2022

Preface

The Ministry of Agriculture & Farmers Welfare has been conducting Input Surveys as part of Agriculture Census Programme at five year intervals from 1976-77. The present Input Survey 2016-17 is ninth of its series. The Input Survey provides district level information on the input usage pattern of operational holdings.

Government of India have entrusted Department of Economics and Statistics for the execution of Input Survey in Kerala. The present ninth Input Survey in Kerala has been conducted as the reference year 2016-17 (July –June). The field work was done by the Taluk Statistical Officers/ Statistical Inspectors in the supervision of District/State level officers in the department.

The Report contains introduction, concepts & definitions, sample design & estimation procedure and also analysis & detailed tables relating multiple cropping, use of chemical fertilizers, organic manures and pesticides separately for irrigated and un-irrigated areas under various crops, use of agricultural implements & machinery, type of seeds used, agricultural credit availed etc., at State and District levels.

I express my sincere thanks to State & District Level Co-ordination Committees for their co-operation in carrying out the survey in the state. I extend my sincere gratitude to all statistical personnel of District & Taluk level offices for their earnest efforts in bringing out the survey a big success. I appreciate the Agriculture Census Wing of the Directorate for their painstaking exercise in publishing the report.

I hope that the data related to input usage pattern of operational holdings will help the planners, policy makers, academicians and researchers in the agriculture and allied sectors.

Suggestions, if any are most welcome.

Thiruvananthapuram
31/03/2022

SAJEEVU P. P.
DIRECTOR

Highlights

- The number of operational holdings in 2016-17 is 75.2 lakh and there is an increase of 11.004% as compared to Input Survey 2011-12. The area shows 2.52% decline from 2011-12 and the estimated area in 2016-17 was 13.59 lakh Ha.
- The average number of parcels per holding as per Input Survey 2016-17 is 1.26. The average area per parcel is 0.14 ha and average area per holding is 0.18 ha.
- 26.86% of gross cropped area irrigated during 2016-17. In 2011-12, the irrigated area was 23.68%.
- During 2016-17, 17.53% of irrigated holdings growing one or more crops treated with chemical fertilizer. The corresponding area was 52.9%.
- The widely used chemical fertilizer in irrigated holdings during 2016-17 was Urea, Super phosphate, Murate of Potash & Di-Ammonium Phosphate. In un-irrigated area, Calcium Ammonium Nitrate & Rock Phosphate was used in addition to this.
- The widely used organic manures were farm yard manure/ compost/ biogas manure, oil cake, other organic manure & green manure.
- In 2016-17, 4.94% of holders availed agricultural credits and the average amount per holder is Rs. 2,14,810/-
- The percentage number of holders who adopted pest control methods was 25.3%.
- Only 0.05% of holders performed soil testing.

പ്രസക്ത ഭാഗങ്ങൾ

- ഇൻപുട്ട് സർവ്വേ 2016–17 പ്രകാരം സംസ്ഥാനത്ത് ആകെ 75.2 ലക്ഷം ഹോൾഡിഗികളാണുള്ളത്. 2011–12 ൽ നിന്നും 11.004% വർദ്ധനവുണ്ടായിട്ടുണ്ട്. 2016–17 ലെ വിസ്തൃതി 2011–12 ൽ നിന്ന് 2.52% കുറഞ്ഞ് 13.59 ലക്ഷം ഹെക്ടറായിട്ടുണ്ട്.
- ഇൻപുട്ട് സർവ്വേ 2016–17 പ്രകാരം ഓരോ ഹോൾഡിംഗിലുമുള്ള പാഴ്സലുകളുടെ ശരാശരി എണ്ണം 1.26 ആണ്. ഒരു പാഴ്സലിന്റെ ശരാശരി വിസ്തൃതി 0.14 ഹെക്ടറും ഒരു ഹോൾഡിംഗിന്റെ ശരാശരി വിസ്തൃതി 0.18 ഹെക്ടറുമാണ്.
- 2016–17 ൽ മൊത്തം വിള വിസ്തൃതിയുടെ 26.86% ജലസേചനം നടത്തിയിട്ടുണ്ട്. 2011–12 ലെ ജലസേചനത്തിന്റെ വിസ്തൃതി 23.68% ആയിരുന്നു.
- 2016–17 ൽ ജലസേചനമുള്ള ഒന്നോ അതിലധികമോ വിളകൾ കൃഷി ചെയ്തിരുന്ന ഹോൾഡിംഗുകളുടെ 17.53% ൽ രാസവളം പ്രയോഗിച്ചിരുന്നു. ഇത് ജലസേചനമുള്ള വിളകളുടെ ഹോൾഡിംഗുകളുടെ ആകെ വിസ്തൃതിയുടെ 52.9% ആയിരുന്നു.
- ജലസേചനമുള്ള ഹോൾഡിംഗുകളിൽ വ്യാപകമായി ഉപയോഗിച്ചിരുന്ന രാസവളങ്ങൾ യൂറിയ, സൂപ്പർ ഫോസ്ഫേറ്റ്, മ്യൂറേറ്റ് ഓഫ് പൊട്ടാഷ്, ഡി–അമോണിയം ഫോസ്ഫേറ്റ് എന്നിവയാണ്. ജലസേചനം നടത്താത്ത പ്രദേശങ്ങളിൽ ഇവയ്ക്ക പുറമേ കാൽസ്യം അമോണിയം നൈട്രേറ്റ്, റോക്ക് ഫോസ്ഫേറ്റ് എന്നിവ കൂടി ഉപയോഗിച്ചിരുന്നു.
- 2016–17ൽ വ്യാപകമായി ഉപയോഗിച്ചിരുന്ന ജൈവ വളങ്ങൾ കൃഷിയിടത്തിലെ വളം/ കമ്പോസ്റ്റ്/ ബയോഗ്യാസ് വളം, എണ്ണ പിണ്ണാക്ക്, മറ്റ് ജൈവ വളം, പച്ചിലവളംഎന്നിവയാണ്.
- 2016–17 ൽ 4.94% ഹോൾഡർമാർ കാർഷിക വായ്പ എടുത്തിരുന്നു. ഒരു ഹോൾഡറുടെ ശരാശരി വായ്പ തുക 2,14,810/– രൂപയാണ്.
- 2016–17 ൽ 25.3% ഹോൾഡർമാർ വിവിധ കീട നിയന്ത്രണ ഉപാധികൾ സ്വീകരിച്ചിരുന്നു.
- മണ്ണ് പരിശോധന നടത്തിയിട്ടുള്ള ഹോൾഡർമാർ 0.05% മാത്രമാണ്.

List of Officers associated with the preparation of Report

Shri. Sajeevu P.P.
Director

Name	Designation
Shri. P.D. Santhoshkumar	Additional Director (Prices)
Shri. T.P. Vinodan	Joint Director & State Technical Officer
Smt. Deepa S.A.	Deputy Director
Shri. K. V. Abhilash	Computer Supervisor
Shri. Aji Anand V. V.	Research Assistant
Smt. Anitha P.	Research Assistant
Smt. Sheeja Devi. P. S.	Confidential Assistant Grade I

Contents

Chapter – 1
Introduction

From the commencement of first Five Year Plan, various schemes were taken up to improve the contents and coverage of Agricultural Statistics and their accuracy. The planning and execution of Agricultural programmes are often handicapped for want of comprehensive and reliable data. Due to planned development and expansion of economy, new problems of formulation and execution of projects for more intensified and diversified development have become essential. This has necessitated further improvement of their quality and content of Agricultural Statistics. During the successive five year plans, a number of measures were taken up with a view to filling up gaps in the existing Agricultural Statistics system and devise base and means of extending its scope.

Starting with the second Agriculture Census 1976-77, Input Survey has been conducted as a follow up survey of the Agriculture Census. Nine input surveys with reference year 1976-77, 81-82, 86-87, 91-92, 96-97, 2001-02, 2006-07, 2011-12 & 2016-17 have been completed so far. The present report on input survey 2016-17 is ninth of its series.

In the past, approach to agricultural planning in India was mainly restricted to setting out targets of production for different crops and other agricultural commodities at the national and state levels. In the absence of detailed data on existing and potential resources for various agro-climatic reasons at the farm levels the task of planning from the grass root becomes difficult. At the farm level, it is the farmer who decides what to produce, when to produce and how much to produce. The programme and incentives which are given to the farmers should take into account awareness of the basic characteristics of the farmers' holdings such as the size distribution, the pattern of land use, availability of water and the resources in human, animal and mechanical power on the farm. It is in this context that Agriculture Census/ Input Survey becomes important. Thus the main objective of the input survey is to generate data on consumption of various agricultural inputs according to major size groups of operational holdings i.e., marginal (1 ha) small (1-1.99 ha), semi medium (2.00-3.99 ha), medium (4-9.99 ha) and large (10 ha and above). This information is vital for planning, production, imports and distribution of fertilizers. The inputs covered are chemical fertilizer, pesticides, certified/ notified seeds, farm yard manures /compost, bio-fertilizers, agriculture implements and machinery and agricultural credit.

The detailed analysis of data on different parameters of the Input Survey may be seen in the report. The scope and coverage of the survey have been expanding over the years keeping in view the requirements of agricultural planning and policy making at the state and lower administrative levels.

Chapter – 2
Concepts & Definitions

2.1 Operational Holding:

Operational holding is defined as '*All land which is used wholly or partly for agricultural production and is operated as one technical unit by one person alone or with others, without regard to the title, legal form, size or location*'. The technical unit has been defined as '*that unit which is under the same management and has the same means of production such as labour force, machinery and animals*'. Hence the actual cultivator and not the owner is the unit for collection of data.

An operational holding would include both cultivated and uncultivated area. If, for example, an operational holding consists of four survey numbers out of which one survey number is put to non-agricultural use, the total area of the operational holding would be equal to the total geographical area of the four survey numbers. The holding will exclude Government Forest land, Government waste land and village common grazing land. If Government waste land is allotted to an individual for cultivation purpose then it will be treated as a holding.

If all the survey numbers of an operational holding are put to non-agricultural use, then it would not be considered as an operational holding for the purpose of Agriculture Census as also for Input Survey.

If, during the reference year, the entire area of an operational holding is under current fallow, this will still be considered as an operational holding for Agriculture Census, but as no information can be gathered from such holding in Input Survey, these types of holdings will not be included in the sampling frame of Input Survey for collecting information but will be added for preparation of multiplier tables in their respective size classes. However, if entire area of a holding is under current fallow and was fallow during the previous year of current year (reference year) also, it will not be considered as an operational holding for Agriculture Census/Input Survey. In other words, if entire area of a holding has been lying fallow for two years including year of reference/current year, such holding will not be considered as an operational holding for Agriculture Census/Input Survey.

In some cases, land is divided among all the members of the family. In case where it is divided among husband, wife and minor children and cultivation is being done by the husband as head of the family, the entire land may be treated as one operational holding.

There might be cases where in the record, a holding is shown jointly in the names of more than one co-sharer while in practice the land might have been privately divided and the co-sharers are independently cultivating. In such cases where there is no dispute these will be treated as many operational holdings as are the number of independent cultivators.

If in one holding, three or four brothers are actually cultivating the land independently of each other although there is no legal partition of land. From the census point of view, this

would constitute three or four operational holdings and thus these would be separately listed in the sampling frame for Input Survey.

For cultivated areas in the Forests, no detailed land records are prepared. In the absence of the land records and revenue agency such areas are excluded for census purposes and thus will not be included in Input Survey also.

2.2 Parcel

A parcel is all land entirely surrounded by land of other holdings or by land not forming part of any holding. It may consist of one or more cadastral units, plots or fields.

2.3 Holder or the Operator

A person who holds the responsibility for operation of agricultural holding is defined as holder or the operator for Agriculture Census purposes. He exercises technical initiative and responsibility for operation of holding and may have full economic responsibility for it (i.e. as owner) or share this with others (as a tenant). When two or more persons share jointly (as partners) the economic and technical responsibility for operation of an agricultural holding, each one of them is to be considered as a holder if they belong to different households, the holding will be termed as joint holding. For Input Survey, any one of these could be taken as operational holder and be approached for giving response to questionnaire.

2.4 Total area of holding

The total area of the holding should include the total of all land forming part of a unit which is under the same technical responsibility and management. It would also comprise the land occupied by the farm buildings, including the house of the holder, provided such buildings are within the cultivated area. If the farm buildings are located outside cultivated area and are covered under Abadi area, then area of such buildings will not be included in the area of the holding.

2.5 Agriculture production

Agricultural production would mean the growing of field crops, fruits, grapes, nuts, seeds, trees nurseries (except those of forest trees), bulbs, vegetables and flowers, production of coffee, tea, cocoa, rubber, jute, oilseeds, grasses, etc.

If special efforts are made to raise grass, it would be treated as a crop for the purpose of the survey.

2.6 Land Utilisation

Usually for land records, a nine-fold classification of land use is followed. For the purpose of Input Survey, this has been abridged to three categories comprising of net sown area, area under current fallow and uncultivated area.

Net area sown

The Net Area Sown represents the total cultivated area during the reference year without considering the number of times it has been cultivated in a year. Thus for the purpose of finding the net sown area, the area cultivated more than once during the same year will be counted only once. Both field crops and orchards will form part of the net sown area.

Area under current fallow

The area which are usually cropped but due to some reason or the other were not cultivated during the reference year are classified as current fallow. Thus the area kept as fallow during the current year but cultivated during the previous year will be categorized as current fallow. Any seedling area, if not cropped in the same year, would be treated as current fallow. The area which is not being cultivated for more than one year will be categorized as old fallow or culturable waste.

Area not available for cultivation/ Uncultivated area

This would include the following seven categories: -

i) *Fallow land other than current fallow*: This would include all lands which were taken up for cultivation but are temporarily out of cultivation for a period of greater than one year and not more than five years. The reason for keeping lands fallow may be one or more of the following:-
   a) Poverty of cultivators,
   b) Inadequate supply of water,
   c) Adverse climatic conditions,
   d) Silting of canals and rivers and
   e) Unremunerative nature of farming

ii) *Culturable waste*: This includes lands available for cultivation, whether or not taken up for cultivation at any time. These are lands which were not cultivated during the current year and the last five years or more in succession for one reason or the other. Such lands may be either fallow or covered with shrubs and jungles which are not put to any use. Land once cultivated but not cultivated afterwards for five years in succession should also be included in this category at the end of the five years. Culturable waste land within the holdings would alone be covered for the Input Survey.

iii) *Permanent pastures and other grazing land:* This should include all grazing lands, whether they are permanent pastures and meadows or not. Village common grazing land shall be excluded for purpose of census.

iv) *Land under miscellaneous tree crops:* This includes all cultivable land, which is not included in the net area sown but is put to some agricultural use. Lands under casuarina trees, thatching grasses, bamboo bushes and 'orchards' should be

covered under this category. Land of this type outside the holdings will not be included.

v) *Forests*: This should include all lands classified as 'Forests' under any legal enactment dealing with forests or administered as forests, whether State owned or private, and whether wooded or maintained as potential forest land. The area of crops rose in the forest and grazing lands or areas open for grazing within the forests should remain included under the forest area. ***Only private forests belonging to the operational holder would be covered for the purpose of Input Survey.***

vi) *Area under non-agricultural use*: This should include all lands occupied by buildings, tanks and ponds put to uses other than agricultural purpose within the holdings of the operational holder.

vii) *Barren and uncultivated land*: This should include all barren and uncultivated land within the operational holding.

2.7 Integrated Pest Management (IPM)

Traditionally there have been a number of practices adopted by farmers for plant protection. These practices could be categorized in four groups, viz; agronomic and cultural control, mechanical control, biological control and chemical control. Usually, a specific approach keeping in view crop variety and agro-climatic conditions is adopted by the farmer for protection of his crops against insects and pests. The approach may be a combination of methods falling in one or more of the above four categories. For best results the experts advise a judicious combination of these approaches and label it as Integrated Pest Management (IPM). The components of IPM program are outlined below:

i) Agronomic and Cultural Practices

This is a preventive method and is based upon knowledge of life history and habits of pest. The practices covered in this category include: deep ploughing after harvesting a crop to expose the hiding or resting insects, weeding, removing and destroying of stubbles and other trash, adjusting the time of sowing to avoid peek incidence period of pests. Clean cultivation, the removal of alternative wild hosts, crop rotations and choosing of insect and disease resistant varieties.

ii) Physical and Mechanical Control

This is one of the oldest methods and includes measures, such as collection of eggs and caterpillars (in active stages of pests); removal and destruction of infected part of the plant, beating of drums, laying of night traps and yellow traps. These methods are found effective at initial stage of the pest incidence when practiced by a large number of farmers in a particular area.

iii) Biological Control

Biological control or bio-control is a method of controlling pests such as insects, mites, weeds and plant diseases using other organisms. It relies on predation, parasitism, herbivory, or other natural mechanisms, but typically also involves an active human management role. There are three basic strategies for biological pest control: classical (importation), where a natural enemy of a pest is introduced in the hope of achieving control; inductive (augmentation), in which a large population of natural enemies are administered for quick pest control; and inoculative (conservation), in which measures are taken to maintain natural enemies through regular reestablishment. Natural enemies of insect pests, also known as biological control agents, include predators, parasitoids, pathogens, and competitors. Biological control agents of plant diseases are most often referred to as antagonists. Biological control agents of weeds include seed predators, herbivores, and plant pathogens.

iv) Chemical Control

This method relates to use of insecticides, pesticides and weedicides, which are used as dusts, sprays and granules on the crops. Because of their nature of producing immediate results such chemicals are most popular among the farmers. Serious limitations, particularly those relating to residues on crops and destruction of useful insects, have been noted in recent years in usage of these chemicals.

2.8 Chemical Fertilizers, Organic Manure, Green Manure and Bio-Fertilizers

Package of practices followed for replenishing the nutrient losses from the soil as a result of cultivation to maintain the fertility of the soil involves use of organic manure, green manure, chemical fertilizers and bio-fertilizers. These are explained below:

a) Chemical Fertilizers

The term chemical fertilizers refer to chemical compounds which are manufactured in factories and are used as soil nutrients. These are further classified as “macro nutrients” which supply nitrogen (N), phosphate (P) and Potash (K) and “micro nutrient” fertilizers which supply Zinc, Manganese, Copper, Iron, Aluminium etc. The popular macro nutrient fertilizers are Urea, Diammonium Phosphate (DAP), Murate of Phosphate (MOP), Calcium Ammonium Nitrate (CAN) and a number of complex fertilizers and the physical mixtures of these.

b) Organic Manure

The Organic Manure is usually not manufactured in chemical factories and is produced by the farmers in their fields using various types of agricultural wastes. Sometimes these are also prepared using the sewage silt or municipal waste in urban areas. The organic manure is usually bulky material and is transported in trolleys. The types of manures covered in this would be Farm Yard Manure (FYM), which is prepared by putting agricultural wastes in a pit for decomposition and composting. This would also include the Vermi Compost. Various forms of oil cakes, which are used as fertilizers, would also fall in this category. Earth-worm forms part of other organic manure.

c) Bio-fertilizers

Bio-fertilizers are sold in small packets and required to be stored at specified temperature. These carry some living bacteria on organic base. The examples of bio-fertilizers are Rhizobium, Azetobactor, Blue-green Algae and Phosphate Solubilizing Bacteria (PSB). When bio-fertilizers are put in the soil, the bacteria contained in the fertilizer packet are spread in the soil and start their activity, i.e., fixing the nitrogen from air to soil. Hence bio-fertilizers are not soil nutrients in themselves; rather they act as catalysts/direct agents for making the soil nutrients available. These types of fertilizers are not very common among farmers and only some progressive farmers use them. Also, because of their storage requirements these are not available everywhere.

d) Green Manure

Green manure refers to cultivation of a specific type of vegetation with the intention of ploughing it back in the soil when the leaves are tender and easily decomposable. The popular types of green manure used by the farmers include Sesbania (Dhencha), Sunhemp (Sanai), Indigo, Urd and Cowpea. There is also a practice of ploughing back the leafy portion of leguminous crops in the field after first or second picking for the purpose of green manuring. All such cases will be counted for the purpose of obtaining area under green manure.

2.9 Soil Health

For assessing the soil health status, State Government have established testing laboratories for testing the PH value, i.e. N (Nitrogen), P (Phosphorus) and K (Potash) values of the soil samples collected from the farmers' fields on nominal charges. Farmers are accordingly, advised by the Agriculture Department to increase the fertility of the soil by using specific fertilizers and chemicals depending upon the PH values.

2.10 Seeds

2.10.1 Classes of Quality Seeds

The various classes of seed that are used in a seed production programme are: (1) breeder seed, (2) foundation seed, (3) registered seed, and (4) certified seed. These classes of seeds were first clearly defined by the International Crop Improvement Association in 1946 in relation with fodder and forage crops; in 1968 it recommended the adoption of the same system in the case of grain crops as well. These different classes of seed have different requirements and serve different functions, a brief description of which is given below.

1) *Breeder Seed*: Breeder seed is the genetically pure seed or the vegetative propagating material produced by the breeder. A breeder is a person (qualified plant seeder) or organization who raises plants primarily for breeding purpose. In India, besides the institutes developing it, Breeder seed is also produced by Indian Council of Agriculture Research, National Seed Corporation, State Farm breeder seed

required every year. Breeder seed is used to produce the Foundation Seed. Breeder Seeds are protected by legal rights called as Breeder's rights.

2) *Foundation Seed*: foundation seed is obtained from breeder seed by direct increase. Foundation seed is genetically pure and is the source of registered and/or certified seed. Production of foundation seed is the responsibility of NSC. Foundation seed is produced on Government farms, at experiment stations, by Agriculture Universities or by competent seed growers under strict supervision of experts from NSC. This class of seed should be produced in the area of adaptation of the concerned variety.
3) *Registered Seed*: Registered seed is produced from foundation seed or from registered seed. Registered seed is genetically pure and is used to produce certified seed or registered seed. It is usually produced by progressive farmers according to technical advice and supervision provided by NSC. Often registered seed is omitted and certified seed is produced directly from foundation seed; this is the general practice in India.
4) *Certified Seed*: Certified seed is produced from foundation, registered or certified seed. This is so known because it is certified by a seed certification agency (in this case State Seed Certification Agency) to be suitable for raising a good crop. The certified seed is annually produced by progressive farmers according to standard seed production practices. To be certified, the seed must meet the prescribed requirements regarding purity and quality. Certified seed is available for general described to farmers for commercial crop production. Its production is generally by State Seeds Corporations, but NSC also undertakes the supervision of certified seed production, if required. The production of breeder and foundation seeds is very costly since a very high standard of purity must be maintained. The requirements for certified seeds are relatively less rigid than those for foundation seed, and hence it is considerably cheaper.

2.10.2 Requirement for certified seeds

Seed has to meet certain rigid requirements before it can be certified for distribution. The first and foremost requirement is that the seed must be of an improved variety released by either the Central or a State Variety Release Committee for general cultivation and notified by the Ministry of Agriculture and Farmers Welfare, Government of India; this is essential for the seed to be certified. The other requirements are related to genetic purity, freedom from weeds, diseases and pests, germination etc. It may be noted that there is considerable variation in the requirements for certification in various crops. In certain cases, e.g., maize, the requirements are more rigid than in the others.

2.10.3 High-Yield Crops

High-yield agricultural crops are those that have been breed, genetically modified, or fertilized to increase their production yields. The health and wellbeing of the world's growing population are largely dependent on the ability of the agricultural industry to raise high yielding food and fiber crops. No one knows for certain when the first crops were

cultivated. At some time in the past, people discovered that seeds from certain wild grasses could be collected and later planted where they could be controlled during the growing process and eventually harvested for food.

2.10.4 Hybrid Seed

In agriculture and gardening, hybrid seed is seed produced by crossing two different varieties of the same plant. Hybrid seeds are listed as F1 types, as opposed to open pollinated (OP) types. Open pollinated seeds result from a simple sharing of pollen between two like parent plants. Hybrid varieties often feature traits like disease resistance, improved productivity, early maturity etc. Seeds from hybrid plant cannot be saved for next season. Production of Hybrid seeds by companies is a costly and time consuming affair.

2.11 Crop-wise Area (Irrigated and Un-irrigated)

The following classification has been used for coding of crops for the purpose of Agriculture Census and Input Survey.

i) Food crops:

This includes cereals, pulses, fruits, vegetables, spices and condiments and other food crops which are enumerated below:

Cereals: Cereals include rice, jowar, bajra, maize, ragi, wheat, small millets, barley and other cereals.

Pulses: The area under important pulses may be given crop wise. Pulses include gram, tur, urad, moong, masur and other pulses.

Food grains: The total area under food grains includes area covered under both cereals and pulses.

Fruits: Fruits include mangoes, citrus fruits, bananas, apples, guavas, grapes, pomegranate, papayas and others. Dried fruits include cashew nuts, almonds, pistachio, walnut and others. Total fruits include fruits as well as nuts (dried fruits).

Vegetables: Vegetables include potato, carrot, sweet potato, tomato, spinach, brinjal, cauliflower, etc.

Spices & Condiments: Spices and condiments include black pepper, chillies, ginger, turmeric, cardamom, betel nuts (areca nuts), garlic, coriander etc.

ii) Non-food crops:

These include oilseeds, fibres, dyes and tanning material, drugs and narcotics, plantation crops, fodder crops, green manure crops etc.

Oilseeds: Include groundnut (nuts in shell), castor seed, seasamum, rapeseed and mustard, linseed, coconut, niger-seed, safflower seed, cotton seed and other oilseeds.

Fibres: Fibres include cotton (Lint), cotton (Kapas), jute mesta, sunhemp (fibre) and other fibres.

Dyes & Tanning Materials: Include Indigo and others.

Drugs & Narcotics: Include opium, tobacco and others.

Plantation Crops: Include tea, coffee, rubber and others.

Fodder Crops: Include guar, oats, and other fodder crops.

Chapter – 3
Sampling Design

3.1 Objective

The main objective of the survey is to collect data on usage of various agricultural inputs, according to major size- groups of operational holdings, viz; marginal (below 247 cents), small (248 to 494 cents), semi-medium (495 to 988 cents), medium (989 to 2470 cents) and large (2471 & above). The Inputs covered in the survey include chemical fertilizers, HYV seeds, Hybrid seeds, chemical pesticides, bio-pesticides, farmyard manures/compost, bio-fertilizers, agricultural implements and machinery and agricultural credit.

3.2 Coverage

The Input survey covers all the resident cultivators and all types of agricultural holdings except institutional holdings and holdings operated by persons not residing in the sample ward. i.e., Individuals & Joint holdings operated by resident cultivators in the sample ward will constitute the population for the survey. The data will be collected for all Social Groups and not separately for SC, ST and Others.

3.3 Unit of data collection and Reference Period

The basic unit, for which data for various parameters of Input Survey were collected, was 'operational holding' as distinct from 'ownership holding'. Thus, actual cultivator and not the owner is the unit for collection of data in Input Survey.

The reference period for this survey was the agricultural year 2016-17 (July, 2016 to June, 2017).

3.4 Sampling Design & Methodology

A two-stage stratified sampling is adopted for the Input Survey 2016-17. Corporation/ Municipalities/ CD Blocks constitute the strata. Municipal/ Corporation/ Panchayath wards within a stratum form first-stage units. 'Operational Holdings' in the selected wards constitutes the second-stage units.

The sample size of first stage units were 7 percent of the total number of wards from each stratum. These 7 percent wards were selected randomly out of 35 percent wards already selected for Phase- II of Agricultural Census 2015-16. In selected wards, all the operational holdings were grouped into the following five size groups:

Sl. No.	Operated area	Size group
1	Below 1ha (Below 247cents)	Marginal
2	1 ha & above but below 2 ha (248 to 494 cents)	Small
3	2 ha & above but below 4 ha) (495to 988 cents)	Semi -medium
4	4 ha & above but below 10 ha(989 to 2470 cents)	Medium
5	10ha and above (2471 cents & above)	Large

Four operational holdings were selected from each of the above mentioned five size groups of operational holdings. The selection was made separately from each of these size groups following Circular Systematic Sampling method. If in a particular size group, the total number of operational holdings were less than 4, all the holdings of that size group were covered. The data for Input Survey was collected through field enquiries from these selected operational holders of sampled villages.

3.5 Item Coverage

Under the Input Survey 2016-17, information will be collected according to five size–groups of operational holdings for the following items: -

i) Number of parcels;
ii) Multiple cropping, separately for irrigated and un-irrigated crops;
iii) Use of chemical fertilizers, organic manures, chemical pesticides and bio-pesticides, separately for irrigated and un-irrigated areas under crops;
iv) Use of agricultural equipments and machines (owned/ hired);
v) Agricultural credit availed.
vi) Types of Seeds used (certified/ Hybrids) and quality problems.
vii) Integrated Pest Management (IPM) practices.
viii) Age, size of household, educational qualification of holders.
ix) Soil health/ Soil testing.

Chapter – 4
Estimation Procedure

4.6Estimation Procedure

For estimating the population totals of various characteristics in the Input Survey 2016-17 'simple unbiased estimate' method was adopted which is described below:

The notations used are as under:

1. $Y_{ijp}(k)$- Value of characteristic in the p^{th} holding of j^{th} ward of the i^{th} Block/ Municipality/ Corporation (i.e. the stratum) in the particular size class (say k^{th}).
2. $N_{ij}(k)$ – Total number of holdings in the k^{th} size class in the j^{th} selected ward of the i^{th} Block/ Municipality/ Corporation.
3. $n_{ij}(k)$ - Number of holdings sampled in the k^{th} size class in the j^{th} selected ward of i^{th} Block/ Municipality/ Corporation.
4. N_i – Total number of ward in i^{th} Block/ Municipality/ Corporation.
5. n_i –Number of wards selected in the i^{th} Block/ Municipality/ Corporation for collection of data on inputs.
6. $\hat{Y}_i^{(k)}$ = Estimate of characteristic under the study for the i^{th} Block/ Municipality/ Corporation in k^{th} size class.
7. $\hat{Y}_D^{(k)}$ = Estimate of characteristic under the study for the district in k^{th} size class.
8. M = Number of Block/ Municipality/ Corporation in the district

Then the estimate of the characteristic under study for the i^{th} stratum in the k^{th} size class is given by the formula:-

$$\hat{Y}_{Ti}(k)=\frac{N_i}{n_i}\sum_{j=1}^{n_i}\frac{N_{ij}(k)}{n_{ij}(k)}\sum_{p=1}^{n_{ij}(k)}Y_{ijp}(k) \quad \text{.....(i)}$$

And for the district it becomes:-T_i

$$\hat{Y}_D(k) = \sum_{i=1}^{M}\frac{N_i}{n_i}\sum_{j=i}^{n_i}\frac{N_{ij}(k)}{n_{ij}(k)}\sum_{p=1}^{n_{ij}(k)}Y_{ijp}(k) \quad \text{.....(ii)}$$

$$= \sum_{i=1}^{M}\hat{Y}_{Ti}(k)$$

The sampling error for the characteristic under study for the district is defined as the positive square root of the sample variance. The formula for the variance is given by:

$$\hat{V}[\hat{Y}_D(k)] = \sum_{i=1}^{M} N_i \frac{N_i - n_i}{n_i(n_i-1)}\sum_{j=1}^{n_i}(Y_{ij} - \bar{y}_i)^2 \quad \text{.....(iii)}$$

$$\text{Where } Y_{ij} = \frac{N_{ij}(k)}{n_{ij}(k)}\sum_{p=1}^{n_{ij}(k)}Y_{ijp}(k) \quad \text{..... (iv)}$$

And $\bar{y}_i = \frac{1}{n_i}\sum_{j=1}^{n_i} Y_{ij}$ ..... (v)

4.7 Limitations of Data

- Institutional holdings were not covered in the Input Survey.
- An operational holding may be treated wholly, partly or not treated at all with fertilizers/organic manures/ pesticides etc. For the purpose of the survey, holdings were classified only as treated or not treated with fertilizers/organic manures /pesticides etc. Accordingly, partly treated holdings were also considered as treated with fertilizer.
- The 'Purely Current Fallow' holdings have not been included in the sampled holdings of Input Survey for data collection but such holdings were included in the total number of holdings for estimation purpose.

Chapter – 5
Analysis of Input Survey Data

Dispersal of Operational Holdings

5.1 Distribution of operational holdings and operated area

According to Input Survey 2016-17 the total number of operational holdings was 75, 20,020 against the operated area of 13, 58,991 Ha. There is an increase of 11.004 percent in number of operational holdings and a decline of 2.52 percent in operated area when compared with last Input Survey 2011-12.The corresponding figures in Agriculture Census 2015-16 were 75.83 lakhs against the operated area of 13.95 lakhs Ha.

It is seen the estimates of number of holdings and operated area in Agriculture Census 2015-16 and Input Survey 2016-17 were very close. Since the institutional holdings and other type of holdings are excluded in Input Survey, it is normally expected that the number and area of holdings as per the Input Survey should be less than the corresponding data of Agriculture Census, although Input Survey is carried out after one year of the Agriculture Census.

5.2 Fragmentation of Operational Holding

A parcel has been defined as “all land entirely surrounded by land of other holdings or land not forming part of any holding.” It may consist of one or more cadastral units or fields and may not synonymous with survey number. Three of four adjoining survey numbers could make one parcel but two survey numbers of the same panchayath ward not adjacent to each other, would make two parcels.

An operational holding may consist of one or more than one parcel. The more the number of parcels, the more scattered will be the operational holding. All the parcels comprising an operational holding may lie within the ward of residence of the holder or might even be spread over one or more other wards.

The data on number of parcels was collected by interviewing the selected operational holder with a view to have information about the dispersal of operational holdings in different parts of the country. However, the outer limit for collecting the information in Input Survey was restricted to the district. Since an operational holding will have at least one parcel, the average number of parcels per operational holding cannot be less than one. The distribution of average number of parcels, average area per parcel and average area per holding in different size groups as per Input Survey 2016-17 may be seen in table 5.1.

In the table 5.1 below, the average number of parcel in 2016-17 was 1.26 and in 2011-12 it was 1.15. A slight increase is seen in the number of parcels per holding. But the average area per parcel and average area per holding shows a decreasing trend. This is due to the inverse relationship between number and area of operational holdings.

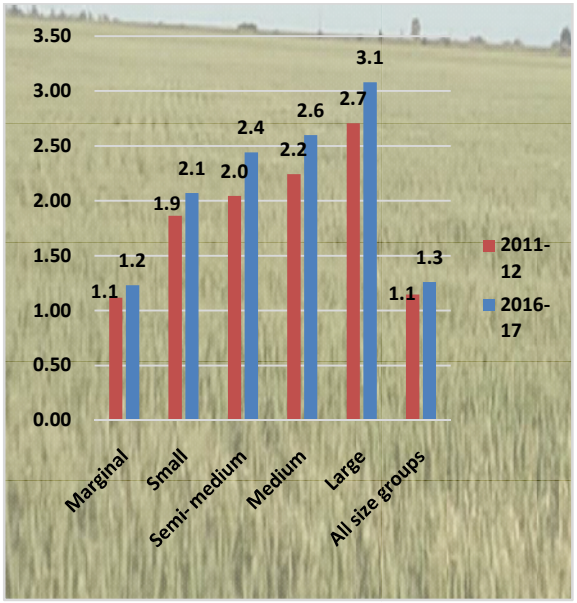
Table 5.1
No. of parcels per operational holding & average area per parcel by size groups

Sl. No.	Size Group	Total holdings		Total no. of parcels	Average number of Parcels per holding		Average area (in Ha) per parcel		Average area (in Ha) per holding	
		Number	Area (in Ha)		2011-12	2016-17	2011-12	2016-17	2011-12	2016-17
1	Marginal	7279288	914459	8986861	1.12	1.23	0.13	0.10	0.14	0.13
2	Small	176145	236898	364666	1.86	2.07	0.73	0.65	1.36	1.34
3	Semi-medium	53323	135304	130277	2.04	2.44	1.27	1.04	2.60	2.54
4	Medium	10144	53548	26344	2.24	2.60	2.32	2.03	5.21	5.28
5	Large	1120	18782	3452	2.71	3.08	6.86	5.44	18.58	16.77
	All size groups	7520020	1358991	9511600	1.15	1.26	0.18	0.14	0.21	0.18

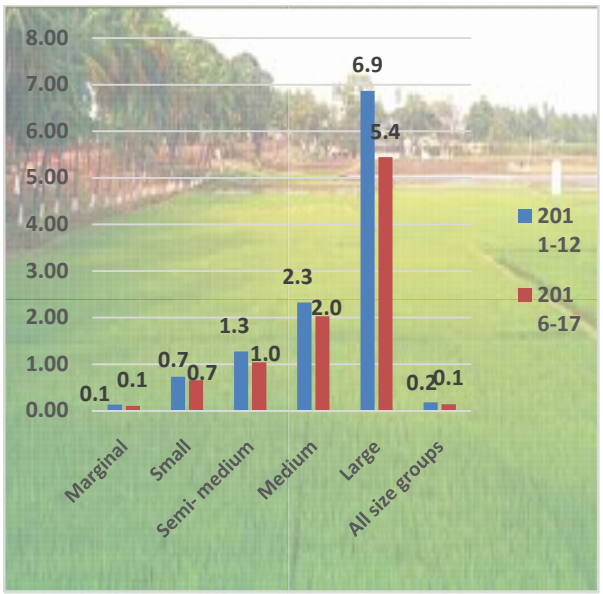
The average number of parcels per holding and average area per parcel from 1991-92 to 2016-17 is shown in table 6.1 of appendix 1.

The variation in average number of parcels per holding, average area per parcel and average area per holding in all size groups is shown in the graphs 5.1, 5.2 & 5.3 respectively.

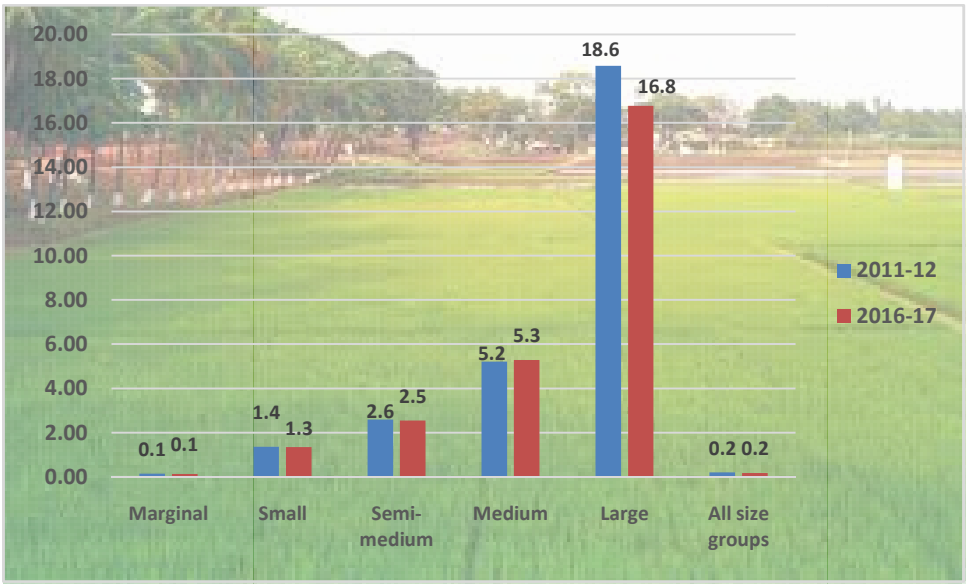
Graph 5.1
Average number of parcels per holding



Graph 5.2
Average area per parcel



Graph 5.3
Average area per holding



The distribution of area as per Input Survey 2016-17 is given in table 5.2 below. From this table, the gross cropped area as per Input Survey 2016-17 is 12, 57,815 Ha. Out of which 337859 Ha (26.86%) is irrigated and 919956 Ha (73.14%) is un-irrigated. In the last census in 2011-12, it was 23.68% and 76.32% respectively. That is, there is a slight increase in irrigated area as compared to previous census.

Table 5.2
Distribution of area according to size groups (in Ha)

Sl. No.	Size Group	Gross Cropped Area		Current fallow land	Other uncultivated land
		Irrigated	Un-irrigated		
1	Marginal	194134	600303	6487	170686
2	Small	69682	174928	2687	14937
3	Semi- medium	44989	98317	1346	6277
4	Medium	19791	36814	474	2352
5	Large	9263	9594	158	520
	All size groups	337859	919956	11152	194772

The comparison of area distribution with 2011-12 figures is shown in table 6.2 of appendix 1.

In gross cropped area, irrigated area shows an increasing trend and un-irrigated area shows a decreasing trend as compared to previous censuses and is given in the graph 5.4. The size class wise percentage distribution of irrigated and un-irrigated area is given in table 6.3 of appendix 1.

Graph 5.4
Percentage gross cropped area by irrigation status

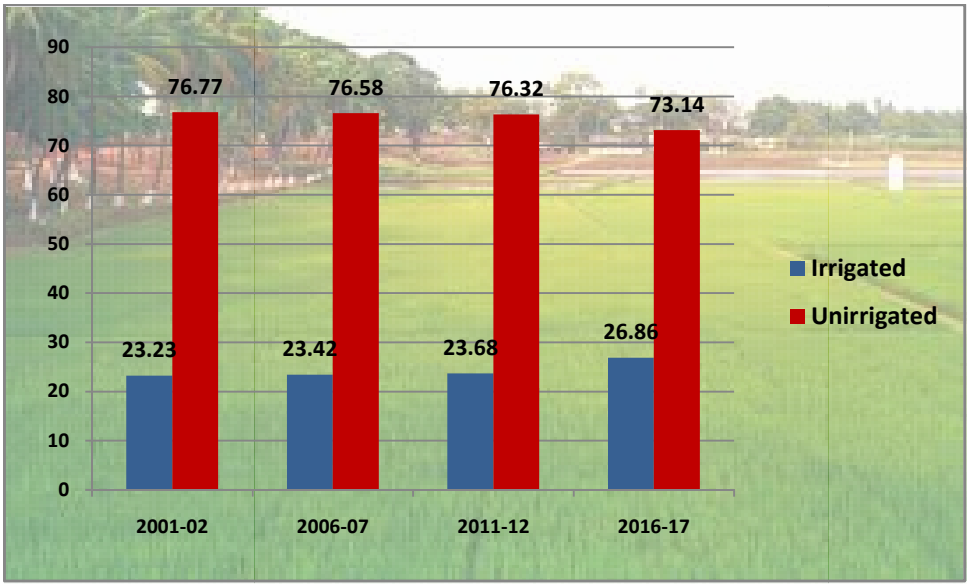


Table 5.3 below shows the irrigated and un-irrigated area. Both gross & net area shows a diminishing trend when compared to the previous census.

Table 5.3
Distribution of Irrigated & Un-irrigated area (in Ha)

Sl. No.	Size Group	Irrigated area		Un-irrigated area	
		Gross area	Net area	Gross area	Net area
1	Marginal	194134	183904	600303	553382
2	Small	69682	66051	174928	153223
3	Semi- medium	44989	42625	98317	85056
4	Medium	19791	18525	36814	32197
5	Large	9263	8997	9594	9107
	All size groups	337859	320102	919956	832965

5.3Extent of Multiple Cropping

The method of multiple cropping is used as an indicator of the intensity of land utilization. The percentage area cropped once is 86.9 in irrigated area where as that in un-irrigated area is 92.69. The percentage of area cropped twice and more than twice in irrigated area are 12.50 and 0.60 respectively. But the percentage of area cropped more than once in un-irrigated area is 7.31 only.

The result shows an increase in irrigated area cropped once and cropped more than twice from 2011-12 to 2016-17 i.e., from 81.8% to 86.9% and 0.50% to 0.60% respectively and a decrease in cropped twice i.e., from 17.7% to 12.5%.

Similarly there is an increase in un-irrigated area cropped once and a decrease in un-irrigated area cropped more than once from 2011-12 to 2016-17 i.e., from 83.86% to

92.69% and from 16.14% to 7.31% respectively. From this, it can be inferred that the cultivators show least interest in multiple cropping.

Table 6.5 of appendix 1 indicates that the average gross cropped area per operational holding decreased from 0.18 hectares in 2011-12 to 0.15 hectares in 2016-17.

The size class wise distribution of number of holdings, operated area, number of parcels and cropped area of all districts is given in tables 7.1 to 7.6 in appendix 1.

5.4 Cropping Intensity

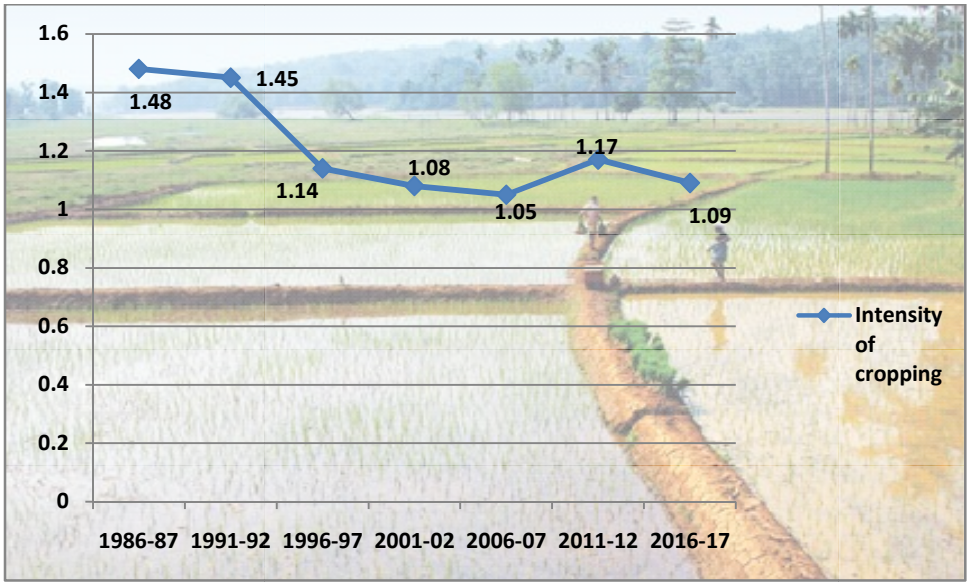
The intensity of cropping is the ration of gross cropped area to net cropped area. The intensity of cropping during 2016-17 is 1.09 and the size class wise distribution of irrigated and un-irrigated crops is given in table 5.4 below.

Table 5.4
Intensity of cropping

Sl. No.	Size Group	Irrigated crops	Un-irrigated crops	Total
1	Marginal	1.06	1.08	1.08
2	Small	1.05	1.14	1.12
3	Semi- medium	1.06	1.16	1.12
4	Medium	1.07	1.14	1.12
5	Large	1.03	1.05	1.04
	All size groups	1.06	1.10	1.09

The cropping intensity from 1986-87 to 2016-17 is shown in the following graph 5.5. This shows that there is a decreasing trend except 2011-12. The intensity decreased from 1.48 in 1986-87 to 1.09 in 2016-17.

Graph 5.5
Intensity of cropping from 1986-87 to 2016-17



5.5Cropping Pattern

From table 6.6 of appendix 1, it can be observed that 30.99% of gross irrigated area was occupied by paddy and 96.34% of paddy area (irrigated) covers high yielding varieties. 5.74% of gross area under un-irrigated crops was covered by paddy and 77% of this area was used for high yielding variety paddy. It can be seen that there was a slight decrease in paddy area under irrigated crops compared to previous census. While area under high yielding variety of paddy under irrigated crops increased during 2016-17.

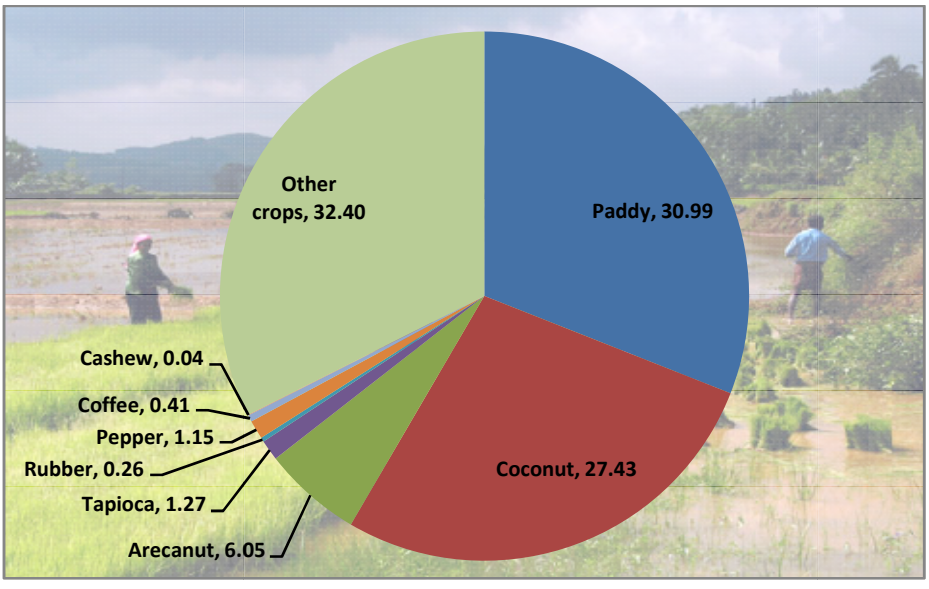
The percentage distribution of gross area under different major crops from 2001-02 to 2016-17 is shown in table 6.7 and its district wise distribution of 2016-17 is shown in table 7.7 of Appendix 1. In table 6.7, it is seen that there is a decrease in gross cropped area of major crops from 80.19 in 2011-12 to 73.59 in 2016-17. Comparing 2011-12 and 2016-17, the percentage of gross cropped area of paddy increased from 10.93 to 12.52 and all other crops shown decrease in area except coffee. During 2016-17, majority of area covered by rubber (25.41%) followed by coconut (24.27%).

The crop wise percentage distribution of major irrigated and un-irrigated crops given in graphs 5.6 and 5.7 and its comparison with previous Input Surveys is given in tables 6.8 & 6.9 in appendix 1.

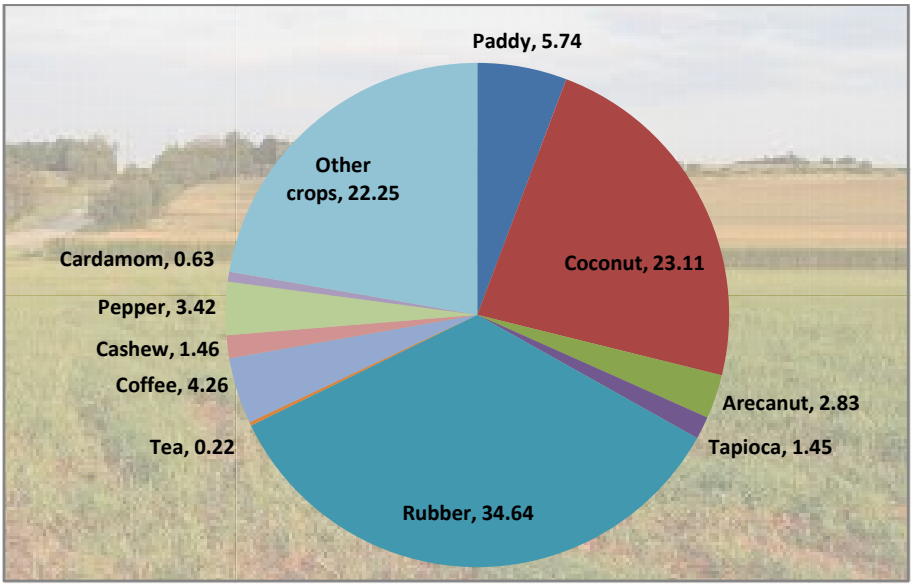
Among irrigated crops, more area was covered by paddy (30.99%) in 2016-17 followed by coconut (27.43%). While among un-irrigated crops, rubber (34.64%) was cultivated in more area followed by coconut (23.11%).

Most of the paddy area was lying in medium size group for both irrigated and un-irrigated crops. Coconut was cultivated more in marginal group of irrigated & un-irrigated area and rubber in large group of un-irrigated area.

Graph 5.6
Crop wise percentage distribution of irrigated area



Graph 5.7
Crop wise percentage distribution of un-irrigated area



Crop wise use of Inputs

5.6Application of Chemical fertilizers in irrigated and un-irrigated area

Chemical fertilizers are used to increase agricultural production and pesticides & IPM to protect the crop from insects and pests. Besides chemical fertilizers, organic manure is also used to enhance soil fertility. The most commonly used chemical fertilizers are Urea, Potash, Factamphos, Super Sulphate and Ammonium Phosphate. On the other hand Farm Yard Manure (FYM) / compost and oil cake are the most common organic manures used by the cultivators. The Input Survey data was collected separately for area under Certified/ High Yielding Varieties (HYV), Hybrid and 'Others' categories of crops and use of fertilizers for different categories of holdings. Normally the first dose of fertilizers is given at the sowing stage and subsequently one or more applications are given to the crop. Thus the same area may receive one or more application of fertilizers but for the purpose of estimation of area fertilized, only net area under the crop in a particular season has been taken in to account.

The percentage number and area treated with one or more chemical fertilizers is shown in table 5.5.

Table 5.5
Percentage number & area of holdings growing one or more crops treated with chemical fertilizers

Irrigation status	Percentage number of holdings treated with one or more chemical fertilizer	Percentage area of holdings treated with one or more chemical fertilizer
Irrigated	17.53	52.90
Un-irrigated	13.41	28.81
Total	18.20	35.28

From the above table it is seen 18.2% of holdings applying chemical fertilizers in 35.28% of total area and fertilizers are used more in irrigated holdings than in un-irrigated holdings.

The size group wise number and area of holdings treated with chemical fertilizers according to irrigation status is given in tables 6.10 & 6.11 and the distribution of area under HYV, HYB & Other crops according to irrigation status is given in tables 6.12 & 6.13 of appendix 1.

It is seen that, the use of chemical fertilizers during 2016-17 increased in larger size groups. However, the tendency to use chemical fertilizers is declining compared to previous surveys. During 2016-17, 17.53% of holdings growing one or more irrigated crops treated with one or more chemical fertilizers contain 52.9% of area growing one or more irrigated crops. For un-irrigated holdings only 13.41% holdings treated with chemical fertilizers which cover 28.81% of area.

Also 86.6% of irrigated area cultivating High Yield Varieties (HYV) was treated with chemical fertilizers. In the case of Hybrid varieties (HYB), it was 69.74% and other varieties, it was 25.72%. For un-irrigated area, 57.88% of area cultivating HYV, 69.52% of HYB and 10.47 % of other varieties treated with chemical fertilizers.

District wise number and area of holdings treated with chemical fertilizers according to irrigation status is given in tables 7.8 & 7.9 of appendix 1.

The average consumption of NPK in irrigated area according to quality of fertilizers treated per hectare was 89.97, 34.27 and 59.96 Kg/MT respectively. Those of un-irrigated area were 34.46, 24.56 and 28.42 Kg/MT respectively.

The size class wise average consumption of NPK in irrigated and un-irrigated area is shown in tables 6.14 and 15 and the district wise distribution of average consumption is given in tables 7.10 & 11 of appendix 1.

5.7Application of straight fertilizers (irrigated and un-irrigated area)

The results of tables 6.16 and 6.17 of appendix 1 show that urea is the most commonly used fertilizer in irrigated holdings. i.e., 10.27% of holdings comprising of 39.56% of area were treated with urea. The second most commonly used fertilizer is potash. i.e., 7.68% of holdings with area 35.1% of holdings treated with potash. It is seen that ammonium phosphate is also used in irrigated areas.

The results of straight fertilizer used in un-irrigated area are shown in tables 6.18 & 19 of appendix 1. The straight fertilizer used more in un-irrigated area is Potash (8.33%) followed by urea (8.25%). The most commonly used fertilizer is urea (4.34%) followed by potash (4.01%) while considering number of holdings. The other fertilizers used in un-irrigated holdings are single super phosphate, rock phosphate, calcium ammonium nitrate & ammonium phosphate.

The district wise distribution of number and area of holdings treated with straight fertilizers according to irrigation status is shown in table 7.12 of appendix 1.

5.8Consumption of mixed fertilizers (irrigated &un-irrigated area)

The main fertilizers commonly used were 20:20:0 factomphos, NPK mixture Vijay, Urea Ammonium Phosphate and 10:26:26 NPK mixture. The percentage use of those in irrigated area were 11.89%, 3.48%, 9.68% & 4.41% respectively and the percentage use of those in un-irrigated area were 2.43%, 5.98%, 3.05% & 2.62% respectively. The size group wise distribution of the number and area used mixed fertilizers in irrigated and un-irrigated area is given in tables from 6.20 to 6.23 of appendix 1.

5.9 Crop wise consumption of chemical fertilizers (irrigated)

From table 6.24 of appendix 1, it is seen that, chemical fertilizers were applied in 94.67% of total paddy area. The application of chemical fertilizers for paddy in HYV was 96.67% while 42.15% of area under traditional varieties was treated with chemical fertilizers. The size group wise distribution is also included in table 6.25 of appendix 1. The average consumption of N, P & K under irrigated paddy were 140.06, 49.93 & 76.31 Kg/hectare respectively and is shown in table 6.26 of appendix 1.

The details of chemical fertilizers used in irrigated crops viz., tapioca, coconut, rubber and total food crops during 2016-17 is given in table 6.27 to 6.30 of appendix 1. The percentage area using chemical fertilizer of irrigated tapioca was 29.44%. Percentage irrigated area under coconut using chemical fertilizer was 25.72% while that of rubber was 53.33%.

Considering food crops under irrigated crops, the percentage number of holdings using chemical fertilizers was 15.69% which covers 63.61% of area. The estimated quantity of N, P, K nutrients being 176.87, 65.41 & 115.08 Kg/Ha respectively.

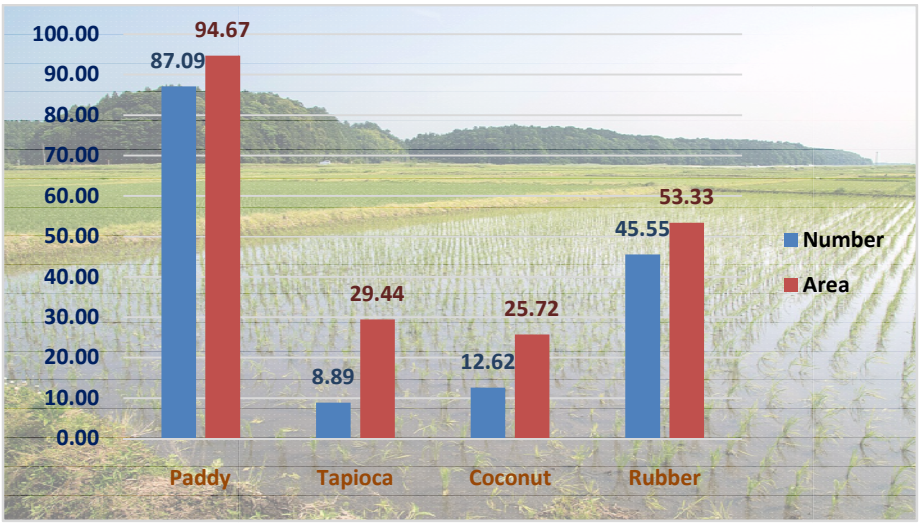
The consumption of chemical fertilizers in terms of NPK nutrients of irrigated crops is given in table 5.6 below and percentage number and area treated with chemical fertilizers of irrigated crops is given in graph 5.8.

Table 5.6
Crop wise consumption of chemical fertilizers in terms of NPK nutrients (irrigated crops)

Sl. No.	Crops	Average consumption (Kg/Ha)		
		N	P	K
1	All crops	170.10	64.78	113.35
2	Paddy	140.06	49.93	76.31
3	Coconut	131.76	60.56	105.45
4	Arecanut	149.81	111.10	157.80
5	Rubber	31.95	43.07	25.08

Graph 5.8

Percentage number & area treated with chemical fertilizers of major crops in irrigated area



5.10 Crop wise consumption of chemical fertilizers (un-irrigated)

While considering un-irrigated area during 2016-17, 56.13% of paddy area was treated with chemical fertilizers. For HYV of paddy in un-irrigated area 70% of area was used with chemical fertilizers whereas for other varieties it was only 9.69%. Average use of N, P & K for paddy in un-irrigated area was 124.68, 34.86 & 61.70 Kg/hectare. The details of chemical fertilizers used under un-irrigated paddy area are given in tables 6.31 to 6.33 of appendix 1.

19.74% of area under tapioca in un-irrigated area was treated with chemical fertilizers and 13.44% of area under coconut was also treated with chemical fertilizers. Among un-irrigated crops, chemical fertilizers were most widely used under rubber (56.22%). The area under food crops used chemical fertilizers was 16.32%. The size group wise details of chemical fertilizers used for tapioca, coconut, rubber and food crops is given in tables from 6.34 to 6.37 of appendix 1.

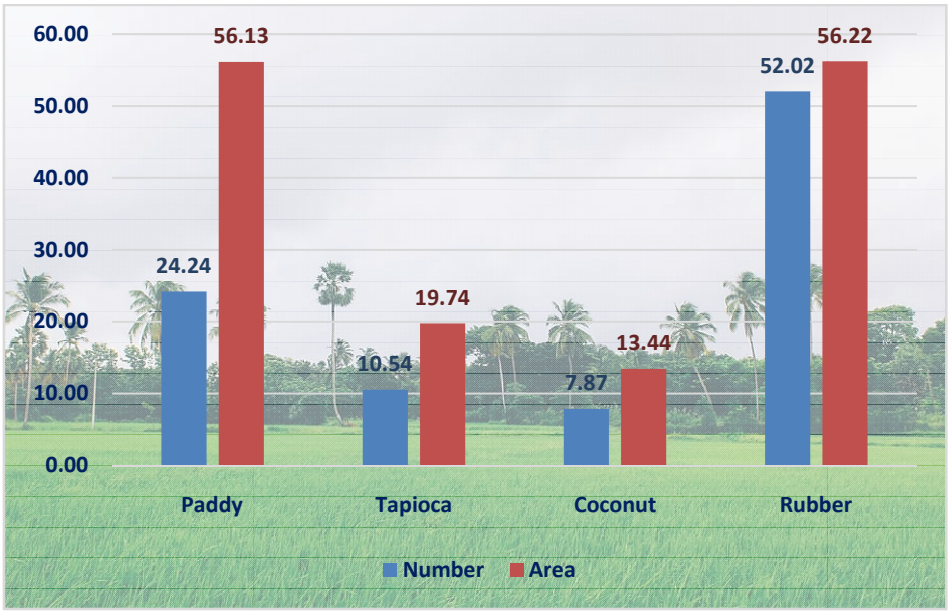
The consumption of chemical fertilizers in terms of NPK nutrients for un-irrigated crops is given in table 5.7 below and the percentage number and area under un-irrigated crops treated with chemical fertilizers given in graph 5.9.

Table 5.6

Crop wise consumption of chemical fertilizers in terms of NPK nutrients (un-irrigated crops)

Sl. No.	Crops	Average consumption (Kg/Ha)		
		N	P	K
1	All crops	119.63	85.27	98.66
2	Paddy	124.68	34.86	61.70
3	Coconut	170.49	70.95	129.47
4	Arecanut	443.46	135.09	283.82
5	Rubber	100.00	99.11	94.76

Graph 5.9
Percentage un-irrigated number & area treated with chemical fertilizers



The district wise use of chemical fertilizers of important crops according to irrigation status is given in table 7.13 of appendix1.

5.11 Organic manure in irrigated and un-irrigated areas

From table 5.7 it is seen that during 2016-17, the most widely used organic manure was farm yard manure (FYM)/ compost/ biogas manure in both irrigated and un-irrigated area. It was used in 36.64% of irrigated area and in 19.65% of un-irrigated area. The number and area of irrigated crops used organic manure is shown in table 6.38 and that of un-irrigated crops is shown in table 6.41 of appendix 1.

Table 5.7
Percentage area benefited by organic manure

Name of organic manure	Percentage irrigated area benefited by the manure	Percentage un-irrigated area benefited by the manure
FYM/ Compost/ Biogas manure	36.64	19.65
Oil cake	6.1	1.35
Other organic manure	15.85	6.78
Green manure	10.13	3.72

The area used organic manure under irrigated and un-irrigated crops such as paddy, tapioca, coconut & rubber during 2016-17 is given in tables 6.39 & 6.42 of appendix 1. The percentage area used FYM and other organic manure in of HYV of irrigated paddy was18.26% and 6.72% respectively and that of other vrieties of paddy was 59.12%& 24.01% respectively. Considering area under irrigated coconut, FYM was used in 40.21% of HYV area, 34.65% of HYB area and 53.31% of area under other varieties and other organic manurewas used in 16.41% of HYV, 4.86% of HYB & 25.98% of other varieties.

Under unirrigated area of paddy, 30.91% of HYV and 23.61% of other varieties used FYM and 3.87% of HYV and 7.21% other varieties used other organic manure. The area treated with FYM under HYV tapioca was 31.89% and that of HYV coconut was 31.53%.

The size group wise distribution of organic manure used under irrigated and un-irrigated crops during 2016-17 is given in tables 6.40 & 6.43and its district wise disrtribution is given in tables 7.14 & 7.15 of appendix 1.

5.12Agriculture machinery & implements

In Input Survey 2016-17, information relating to usage of various agricultural implements/machinery was collected. A consolidated statement on percentage use of important machineries (owned & used; and hired) during 2016-17 is given in table5.8and 5.9.

Table 5.8
Percentage of operational holdings using agricultural implements/machinery (Owned & used)

Sl. No.	Size Group	Hand operated sprayer/ duster	Hand hoe	Power sprayer	Power tillers	Agriculture Tractor	Brush cutter	Diesel engine pump set	Electric pump set	Sprinkler irrigation set	Drip irrigation set
1	Marginal	1.00	44.52	0.46	0.06	0.07	0.31	0.14	15.53	0.37	0.08
2	Small	6.05	54.78	6.49	0.59	0.79	4.03	1.81	33.27	3.09	0.55
3	Semi-medium	8.95	59.42	8.41	0.78	1.59	8.20	3.15	37.19	5.15	2.00
4	Medium	13.03	65.20	14.43	1.52	3.16	13.71	5.26	44.21	8.90	3.85
5	Large	9.29	72.32	25.09	4.73	9.29	16.70	13.57	42.68	11.43	3.66
All size groups		1.19	44.90	0.68	0.08	0.11	0.47	0.21	16.14	0.48	0.11

As per table 5.8 giving information on machinery owned & used, it was found that holdings owning and using different kinds of agriculture implements/machinery were hand hoe (44.9%), electric pump set (16.14%), hand operaed sprayer/ duster (1.19%), Power sprayer (0.68%), sprinkler irrigation (0.48%), brush cutter (0.47%), diesel engine pump set (0.21%), Agriculture tractor (0.11%), drip irrigation set (0.11%) & power tiller (0.08%). The proportion of holdings using machines is highest in larger holdings.

Table 5.9
Percentage of operational holdings using agricultural implements/machinery (Hired)

Sl. No.	Size Group	Hand operated sprayer/ duster	Hand hoe	Power sprayer	Power tillers	Agriculture Tractor	Brush cutter	Diesel engine pump set	Electric pump set
1	Marginal	0.29	1.01	0.47	0.40	1.22	1.51	0.10	0.22
2	Small	2.03	1.70	5.51	3.83	13.26	9.36	1.00	1.88
3	Semi- medium	1.97	1.39	7.38	5.64	17.14	11.85	1.26	2.68
4	Medium	1.87	1.21	9.18	7.71	20.22	12.18	2.18	3.87
5	Large	4.11	1.52	12.41	8.48	22.50	7.50	0.00	2.86
All size groups		0.35	1.03	0.65	0.53	1.64	1.78	0.13	0.28

As per table 5.9, the operational holders those who hired various agricultural machinery for cultivation in their holdings were brush cutter (1.78%), agriculture tractor (1.64%), hand hoe (1.03%), power sprayer (0.65%), power tiller (0.53%), hand operated sprayer/ duster (0.35%), electric pump set (0.28%) & diesel engine pump set (0.13%).

The estimated number of machinery/ implements used (owned & used; and hired) are given in tables 6.44 & 6.45 and district wise number of machinery/ implements (owned & used) is given in table 7.16 of appendix 1.

5.13Institutional credit

In Input Survey, data was collected on institutional credit taken by operational holders for agricultural purposes during agriculture year 2016-17. The institutional credit was categorized into short-term, medium-term and long-term in the schedule. The percentage of operational holders availing institutional credit for agricultural purposes from various institutions was 4.94 with 3.85 for marginal, 33.11 for small, 48.19 for semi-medium, 68.56 for medium and 44.20 for large holdings and is given in table 5.10.

Table 5.10
Percentage of estimated number of operational holders availing institutional credit under different size groups

Sl. No.	Size Group	Percentage of operational holdings availing institutional credit	Percentage of operational holdings availing credit from			
			PACS	PLDB/ SLDB	RRBB	CBB
1	Marginal	3.85	1.50	0.99	0.35	1.06
2	Small	33.11	22.15	1.53	3.83	9.29
3	Semi- medium	48.19	34.10	2.17	4.54	13.85
4	Medium	68.56	56.94	7.69	5.02	18.80
5	Large	44.20	26.25	3.30	12.50	21.88
	All size groups	4.94	2.30	1.02	0.47	1.37

The percentage of operational holdings availing agricultural credit from different sources, viz; Primary Agricultural Credit Societies (PACS), Primary Land Development Banks (PLDB), Commercial Banks (CBB) and Regional Rural Bank Branch (RRBB) was 2.30, 1.02, 0.47 & 1.37 respectively. The district wise details are given in table 7.17 of appendix 1.

It is clarified that there were some operational holders who took institutional credit from more than one source and hence there was an overlapping in number of operational holdings availing credit through above mentioned sources. The above distribution shows that Primary Agricultural Credit Societies (2.30%) were the main source of credit for operational holders followed by Commercial Banks branches (1.37%).

From table 5.11, it may be seen that percentage of short-term, medium-term, and long-term loans taken by operational holders was 30.23, 66.51 and 3.26 respectively.

Table 5.11
Percentage distribution of short-term, medium-term and long-term loans to corresponding total loan in each size group

Sl. No.	Size Group	Short term	Medium term	Long term
1	Marginal	31.57	65.54	2.89
2	Small	27.65	70.29	2.06
3	Semi- medium	31.41	63.99	4.60
4	Medium	17.86	71.94	10.20
5	Large	61.09	35.85	3.06
	All size groups	30.23	66.51	3.26

In Input Survey 2016-17, disbursement of short-term loan was collected under three components, viz., loan used for purchasing fertilizer, loan utilized for other inputs and amount of loan taken in cash from financial institutions. It was observed that the highest share of short-term loan was received in form of cash which constituted 96.8% against 1.53% for purchasing fertilizer and only 1.66% for 'other inputs' (table 5.12).

Table 5.12
Percentage distribution of short-term loan according to uses

Sl. No.	Size Group	Loan amount utilized for the purchase of		Loan amount received in cash
		Fertilizer	Other inputs	
1	Marginal	1.41	1.08	97.51
2	Small	1.55	2.49	95.96
3	Semi- medium	1.98	3.39	94.63
4	Medium	2.86	3.08	94.06
5	Large	0.77	0.85	98.38
All size groups		1.54	1.66	96.80

The distribution of amount of agriculture credit per holder is given in table 6.47 of appendix 1.

5.14 Seeds

The estimated number of operational holdings who used improved quality seeds for agriculture purpose is given in table 5.13 below.

Table 5.13
Estimated number of operational holdings using improved quality of seeds for agricultural purpose

Sl. No.	Size Group	Total no. of operational holdings	No. of holdings using certified seeds	No. of holdings using hybrid seeds	No. of holdings took foundation prog.
1	Marginal	7279288	44831	155075	0
2	Small	176145	7389	16718	128
3	Semi- medium	53323	2898	5933	132
4	Medium	10144	800	1289	7
5	Large	1120	125	111	18
	All size groups	7520020	56043	179126	285

During 2016-17, only 0.75% of holdings used certified/ HYV seeds and 2.38% of holdings were used hybrid seeds and only 0.004% holdings carried out foundation programme of seeds. District wise details of holdings using improved quality of seeds is shown in table 7.18 of appendix 1.

The source wise number of holdings purchased certified seeds is given in table 6.48 of appendix 1. It was also found that Agriculture Departments of State Governments were the largest source from where farmers purchased certified seeds. 53.16% of holdings depend on Agriculture Department. The second largest dealer was private seed dealers (38.71%).

5.15 Pest control measures (Integrated Pest Management) and Soil test

Traditionally, there have been a number of practices adopted by farmers as plant protection measures. For the first time, data on practices usually followed by operational holder for protection of his crops against insects and pests was collected in Input Survey 2001-02 under Integrated Pest Management (IPM), keeping in view crop variety and agro-climatic conditions. The data in Input Survey 2016-17 was collected under following types of pest control measures:

- Agronomic and Cultural Practices
- Mechanical Control
- Biological Control
- Chemical Control
- Others
- No Efforts

The percentage distribution of operational holdings in each size groups of holdings by various methods of pest control is given in table 5.14.

Table 5.14
Percentage distribution of operational holdings in various size groups of holdings by usual methods of pest control

Sl. No.	Size Group	Percentage of holdings which						
		adopted pest control methods	Agronomic & cultural practices	Mechanical control	Biological methods	Chemical methods	Others (none of col. 4 to 7)	No efforts/ practices
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Marginal	24.25	9.29	1.10	1.23	2.34	11.42	75.75
2	Small	55.02	9.81	3.40	3.19	20.71	24.08	44.98
3	Semi- medium	62.67	9.87	4.26	3.29	26.74	26.63	37.33
4	Medium	65.32	11.02	6.99	4.85	31.33	24.80	34.68
5	Large	78.04	17.05	15.09	6.07	40.54	25.80	21.96
	All size groups	25.30	9.31	1.18	1.30	2.99	11.84	74.70

It is clarified that one operational holder may follow more than one practices to protect his crop(s) from insects or pests. 'Others' indicate that practices which do not fall either in col. 4 to 7. From the table, it is observed that only 25.3% holdings adopted pest control methods. Most of the holdings follow 'others' (11.84%) following agronomic & cultural practices (9.31%), chemical methods (2.99%), biological methods (1.3%) and mechanical control (1.18%). Even though, 74.7% of holdings couldn't take any effort/ practices for pest control. The district wise percentage distribution of operational holdings by usual methods of pest control is given in table 7.19 of appendix 1.

The percentage distribution of number of operational holders who adopted pest control practices for plant protection by major size groups of holdings may be seen in table 6.49 of appendix 1. It is seen that marginal holdings had highest share in all methods of pest control. The percentage area under paddy treated with pesticides during 2016-17 is given in table 6.50 of appendix 1.

For the first time, during Input Survey 2016-17, information on soil test carried out on the operational holdings, was collected. The size group-wise percentage distribution of operational holders which reported soil testing is presented in the following table 5.15. Among the 75,20,020 estimated operational holders for Input Survey 2016-17, only 0.05% have reported conduct of soil testing during the last five years including year of reference, 2016-17.

Table 5.15
Size-group wise estimated number & percentage of operational holdings performed soil testing

Sl. No.	Size Group	Total no. of operational holdings	No. of holdings reported soil testing in last 5 yrs.	% of holding reported soil testing
1	Marginal	7279288	3772	0.05
2	Small	176145	19	0.01
3	Semi- medium	53323	10	0.02
4	Medium	10144	0	0.00
5	Large	1120	0	0.00
	All size groups	7520020	3801	0.05

5.16 Educational qualification of operational holder

In Input Survey 2016-17, data was collected relating to educational qualification of selected operational holders and an estimate was generated. The information was collected on different educational levels, like illiterate, up to primary level, middle, secondary, senior secondary, technical diploma below degree level and graduates and above. The percentage distribution of operational holdings in each size groups by educational status may be seen in table 5.16.

Out of the 7520020 operational holdings, 1.92% were illiterate, 15.88% studies up to class V, 21.44% up to middle class, 39.18% up to secondary class, 11.94% up to senior

secondary, 3.46% technical diploma before degree level and 6.19% had graduate & above degree.

Table 5.16
Percentage distribution of operational holders in each size group by educational status

Sl. No.	Size Group	Illiterate	Up to Class V	Middle	Secondary	Senior Secondary	Technical Diploma below degree level	Graduate &above
1	Marginal	1.94	16.06	21.54	39.23	11.84	3.42	5.98
2	Small	1.17	10.99	19.01	37.89	14.83	4.53	11.58
3	Semi- medium	1.10	10.07	17.23	37.16	14.80	5.45	14.18
4	Medium	0.92	8.46	13.71	33.17	17.39	5.15	21.20
5	Large	0.00	5.71	9.73	36.96	15.45	3.75	28.39
	All size groups	1.92	15.88	21.44	39.18	11.94	3.46	6.19

The district wise percentage distribution of operational holdings in each size groups by educational status may be seen in table 7.20 of appendix 1.

5.17Average age of operational holder

In Input Survey 2016-17, information relating to age of sampled operational holders (in completed years) was collected. Based on the estimated figure, the percentage distribution of number of operational holders into pre-defined age-groups may be seen in table 5.17 and its district wise distribution in table 7.21 of appendix 1.

Table 5.17
Percentage distribution of number of operational holders into different age group

Sl. No.	Size Group	Percentage of operational holders in age groups						Average age (yrs)
		up to 30 yrs	31 - 40 yrs	41 - 50 yrs	51 - 60 yrs	61 - 65 yrs	66 yrs& above	
1	Marginal	0.64	13.03	30.30	32.77	12.14	11.12	52.19
2	Small	0.21	3.72	20.86	34.35	17.43	23.43	57.31
3	Semi- medium	0.36	3.46	19.99	33.05	18.16	24.97	57.68
4	Medium	0.19	3.13	17.51	35.24	17.26	26.68	58.23
5	Large	0.00	4.46	20.00	32.05	21.96	21.52	57.37
	All size groups	0.63	12.73	29.99	32.81	12.31	11.53	52.35

The average age of an operational holder was estimated at 52.35 years while maximum number of operational holders (32.81%) belonged to the age group 51 – 60 years followed by 41 – 50 years (29.99%), 31 – 40 years (12.73%), lowest being in age group – up to 30 years (0.63%). Also, 12.31% of operational holders were in the age group of 61 – 65 years followed by 11.53% in the age group of 66 years and more.

5.18 Family size of household of operational holder

The percentage distribution of number of operational holders in each size-group of holdings according to different family size of households is given in Table 5.18. The average size of household of an operational holder was estimated at 4.26. Also, 62.4% of operational holders had their family size between 4 to 6 followed by size of households up to 3 (31.72%), 7 to 9 (4.82%) etc., the lowest being 0.002% in the household size of 16 to 19 and no holders in the group 20 & above.

Table 5.18
Percentage distribution of number of operational holders by family size of households

Sl. No.	Size Group	Percentage of operational holders with family size in the family size category							Average size (no.)
		up to 3	4 to 6	7 to 9	10 to 12	13 to 15	16 to 19	20 & above	
1	Marginal	31.90	62.41	4.67	0.88	0.13	0.00	0.00	4.25
2	Small	26.77	62.15	8.67	1.79	0.55	0.07	0.00	4.62
3	Semi- medium	25.06	62.15	10.60	1.73	0.39	0.08	0.00	4.71
4	Medium	25.63	61.46	10.24	2.17	0.42	0.07	0.00	4.71
5	Large	22.05	57.77	15.09	2.95	2.14	0.00	0.00	5.16
	All size groups	31.72	62.40	4.82	0.91	0.15	0.002	0.00	4.26

•••••

Appendix 1

Statistical Tables

List of Statistical Tables

Table 6.1
Average number of parcels per holding and average area per parcel

Sl. No.	Size Group	Average no. of parcels per holding						Average area per parcel (in Ha)					
		1991-92	1996-97	2001-02	2006-07	2011-12	2016-17	1991-92	1996-97	2001-02	2006-07	2011-12	2016-17
1	Marginal	1.88	1.57	1.07	1.15	1.12	1.23	0.11	0.13	0.15	0.13	0.13	0.10
2	Small	2.88	3.49	2.04	2.09	1.86	2.07	0.48	0.39	0.65	0.64	0.73	0.65
3	Semi- medium	3.29	3.77	4.10	2.42	2.04	2.44	0.79	0.68	0.62	1.05	1.27	1.04
4	Medium	3.89	4.72	8.19	2.66	2.24	2.60	1.36	1.12	0.65	1.96	2.32	2.03
5	Large	4.39	3.98	10.40	2.02	2.71	3.08	5.20	4.79	1.67	7.75	6.86	5.44
	All size groups	1.98	1.72	1.16	1.20	1.15	1.26	0.18	0.19	0.21	0.18	0.18	0.14

Table 6.2
Distribution of area according to size groups (Ha)

Sl. No.	Size Group	Gross cropped area				Current fallow land		Other uncultivated land	
		Irrigated		Un-irrigated					
		2011-12	2016-17	2011-12	2016-17	2011-12	2016-17	2011-12	2016-17
1	Marginal	199558	194134	674009	600303	7089	6487	166715	170686
2	Small	61108	69682	198005	174928	2208	2687	18768	14937
3	Semi- medium	41612	44989	117934	98317	1394	1346	9559	6277
4	Medium	19386	19791	44569	36814	713	474	4122	2352
5	Large	5425	9263	19702	9594	136	158	886	520
	All size groups	327089	337859	1054219	919956	11540	11152	200050	194772

Table 6.3
Percentage gross cropped area by irrigation status

Sl. No.	Size Group	Irrigated	Un-irrigated	Total
1	Marginal	24.44	75.56	100.00
2	Small	28.49	71.51	100.00
3	Semi- medium	31.39	68.61	100.00
4	Medium	34.96	65.04	100.00
5	Large	49.12	50.88	100.00
All sizes 2016-17		26.86	73.14	100.00
All sizes 2011-12		23.68	76.32	100.00
All sizes 2006-07		23.42	76.58	100.00
All sizes 2001-02		23.23	76.77	100.00

Table 6.4
Percentage of area cropped once & more than once by irrigation status

Sl. No.	Size Group	Irrigated area				Un-irrigated area		
		Cropped once	Cropped twice	Cropped more than twice	Total	Cropped once	Cropped more than once	Total
1	Marginal	90.53	8.72	0.75	100.00	93.07	6.93	100.00
2	Small	82.85	16.67	0.48	100.00	91.06	8.94	100.00
3	Semi- medium	79.09	20.60	0.31	100.00	92.27	7.73	100.00
4	Medium	80.02	19.63	0.35	100.00	93.43	6.57	100.00
5	Large	93.73	6.20	0.07	100.00	97.99	2.01	100.00
All sizes 2016-17		86.90	12.50	0.60	100.00	92.69	7.31	100.00
All sizes 2011-12		81.80	17.70	0.50	100.00	83.86	16.14	100.00
All sizes 2006-07		84.00	15.69	0.31	100.00	99.12	0.88	100.00
All sizes 2001-02		77.81	21.39	0.80	100.00	96.82	3.18	100.00

Table 6.5
Average gross cropped area per operational holdings (Ha)

Sl. No.	Size Group	Irrigated area			Un-irrigated area		Total			
		Cropped once	Cropped twice	Cropped more than twice	Cropped once	Cropped more than once	2016-17	2011-12	2006-07	2001-02
1	Marginal	0.02	0.002	0.0002	0.07	0.01	0.10	0.11	0.12	0.14
2	Small	0.31	0.063	0.002	0.79	0.08	1.24	1.24	1.21	1.31
3	Semi- medium	0.63	0.165	0.002	1.47	0.12	2.39	2.39	2.33	2.57
4	Medium	1.46	0.359	0.006	2.97	0.21	5.00	4.77	4.80	5.47
5	Large	7.53	0.498	0.005	7.97	0.16	16.16	17.77	14.61	17.7
	All size groups	0.04	0.01	0.0003	0.10	0.01	0.15	0.18	0.19	0.22

Table 6.6
Percentage distribution of area under paddy to gross cropped area and area under HYV of paddy to total area under paddy on irrigation status

Sl. No.	Holding size class	Irrigated		Un-irrigated	
		% area under paddy to gross cropped area	% area under HYV to total paddy area	% area under paddy to gross cropped area	% area under HYV to total paddy area
1	Marginal	19.85	95.85	3.93	68.04
2	Small	42.06	95.53	8.84	79.88
3	Semi- medium	48.66	96.43	9.92	88.57
4	Medium	55.49	98.74	10.05	90.21
5	Large	43.03	99.87	3.58	91.25
All sizes 2016-17		30.99	96.34	5.74	77.00
All sizes 2011-12		32.60	94.32	4.21	86.57
All sizes 2006-07		7.27	92.67	4.93	80.60
All sizes 2001-02		17.50	84.29	4.92	63.61

Table 6.7
Percentage distribution of area under different crops (gross cropped area)

Sl. No.	Crop	Percentage of total gross cropped area			
		2001-02	2006-07	2011-12	2016-17
1	Paddy	7.85	5.48	10.93	12.52
2	Tapioca	2.81	2.36	1.62	1.40
3	Coconut	33.91	28.06	27.27	24.27
4	Arecanut	1.11	4.76	4.59	3.69
5	Cashew	2.53	2.81	1.53	1.08
6	Coffee	0.23	2.68	2.26	3.23
7	Cardamom	2.09	1.25	2.36	1.99
8	Rubber	19.61	24.70	29.63	25.41
	Total	70.14	72.10	80.19	73.59

Table 6.8
Crop wise percentage distribution of irrigated area

Sl. No.	Size Group	Paddy	Coconut	Arecanut	Tapioca	Rubber	Pepper	Coffee	Cashew	Other crops	All crops
1	Marginal	19.85	35.38	5.85	1.56	0.24	1.53	0.14	0.06	35.40	100.00
2	Small	42.06	19.31	6.46	0.98	0.34	0.73	0.22	0.02	29.88	100.00
3	Semi- medium	48.66	15.79	6.98	0.74	0.29	0.63	0.75	0.02	26.14	100.00
4	Medium	55.49	13.53	6.24	0.83	0.31	0.41	1.06	0.01	22.12	100.00
5	Large	43.03	8.15	2.15	1.01	0.00	0.45	4.43	0.00	40.78	100.00
All size groups (2016-17)		30.99	27.43	6.05	1.27	0.26	1.15	0.41	0.04	32.40	100.00
All size groups (2011-12)		32.60	29.82	6.18	1.64	0.75	0.65	0.94	0.04	27.38	100.00
All size groups (2006-07)		7.27	34.36	8.38	1.70	0.47	1.03	0.72	0.08	45.99	100.00
All size groups (2001-02)		17.50	31.97	1.59	1.10	0.38	0.01	0.70	0.01	46.74	100.00

Table 6.9
Crop wise percentage distribution of un-irrigated area

Sl. No.	Size Group	Paddy	Coconut	Arecanut	Tapioca	Rubber	Tea	Coffee	Cashew	Pepper	Cardamom	Other crops	All crops
1	Marginal	3.93	28.35	3.06	1.72	28.51	0.14	3.72	1.36	3.42	0.70	25.08	100.00
2	Small	8.84	15.51	2.50	1.20	42.00	0.21	5.29	1.49	3.68	0.51	18.77	100.00
3	Semi- medium	9.92	11.40	2.16	0.71	49.88	0.45	4.87	1.77	3.25	0.37	15.23	100.00
4	Medium	10.05	9.12	2.44	0.62	52.52	0.48	5.06	1.92	2.75	0.64	14.40	100.00
5	Large	3.58	7.05	2.53	0.31	59.47	2.00	9.91	1.70	2.39	0.61	10.44	100.00
All size groups (2016-17)		5.74	23.11	2.83	1.45	34.64	0.22	4.26	1.46	3.42	0.63	22.25	100.00
All size groups (2011-12)		4.21	26.48	4.09	1.61	38.58	0.24	2.67	2.00	2.63	1.43	16.06	100.00
All size groups (2006-07)		4.93	26.30	3.65	2.56	32.11	0.19	3.27	3.65	4.32	0.78	18.24	100.00
All size groups (2001-02)		4.92	34.50	0.97	3.33	25.43	0.00	3.08	0.30	0.07	0.00	27.40	100.00

Table 6.10
Number & area of irrigated holdings treated with chemical fertilizers

Sl. No.	Size Group	No. of holdings growing one or more irrigated crops			Area of holdings growing one or more irrigated crops (Ha)		
		Total	No. treated with one or more chem. fertilizer	Percentage	Total	Area treated with one or more chem. fertilizer	Percentage
1	Marginal	3979003	624750	15.70	194134	76829	39.58
2	Small	140491	74237	52.84	69682	45596	65.43
3	Semi- medium	44490	26150	58.78	44989	32438	72.10
4	Medium	8675	5640	65.01	19791	15671	79.18
5	Large	985	709	71.98	9263	8179	88.30
All size groups (2016-17)		4173644	731486	17.53	337859	178713	52.90
All size groups (2011-12)		3252471	982327	30.20	327088	209136	63.94
All size groups (2006-07)		2223778	765145	34.41	313332	197375	62.99
All size groups (2001-02)		1419003	755047	53.21	340756	214385	62.91

Table 6.11
Number & area of un-irrigated holdings treated with chemical fertilizers

Sl. No.	Size Group	No. of holdings growing one or more crops			Area of holdings growing one or more crops (Ha)		
		Total	No. treated with one or more chem. fertilizer	Percentage	Total	Area treated with one or more chem. fertilizer	Percentage
1	Marginal	6375156	776375	12.18	600303	135364	22.55
2	Small	172704	76399	44.24	174928	63985	36.58
3	Semi- medium	52398	27463	52.41	98317	42725	43.46
4	Medium	9990	5789	57.95	36814	17311	47.02
5	Large	1075	647	60.19	9594	5632	58.70
	All size groups	6611323	886673	13.41	919956	265017	28.81

Table 6.12
Distribution of irrigated area under HYV, HYB and Other crops treated with chemical fertilizer (Ha)

Sl. No.	Size Group	HYV			HYB			Others		
		Total	Area treated with one or more chem. fertilizer	Percentage	Total	Area treated with one or more chem. fertilizer	Percentage	Total	Area treated with one or more chem. fertilizer	Percentage
1	Marginal	59228	48178	81.34	3219	2196	68.22	131687	26455	20.09
2	Small	38017	33259	87.48	1961	1197	61.04	29704	11140	37.50
3	Semi- medium	27579	25053	90.84	1098	845	76.96	16312	6540	40.09
4	Medium	13649	12801	93.79	340	180	52.94	5802	2689	46.35
5	Large	7085	6765	95.48	655	654	99.85	1523	760	49.90
All size groups (2016-17)		145558	126056	86.60	7273	5072	69.74	185028	47584	25.72
All size groups (2011-12)		126952	115392	90.89				200136	93744	46.84
All size groups (2006-07)		107990	102698	95.10				205342	94677	46.11
All size groups (2001-02)		121511	107126	88.16				219245	107256	48.92

Table 6.13
Distribution of un-irrigated area under HYV, HYB and Other crops treated with chemical fertilizer (Ha)

Sl. No.	Size Group	HYV			HYB			Others		
		Total	Area treated with one or more chem. fertilizer	Percentage	Total	Area treated with one or more chem. fertilizer	Percentage	Total	Area treated with one or more chem. fertilizer	Percentage
1	Marginal	146528	76424	52.16	34538	24841	71.92	419237	34099	8.13
2	Small	63712	38743	60.81	15249	10244	67.18	95967	14998	15.63
3	Semi- medium	41705	28223	67.67	10308	6640	64.42	46304	7862	16.98
4	Medium	16633	11213	67.41	4717	3162	67.03	15464	2936	18.99
5	Large	5347	3939	73.67	923	809	87.65	3324	883	26.56
	All size groups	273925	158542	57.88	65735	45696	69.52	580296	60778	10.47

Table 6.14
Average consumption of chemical fertilizers in terms of nutrients in irrigated area (Kg/MT)

Sl. No.	Size Group	HYV			HYB			Others			Total		
		N	P	K	N	P	K	N	P	K	N	P	K
1	Marginal	116.18	39.55	71.16	262.90	20.41	6.54	42.85	16.42	32.05	68.87	23.54	43.56
2	Small	117.72	46.79	83.57	370.70	6.14	21.45	76.41	29.66	63.03	107.23	38.34	73.07
3	Semi- medium	124.69	50.76	79.40	254.07	16.42	31.68	87.80	31.89	71.68	114.47	43.08	75.44
4	Medium	203.26	119.53	145.14	127.03	11.24	14.82	90.20	30.67	61.90	168.80	91.62	118.50
5	Large	123.59	63.32	100.94	66.67	63.31	116.82	95.65	61.23	117.72	114.97	62.98	104.82
All size groups (2016-17)		126.72	52.22	84.35	266.61	19.40	24.67	54.12	20.72	42.16	89.97	34.27	59.96
All size groups (2011-12)		75.20	37.11	27.43				63.55	38.22	29.94	68.05	37.79	28.97
All size groups (2006-07)		17.59	50.49	20.05				21.87	27.07	25.63	25.63	20.34	35.14
All size groups (2001-02)		64.90	27.54	53.19				42.15	56.74	46.55	40.98	46.33	42.27

Table 6.15

Average consumption of chemical fertilizers in terms of nutrients in un-irrigated area (Kg/MT)

Sl. No.	Size Group	HYV			HYB			Others			Total		
		N	P	K	N	P	K	N	P	K	N	P	K
1	Marginal	53.74	48.79	50.01	50.87	56.22	56.00	15.35	7.71	11.32	26.76	20.53	23.33
2	Small	78.23	52.51	61.36	46.02	47.82	39.84	23.21	10.41	17.01	45.24	29.01	35.16
3	Semi- medium	84.83	58.24	67.90	43.87	42.22	30.36	23.89	11.97	16.16	51.84	34.77	39.60
4	Medium	89.49	58.31	69.93	60.23	47.83	37.65	27.14	14.24	22.70	59.55	38.45	45.95
5	Large	56.46	45.83	54.58	66.01	61.26	34.32	21.68	19.83	24.55	45.33	38.30	42.23
All size groups (2016-17)		66.39	51.62	56.67	49.53	51.54	46.61	17.68	8.74	13.03	34.46	24.56	28.42
All size groups (2011-12)		46.76	41.78	27.05				12.81	9.14	6.95	24.17	20.07	13.68

Table 6.16

Distribution of holdings under irrigated crops treated with straight fertilizers

Sl. No.	Size Group	Number of holdings				
		Growing one or more irrigated crops	Treated with Urea	Treated with Super Phosphate (single) (N-0,P-16,K-0)	Treated with Murate of Potash	Treated with Di-Ammonium Phosphate
1	Marginal	3979003	353718	27434	256421	13534
2	Small	140491	50828	3683	42854	3163
3	Semi- medium	44490	19248	1327	16964	1464
4	Medium	8675	4154	304	3772	508
5	Large	985	575	42	517	138
All size groups (2016-17)		4173644	428523	32790	320528	18807
All size groups (2011-12)		3252471	522756	52782	473056	40931
All size groups (2006-07)		2223778	401074	5921	367956	25143
All size groups (2001-02)		1419003	513475	20570	469761	14241

Table 6.17
Distribution of area under irrigated crops treated with straight fertilizers

Sl. No.	Size Group	Area of holdings (Ha)				
		Area under all crops	Treated with Urea	Treated with Super Phosphate (single)	Treated with Murate of Potash	Treated with Di-Ammonium Phosphate
1	Marginal	194134	53865	2522	46441	2034
2	Small	69682	34726	1448	30342	3180
3	Semi- medium	44989	26416	1030	23936	3369
4	Medium	19791	12704	416	11858	3144
5	Large	9263	5949	178	6009	1698
All size groups (2016-17)		337859	133660	5594	118586	13425
All size groups (2011-12)		327088	141858	21893	138612	15061
All size groups (2006-07)		313332	127971	2114	122246	9683
All size groups (2001-02)		340756	214385	10787	145761	8164

Table 6.18
Distribution of holdings under un-irrigated crops treated with straight fertilizers

Sl. No.	Size Group	Number of holdings growing one or more crops	Number of holdings					
			Treated with Urea (46:0:0)	Treated with Calcium Ammonium Nitrate (25:0:0)	Treated with Single Super Phosphate (0:16:0)	Treated with Murate of Potash (0:0:60)	Treated with Di-Ammonium Phosphate (18:46:0)	Treated with Rock Phosphate (0:18:0)
1	Marginal	6375156	243427	21007	34282	222692	12965	12961
2	Small	172704	30384	830	3823	28955	1378	2491
3	Semi- medium	52398	10298	489	1477	10776	643	1015
4	Medium	9990	2430	28	307	2513	221	189
5	Large	1075	259	10	64	263	102	18
All size groups (2016-17)		6611323	286798	22364	39953	265199	15309	16674
All size groups (2011-12)		6138601	464048	13930	55860	482605	19678	12594

Table 6.19

Distribution of area under un-irrigated crops treated with straight fertilizers

Sl. No.	Size Group	Area of holdings (Ha)						
		Area under all crops	Treated with Urea (46:0:0)	Treated with Calcium Ammonium Nitrate (25:0:0)	Treated with Single Super Phosphate (0:16:0)	Treated with Murate of Potash (0:0:60)	Treated with Di-Ammonium Phosphate (18:46:0)	Treated with Rock Phosphate (0:18:0)
1	Marginal	600303	33082	2331	4746	33790	1369	1681
2	Small	174928	21457	354	2327	21010	681	1767
3	Semi- medium	98317	14145	315	1358	14035	406	1607
4	Medium	36814	6040	23	693	6427	104	715
5	Large	9594	1215	58	219	1354	150	290
All size groups (2016-17)		919956	75939	3081	9343	76616	2710	6060
All size groups (2011-12)		1054218	106874	1796	12659	124464	7951	4475

Table 6.20

Distribution of holdings under irrigated crops treated with important complex / mixed fertilizers

Sl. No.	Size Group	Number of holdings					
		Growing one or more irrigated crops	NPK mixture (Vijay) 17:17:17	Ammonium Phosphorous Sulphate (Factomphos) 20:20:0	Urea Ammonium Phosphate 20:20:0	NPK Mixture 10:26:26	Mono Ammonium Phosphate 0:52:0
1	Marginal	3979003	72474	95707	57517	36724	7128
2	Small	140491	8831	11000	10052	5752	399
3	Semi- medium	44490	3028	4003	4230	1885	29
4	Medium	8675	596	1022	838	375	17
5	Large	985	53	123	39	67	6
All size groups		4173644	84982	111855	72676	44803	7579

Table 6.21
Distribution of area under irrigated crops treated with important complex / mixed fertilizers

Sl. No.	Size Group	Area of holdings (Ha)					
		Under all crops	NPK mixture (Vijay) 17:17:17	Ammonium Phosphorous Sulphate (Factomphos) 20:20:0	Urea Ammonium Phosphate 20:20:0	NPK Mixture 10:26:26	Mono Ammonium Phosphate 0:52:0
1	Marginal	194134	4324	17744	13856	5193	415
2	Small	69682	3453	9532	8939	4516	208
3	Semi- medium	44989	2360	7143	6661	3102	0
4	Medium	19791	789	3552	2828	1194	23
5	Large	9263	822	2197	422	888	1
All size groups		337859	11748	40168	32706	14893	647

Table 6.22
Distribution of holdings under un-irrigated crops treated with important complex / mixed fertilizers

Sl. No.	Size Group	Number of holdings					
		Growing one or more irrigated crops	NPK mixture (Vijay) 17:17:17	Ammonium Phosphorous Sulphate (Factomphos) 20:20:0	Urea Ammonium Phosphate 20:20:0	NPK Mixture 10:26:26	Mono Ammonium Phosphate 0:52:0
1	Marginal	6375156	158551	50552	49678	60875	1074
2	Small	172704	15633	7895	8199	6173	33
3	Semi- medium	52398	5541	3096	3468	1626	26
4	Medium	9990	1035	814	686	421	14
5	Large	1075	109	61	59	73	0
All size groups		6611323	180869	62418	62090	69168	1147

Table 6.23
Distribution of area under un-irrigated crops treated with important complex / mixed fertilizers

Sl. No.	Size Group	Area of holdings (Ha)					
		Under all crops	NPK mixture (Vijay) 17:17:17	Ammonium Phosphorous Sulphate (Factomphos) 20:20:0	Urea Ammonium Phosphate 20:20:0	NPK Mixture 10:26:26	Mono Ammonium Phosphate 0:52:0
1	Marginal	600303	29006	8226	10534	14419	17
2	Small	174928	13283	6246	8430	5129	5
3	Semi- medium	98317	8358	4862	6202	2485	12
4	Medium	36814	3331	2330	2327	1351	11
5	Large	9594	991	678	599	756	0
All size groups		919956	54969	22342	28092	24140	45

Table 6.24
Distribution of holdings and area irrigated under Paddy treated with chemical fertilizers

Sl. No.	Size Group	No. of holdings growing the crop			Area under the crop (Ha)		
		Total	Treated with chemical fertilizers	Percentage	Total	Treated with chemical fertilizers	Percentage
1	Marginal	130389	110912	85.06	38542	35550	92.24
2	Small	33620	31049	92.35	29309	27979	95.46
3	Semi- medium	13774	12677	92.04	21892	20902	95.48
4	Medium	3081	2846	92.37	10983	10726	97.66
5	Large	361	345	95.57	3986	3976	99.75
	All size groups	181225	157829	87.09	104712	99133	94.67

Table 6.25

Distribution of area irrigated under HYV, HYB & other varieties of paddy treated with chemical fertilizers (Ha)

Sl. No.	Size Group	HYV			Others		
		Total	Treated with chemical fertilizers	Percentage	Total	Treated with chemical fertilizers	Percentage
1	Marginal	36941	35118	95.07	1601	432	26.98
2	Small	27999	27173	97.05	1310	806	61.53
3	Semi- medium	21110	20579	97.48	782	323	41.30
4	Medium	10845	10673	98.41	138	53	38.41
5	Large	3981	3973	99.80	5	3	60.00
	All size groups	100876	97516	96.67	3836	1617	42.15

Table 6.26

Average rate of application of fertilizers for paddy in different holding size classes under irrigated condition

Sl. No.	Size Group	Paddy area treated with chemical fertilizers (Ha)	N		P		K	
			Qty. applied (MT)	Average (Kg/Ha)	Qty. applied (MT)	Average (Kg/Ha)	Qty. applied (MT)	Average (Kg/Ha)
1	Marginal	35550	4593.16	129.20	1114.03	31.34	2149.01	60.45
2	Small	27979	3668.06	131.10	1177.89	42.10	1949.45	69.68
3	Semi- medium	20902	2815.16	134.68	972.80	46.54	1580.44	75.61
4	Medium	10726	2356.46	219.70	1437.89	134.06	1621.92	151.21
5	Large	3976	452.12	113.71	247.26	62.19	263.66	66.31
	All size groups	99133	13884.96	140.06	4949.87	49.93	7564.48	76.31

Table 6.27

Distribution of holdings and area irrigated under tapioca treated with chemical fertilizers

Sl. No.	Size Group	No. of holdings growing the crop			Area under the crop (Ha)		
		Total	Treated with chemical fertilizers	Percentage	Total	Treated with chemical fertilizers	Percentage
1	Marginal	285609	23347	8.17	3021	605	20.03
2	Small	11261	2302	20.44	681	285	41.85
3	Semi- medium	3379	817	24.18	333	153	45.95
4	Medium	778	242	31.11	164	132	80.49
5	Large	119	52	43.70	94	89	94.68
	All size groups	301146	26760	8.89	4293	1264	29.44

Table 6.28

Distribution of holdings and area irrigated under coconut treated with chemical fertilizers & average consumption in terms of NPK nutrients

Sl. No.	Size Group	No. of holdings growing the crop			Area under the crop (Ha)			Average quantity applied (Kg/Ha)		
		Total	Treated with chemical fertilizers	Percentage	Total	Treated with chemical fertilizers	Percentage	N	P	K
1	Marginal	2149352	255646	11.89	68687	15357	22.36	144.17	65.73	105.10
2	Small	64597	18496	28.63	13454	4529	33.66	100.62	49.25	89.55
3	Semi- medium	21131	6789	32.13	7105	2448	34.45	106.05	51.71	121.09
4	Medium	4325	1688	39.03	2678	1198	44.73	110.10	56.43	102.67
5	Large	295	104	35.25	755	308	40.79	259.84	54.97	243.51
	All size groups	2239700	282723	12.62	92679	23840	25.72	131.76	60.56	105.45

Table 6.29

Distribution of holdings and area irrigated under rubber treated with chemical fertilizers & average consumption in terms of NPK nutrients

Sl. No.	Size Group	No. of holdings growing the crop			Area under the crop (Ha)			Average quantity applied (Kg/Ha)		
		Total	Treated with chemical fertilizers	Percentage	Total	Treated with chemical fertilizers	Percentage	N	P	K
1	Marginal	4938	2314	46.86	458	307	67.03	17.23	35.73	17.23
2	Small	459	129	28.10	236	74	31.36	66.76	66.76	40.00
3	Semi- medium	203	98	48.28	130	63	48.46	63.33	50.32	42.06
4	Medium	40	28	70.00	61	28	45.90	30.71	44.64	33.57
5	Large	0	0	0	0	0	0	0	0	0
	All size groups	5640	2569	45.55	885	472	53.33	31.95	43.07	25.08

Table 6.30

Distribution of holdings and area irrigated under food crops treated with chemical fertilizers & average consumption in terms of NPK nutrients

Sl. No.	Size Group	No. of holdings growing the crop			Area under the crop (Ha)			Average quantity applied (Kg/Ha)		
		Total	Treated with chemical fertilizers	Percentage	Total	Treated with chemical fertilizers	Percentage	N	P	K
1	Marginal	3444628	470407	13.66	123661	61157	49.46	182.33	58.04	111.80
2	Small	136399	69048	50.62	55288	40889	73.96	171.09	59.61	114.50
3	Semi- medium	43466	24687	56.80	37077	29589	79.80	163.22	61.10	103.62
4	Medium	8493	5346	62.95	16668	14210	85.25	223.76	121.54	155.42
5	Large	979	692	70.68	7402	6889	93.07	124.60	68.03	113.69
	All size groups	3633965	570180	15.69	240096	152734	63.61	176.87	65.41	115.08

Table 6.31
Distribution of number and area of un-irrigated Paddy treated with chemical fertilizers

Sl. No.	Size Group	No. of holdings growing the crop			Area under the crop (Ha)		
		Total	Treated with chemical fertilizers	Percentage	Total	Treated with chemical fertilizers	Percentage
1	Marginal	166976	33106	19.83	23566	9552	40.53
2	Small	23225	10158	43.74	15466	9563	61.83
3	Semi- medium	7449	4080	54.77	9753	7342	75.28
4	Medium	1563	897	57.39	3699	2879	77.83
5	Large	65	55	84.62	343	315	91.84
	All size groups	199278	48296	24.24	52827	29651	56.13

Table 6.32
Distribution of un-irrigated area under HYV, HYB & other varieties of paddy treated with chemical fertilizers (Ha)

Sl. No.	Size Group	HYV			Others		
		Total	Treated with chemical fertilizers	Percentage	Total	Treated with chemical fertilizers	Percentage
1	Marginal	16034	8959	55.88	7532	593	7.87
2	Small	12355	9167	74.20	3111	396	12.73
3	Semi- medium	8638	7201	83.36	1115	141	12.65
4	Medium	3337	2834	84.93	362	45	12.43
5	Large	313	313	100.00	30	2	6.67
	All size groups	40677	28474	70.00	12150	1177	9.69

Table 6.33
Average rate of application NPK in un-irrigated area under paddy

Sl. No.	Size Group	Paddy area treated with chemical fertilizers (Ha)	N		P		K	
			Qty. applied (MT)	Average (Kg/Ha)	Qty. applied (MT)	Average (Kg/Ha)	Qty. applied (MT)	Average (Kg/Ha)
1	Marginal	9552	1014.33	106.19	232.05	24.29	480.25	50.28
2	Small	9563	1218.25	127.39	347.63	36.35	613.58	64.16
3	Semi- medium	7342	1008.76	137.40	319.08	43.46	525.44	71.57
4	Medium	2879	419	145.54	119.27	41.43	192.09	66.72
5	Large	315	36.58	116.13	15.50	49.21	18.11	57.49
	All size groups	29651	3696.92	124.68	1033.53	34.86	1829.47	61.70

Table 6.34
Distribution of number and area of un-irrigated tapioca treated with chemical fertilizers

Sl. No.	Size Group	No. of holdings growing the crop			Area under the crop (Ha)		
		Total	Treated with chemical fertilizers	Percentage	Total	Treated with chemical fertilizers	Percentage
1	Marginal	502844	50044	9.95	10305	1728	16.77
2	Small	27321	4955	18.14	2092	630	30.11
3	Semi- medium	7937	1515	19.09	695	190	27.34
4	Medium	1698	325	19.14	230	79	34.35
5	Large	170	49	28.82	30	9	30.00
	All size groups	539970	56888	10.54	13352	2636	19.74

Table 6.35

Distribution of number and area of un-irrigated coconut treated with chemical fertilizers & average consumption in terms of NPK nutrients

Sl. No.	Size Group	No. of holdings growing the crop			Area under the crop (Ha)			Average quantity applied (Kg/Ha)		
		Total	Treated with chemical fertilizers	Percentage	Total	Treated with chemical fertilizers	Percentage	N	P	K
1	Marginal	4659425	344404	7.39	170200	19736	11.60	178.15	78.49	143.53
2	Small	125743	24744	19.68	27129	5333	19.66	167.43	43.62	92.40
3	Semi- medium	37322	8644	23.16	11212	2486	22.17	123.11	67.68	95.74
4	Medium	7184	2109	29.36	3356	840	25.03	158.55	74.31	134.35
5	Large	869	319	36.71	676	172	25.44	128.55	83.60	130.00
	All size groups	4830543	380220	7.87	212573	28567	13.44	170.49	70.95	129.47

Table 6.36

Distribution of number and area of un-irrigated rubber treated with chemical fertilizers & average consumption in terms of NPK nutrients

Sl. No.	Size Group	No. of holdings growing the crop			Area under the crop (Ha)			Average quantity applied (Kg/Ha)		
		Total	Treated with chemical fertilizers	Percentage	Total	Treated with chemical fertilizers	Percentage	N	P	K
1	Marginal	754022	387750	51.42	171141	92302	53.93	93.85	102.89	94.96
2	Small	87445	48156	55.07	73471	42098	57.30	109.68	99.22	100.18
3	Semi- medium	32011	18023	56.30	49036	29078	59.30	107.20	93.09	90.83
4	Medium	6174	3620	58.63	19336	11703	60.52	109.95	93.92	94.22
5	Large	556	367	66.01	5706	3974	69.65	58.42	69.66	62.82
	All size groups	880208	457916	52.02	318690	179155	56.22	100.00	99.11	94.76

Table 6.37

Distribution of number and area of un-irrigated under food crops treated with chemical fertilizers & average consumption in terms of NPK nutrients

Sl. No.	Size Group	No. of holdings growing the crop			Area under the crop (Ha)			Average quantity applied (Kg/Ha)		
		Total	Treated with chemical fertilizers	Percentage	Total	Treated with chemical fertilizers	Percentage	N	P	K
1	Marginal	5522116	214537	3.89	192522	19116	9.93	161.53	57.89	106.03
2	Small	161861	27939	17.26	53801	13437	24.98	138.36	45.55	79.34
3	Semi- medium	49062	10494	21.39	27845	9328	33.50	142.90	53.03	86.87
4	Medium	9523	2480	26.04	10241	4002	39.08	168.48	59.66	102.42
5	Large	964	293	30.39	1655	808	48.82	121.77	64.50	90.75
	All size groups	5743526	255743	4.45	286064	46691	16.32	151.05	53.63	93.95

Table 6.38

Number of holdings and area benefited by organic manure in irrigated area

Sl. No.	Name of organic manure	No. of holdings benefited by the manure	% to the total holdings growing irrigated crops	Area benefited by the manure (ha)	% to the total area under irrigated crops
1	FYM/ Composit/ Biogas manure	1532389	36.72	123782	36.64
2	Oil cake	209155	5.01	20598	6.10
3	Other organic manure	906682	21.72	53558	15.85
4	Green manure	525818	12.60	34229	10.13

Table 6.39
Percentage of irrigated area under paddy, tapioca & coconut treated with organic manure

Sl. No.	Name of crops		Total irrigated area under the crop (Ha)	Area covered by FYM	% to total irrigated area	Area covered by other organic manure (Ha)	% to total irrigated area
1	Paddy	HYV	100876	18416	18.26	6775	6.72
		Others	3836	2268	59.12	921	24.01
2	Tapioca	HYV	779	120	15.40	135	17.33
		HYB	147	0	0.00	38	25.85
		Others	3367	1259	37.39	662	19.66
3	Coconut	HYV	6095	2451	40.21	1000	16.41
		HYB	762	264	34.65	37	4.86
		Others	85822	45748	53.31	22297	25.98
4	Rubber	HYV	203	14	6.90	0	0.00
		HYB	402	0	0.00	66	16.42
		Others	280	61	21.79	18	6.43

Table 6.40
Percentage of area irrigated treated with different organic manure and green manure

Sl. No.	Size group	FYM/ Compost/ Biogas manure	Oil cake	Other organic manure	Green manure
1	Marginal	39.33	6.28	18.71	12.15
2	Small	35.22	5.77	13.23	8.91
3	Semi- medium	33.26	5.71	11.28	6.64
4	Medium	30.06	5.86	10.19	6.06
5	Large	21.44	7.13	10.09	2.75
	All size groups	36.64	6.10	15.85	10.13

Table 6.41
Number of holdings and area benefited by organic manure in un-irrigated area

Sl. No.	Name of organic manure	No. of holdings benefited by the manure	% to the total holdings growing unirrigated crops	Area benefited by the manure (ha)	% to the total area under unirrigated crops
1	FYM/ Compost/ Biogas manure	1378939	20.86	180816	19.65
2	Oil cake	105155	1.59	12403	1.35
3	Other organic manure	771072	11.66	62363	6.78
4	Green manure	462461	6.99	34260	3.72

Table 6.42
Percentage of un-irrigated area under paddy, tapioca & coconut treated with organic manure

Sl. No.	Name of crops		Total un-irrigated area under the crop (Ha)	Area covered by FYM	% to total irrigated area	Area covered by other organic manure (Ha)	% to total irrigated area
1	Paddy	HYV	40677	12575	30.91	1575	3.87
		Others	12150	2869	23.61	876	7.21
2	Tapioca	HYV	2675	853	31.89	481	17.98
		HYB	101	20	19.80	46	45.54
		Others	10576	2246	21.24	916	8.66
3	Coconut	HYV	10010	3156	31.53	1096	10.95
		HYB	1446	331	22.89	223	15.42
		Others	201116	63726	31.69	33212	16.51
4	Rubber	HYV	193090	42306	21.91	9727	5.04
		HYB	60827	11056	18.18	3133	5.15
		Others	64773	9900	15.28	2078	3.21

Table 6.43
Percentage of area un-irrigated treated with different organic manure and green manure

Sl. No.	Size group	FYM/ Compost/ Biogas manure	Oil cake	Other organic manure	Green manure
1	Marginal	18.64	1.48	6.79	4.21
2	Small	21.50	1.33	6.82	3.29
3	Semi- medium	22.99	0.86	6.75	2.48
4	Medium	20.56	0.74	6.22	1.76
5	Large	11.82	0.67	7.43	1.76
	All size groups	19.65	1.35	6.78	3.72

Table 6.44
Estimated number of agriculture machinery owned & used by operational holdings

Sl. No.	Size Group	Total number of operational holdings	Chaff cutter	Hand operated sprayer/ duster	Hand hoe	Hand wheel hoe	Blade hoe	Power sprayer	Power tillers	Agriculture Tractor	Brush cutter	Diesel engine pump set	Electric pump set	Sprinkler irrigation set	Drip irrigation set
1	Marginal	7279288	9445	72972	3241034	70458	861780	33309	4367	5313	22418	10492	1130216	27167	5890
2	Small	176145	1389	10661	96499	2350	32886	11437	1034	1384	7094	3181	58596	5436	973
3	Semi-medium	53323	577	4772	31685	956	12480	4487	418	849	4372	1682	19831	2745	1067
4	Medium	10144	137	1322	6614	220	2836	1464	154	321	1391	534	4485	903	391
5	Large	1120	43	104	810	70	321	281	53	104	187	152	478	128	41
	All size groups	7520020	11591	89831	3376642	74054	910303	50978	6026	7971	35462	16041	1213606	36379	8362

Table 6.45
Estimated number of agriculture machinery hired by operational holdings

Sl. No.	Size Group	Total number of operational holdings	Hand operated sprayer/ duster	Hand hoe	Power sprayer	Power tillers	Agriculture Tractor	Brush cutter	Diesel engine pump set	Electric pump set
1	Marginal	7279288	21213	73245	34202	29179	88597	109825	7379	16188
2	Small	176145	3583	2989	9703	6741	23351	16489	1761	3310
3	Semi- medium	53323	1052	741	3936	3009	9138	6319	671	1430
4	Medium	10144	190	123	931	782	2051	1236	221	393
5	Large	1120	46	17	139	95	252	84	0	32
	All size groups	7520020	26084	77115	48911	39806	123389	133953	10032	21353

Table 6.46
Percentage number of operational holders availing institutional credit under different size groups

Sl. No.	Size Group	Total number of operational holdings	Estimated number of operational holdings availing institutional credit	Percentage of operational holdings availing institutional credit	Percentage of operational holdings availing credit from			
					PACS	PLDB/ SLDB	RRBB	CBB
1	Marginal	7279288	280030	3.85	1.50	0.99	0.35	1.06
2	Small	176145	58317	33.11	22.15	1.53	3.83	9.29
3	Semi- medium	53323	25699	48.19	34.10	2.17	4.54	13.85
4	Medium	10144	6955	68.56	56.94	7.69	5.02	18.80
5	Large	1120	495	44.20	26.25	3.30	12.50	21.88
	All size groups	7520020	371496	4.94	2.30	1.02	0.47	1.37

Table 6.47
Distribution of amount of Agricultural credit per holder

Sl. No.	Size Group	No of holders took institutional credit	Amount of institutional credit taken (Rs)	Average amount per holder
1	Marginal	280030	49590463000	177090
2	Small	58317	17364714000	297764
3	Semi- medium	25699	8102678000	315292
4	Medium	6955	4107705000	590612
5	Large	495	635603000	1284046
All size groups		371496	79801163000	214810

Table 6.48
Source wise number of holdings who purchased certified seeds

Sl. No.	Size Group	Dept of Agriculture	Seed Corp	State Agriculture University Farms	Coop. Fed	Pvt. Seed Comp	Pvt. Seed D/R
1	Marginal	20846	0	2558	0	3044	20269
2	Small	5808	142	230	56	276	1069
3	Semi- medium	2301	113	161	41	0	327
4	Medium	712	41	10	33	0	28
5	Large	125	0	0	0	0	0
	All size groups	29792	296	2959	130	3320	21693

Table 6.49

Percentage distribution of operational holdings adopted usual methods of pest control by major size groups of holdings

Sl. No.	Size Group	Total no. of operational holdings	Percentage of holdings which						
			adopted pest control methods	Agronomic & cultural practices	Mechanical control	Biological methods	Chemical methods	Others	No efforts/ practices
1	Marginal	96.80	92.76	96.59	89.72	91.87	75.78	93.33	98.17
2	Small	2.34	5.09	2.47	6.73	5.75	16.25	4.76	1.41
3	Semi- medium	0.71	1.76	0.75	2.56	1.80	6.35	1.59	0.35
4	Medium	0.13	0.35	0.16	0.80	0.50	1.42	0.28	0.06
5	Large	0.01	0.05	0.03	0.19	0.07	0.20	0.03	0.00
	All size groups	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 6.50

Percentage area under paddy treated with pesticides

Sl. No.	Irrigation status	Area under paddy HYV (Ha)					Area under other varieties of paddy (Ha)				
		Total	Treated with chem. pesticides	Percentage	Treated with bio pesticides	Percentage	Total	Treated with chem. pesticides	Percentage	Treated with bio pesticides	Percentage
1	Irrigated	100876	70221	69.61	2153	2.13	3836	242	6.31	68	1.77
2	Un-irrigated	40677	21878	53.78	269	0.66	12150	173	1.42	27	0.22
3	Total	141553	92099	65.06	2422	1.71	15986	415	2.60	95	0.59

Table 7.1

District wise distribution of number of holdings, operated area, parcels and cropped area by major size groups

(Marginal)

Sl. No.	District	Number of holdings	Operated area (Ha)	Number of parcels	Average			Net sown area (Ha)			Gross cropped area (Ha)		
					Number of parcels per holdings	Area per parcel (Ha)	Area per holding (Ha)	Irrigated	Un-irrigated	Total	Irrigated	Un-irrigated	Total
1	Kasargode	254362	57159	280954	1.10	0.20	0.22	25171	23049	48220	25173	24125	49298
2	Kannur	534883	77198	613400	1.15	0.13	0.14	10148	51456	61604	10148	52794	62942
3	Wayanad	170017	41374	203076	1.19	0.20	0.24	4040	33182	37222	4193	37446	41639
4	Kozhikode	669564	104568	804409	1.20	0.13	0.16	14218	73219	87437	14218	75364	89582
5	Malappuram	794623	62309	867677	1.09	0.07	0.08	15130	29851	44981	15915	32081	47996
6	Palakkad	568700	65012	665852	1.17	0.10	0.11	20505	30546	51051	21716	38987	60703
7	Thrissur	702925	101387	915724	1.30	0.11	0.14	45576	34970	80546	45693	37581	83274
8	Ernakulam	684670	30785	748361	1.09	0.04	0.04	4503	15392	19895	5456	17732	23188
9	Idukki	240743	55709	263435	1.09	0.21	0.23	12818	36269	49087	15633	48613	64246
10	Kottayam	408105	96843	521945	1.28	0.19	0.24	10395	70978	81373	11182	75339	86521
11	Alappuzha	509790	15936	518891	1.02	0.03	0.03	4010	4856	8866	4049	4910	8959
12	Pathanamthitta	296461	58727	1017925	3.43	0.06	0.20	3440	45696	49136	3440	46989	50429
13	Kollam	629746	35673	667533	1.06	0.05	0.06	3158	21992	25150	3409	24368	27777
14	Thiruvananthapuram	814699	111779	897679	1.10	0.12	0.14	10792	81926	92718	13909	83974	97883
	Kerala	7279288	914459	8986861	1.23	0.10	0.13	183904	553382	737286	194134	600303	794437

Table 7.2

District wise distribution of number of holdings, operated area, parcels and cropped area by major size groups

(Small)

Sl. No.	District	Number of holdings	Operated area (Ha)	Number of parcels	Average			Net sown area(Ha)			Gross cropped area (Ha)		
					Number of parcels per holdings	Area per parcel (Ha)	Area per holding (Ha)	Irrigated	Un-irrigated	Total	Irrigated	Un-irrigated	Total
1	Kasargode	12514	16926	19277	1.54	0.88	1.35	6787	8251	15038	6787	8750	15537
2	Kannur	15287	19823	37339	2.44	0.53	1.30	2054	16328	18382	2098	17177	19275
3	Wayanad	13388	18238	25125	1.88	0.73	1.36	3855	13549	17404	4127	15025	19152
4	Kozhikode	9591	12900	23480	2.45	0.55	1.35	1541	10473	12014	1561	10769	12330
5	Malappuram	14639	19463	33379	2.28	0.58	1.33	6246	11586	17832	6555	12404	18959
6	Palakkad	21096	31390	48691	2.31	0.64	1.49	14990	14480	29470	15891	22662	38553
7	Thrissur	9770	12891	20064	2.05	0.64	1.32	7078	4575	11653	7130	5141	12271
8	Ernakulam	13812	18069	23608	1.71	0.77	1.31	4030	11816	15846	4166	12735	16901
9	Idukki	23001	30304	31085	1.35	0.97	1.32	8529	20202	28731	9293	26000	35293
10	Kottayam	18511	25481	33506	1.81	0.76	1.38	4816	18995	23811	5208	19878	25086
11	Alappuzha	6077	7916	13101	2.16	0.60	1.30	3969	3202	7171	4416	4013	8429
12	Pathanamthitta	7807	9940	29765	3.81	0.33	1.27	826	8463	9289	826	8817	9643
13	Kollam	5273	6816	15696	2.98	0.43	1.29	446	5853	6299	464	6063	6527
14	Thiruvananthapuram	5379	6741	10550	1.96	0.64	1.25	884	5450	6334	1160	5494	6654
	Kerala	176145	236898	364666	2.07	0.65	1.34	66051	153223	219274	69682	174928	244610

Table 7.3

District wise distribution of number of holdings, operated area, parcels and cropped area by major size groups

(Semi-medium)

Sl. No.	District	Number of holdings	Operated area (Ha)	Number of parcels	Average			Net sown area (Ha)			Gross cropped area (Ha)		
					Number of parcels per holdings	Area per parcel (Ha)	Area per holding (Ha)	Irrigated	Un-irrigated	Total	Irrigated	Un-irrigated	Total
1	Kasargode	4001	10283	6130	1.53	1.68	2.57	4024	5447	9471	4024	5671	9695
2	Kannur	4212	10102	13002	3.09	0.78	2.40	995	8641	9636	998	8863	9861
3	Wayanad	5310	12355	11193	2.11	1.10	2.33	3342	8628	11970	3515	9474	12989
4	Kozhikode	2485	6386	6876	2.77	0.93	2.57	707	5368	6075	711	5509	6220
5	Malappuram	4070	10471	10616	2.61	0.99	2.57	2986	6620	9606	3170	6952	10122
6	Palakkad	8989	24713	23021	2.56	1.07	2.75	13143	10568	23711	13960	17600	31560
7	Thrissur	2360	5862	7480	3.17	0.78	2.48	2929	2475	5404	2959	2725	5684
8	Ernakulam	4090	10655	9544	2.33	1.12	2.61	1979	7748	9727	2047	8465	10512
9	Idukki	5948	14563	9091	1.53	1.60	2.45	4603	9332	13935	4918	11855	16773
10	Kottayam	6173	15464	11837	1.92	1.31	2.51	3221	11509	14730	3399	12063	15462
11	Alappuzha	2027	5383	5373	2.65	1.00	2.66	3718	1274	4992	4219	1626	5845
12	Pathanamthitta	1709	4279	10238	5.99	0.42	2.50	451	3496	3947	451	3501	3952
13	Kollam	904	2261	3309	3.66	0.68	2.50	178	1899	2077	180	1953	2133
14	Thiruvananthapuram	1045	2527	2567	2.46	0.98	2.42	349	2051	2400	438	2060	2498
	Kerala	53323	135304	130277	2.44	1.04	2.54	42625	85056	127681	44989	98317	143306

Table 7.4

District wise distribution of number of holdings, operated area, parcels and cropped area by major size groups

(Medium)

Sl. No.	District	Number of holdings	Operated area (Ha)	Number of parcels	Average			Net sown area (Ha)			Gross cropped area (Ha)		
					Number of parcels per holdings	Area per parcel (Ha)	Area per holding (Ha)	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total
1	Kasargode	864	4319	1338	1.55	3.23	5.00	1730	2237	3967	1730	2318	4048
2	Kannur	553	2665	1687	3.05	1.58	4.82	260	2315	2575	260	2364	2624
3	Wayanad	786	4106	1975	2.51	2.08	5.22	953	3032	3985	982	3391	4373
4	Kozhikode	400	2041	1135	2.84	1.80	5.10	350	1593	1943	350	1637	1987
5	Malappuram	756	3997	2635	3.49	1.52	5.29	1056	2718	3774	1084	2862	3946
6	Palakkad	1998	10967	5859	2.93	1.87	5.49	5098	5250	10348	5577	7828	13405
7	Thrissur	428	2174	1190	2.78	1.83	5.08	943	1030	1973	947	1164	2111
8	Ernakulam	990	5563	2204	2.23	2.52	5.62	1132	3894	5026	1189	4313	5502
9	Idukki	862	4460	1708	1.98	2.61	5.17	1731	2617	4348	1798	3182	4980
10	Kottayam	1370	7123	3047	2.22	2.34	5.20	1850	5022	6872	1947	5227	7174
11	Alappuzha	568	3256	1995	3.51	1.63	5.73	2888	271	3159	3354	303	3657
12	Pathanamthitta	315	1623	791	2.51	2.05	5.15	391	1175	1566	391	1175	1566
13	Kollam	100	480	285	2.85	1.68	4.80	23	418	441	23	419	442
14	Thiruvananthapuram	154	774	495	3.21	1.56	5.03	120	625	745	159	631	790
	Kerala	10144	53548	26344	2.60	2.03	5.28	18525	32197	50722	19791	36814	56605

Table 7.5

District wise distribution of number of holdings, operated area, parcels and cropped area by major size groups

(Large)

Sl. No.	District	Number of holdings	Operated area (Ha)	Number of parcels	Average			Net sown area (Ha)			Gross cropped area (Ha)		
					Number of parcels per holdings	Area per parcel (Ha)	Area per holding (Ha)	Irrigated	Un-irrigated	Total	Irrigated	Un-irrigated	Total
1	Kasargode	35	509	81	2.31	6.28	14.54	197	276	473	197	276	473
2	Kannur	0	0	0	0.00	0.00	0.00	0	0	0	0	0	0
3	Wayanad	161	2215	409	2.54	5.42	13.76	675	1422	2097	692	1460	2152
4	Kozhikode	45	616	90	2.00	6.84	13.69	2	605	607	2	605	607
5	Malappuram	123	2080	385	3.13	5.40	16.91	697	1314	2011	711	1322	2033
6	Palakkad	145	1941	407	2.81	4.77	13.39	909	899	1808	1007	1208	2215
7	Thrissur	55	1180	192	3.49	6.15	21.45	827	342	1169	827	342	1169
8	Ernakulam	85	1862	447	5.26	4.17	21.91	1514	343	1857	1514	343	1857
9	Idukki	115	1899	246	2.14	7.72	16.51	966	847	1813	993	953	1946
10	Kottayam	160	2777	502	3.14	5.53	17.36	531	2168	2699	535	2194	2729
11	Alappuzha	116	1776	473	4.08	3.75	15.31	1734	33	1767	1840	33	1873
12	Pathanamthitta	50	1523	150	3.00	10.15	30.46	928	535	1463	928	535	1463
13	Kollam	15	186	30	2.00	6.20	12.40	3	129	132	3	129	132
14	Thiruvananthapuram	15	218	40	2.67	5.45	14.53	14	194	208	14	194	208
	Kerala	1120	18782	3452	3.08	5.44	16.77	8997	9107	18104	9263	9594	18857

Table 7.6

District wise distribution of number of holdings, operated area, parcels and cropped area by major size groups

(All size classes)

Sl. No.	District	Number of holdings	Operated area (Ha)	Number of parcels	Average			Net sown area (Ha)			Gross cropped area (Ha)		
					Number of parcels per holdings	Area per parcel (Ha)	Area per holding (Ha)	Irrigated	Un-irrigated	Total	Irrigated	Un-irrigated	Total
1	Kasargode	271776	89196	307780	1.13	0.29	0.33	37909	39260	77169	37911	41140	79051
2	Kannur	554935	109788	665428	1.20	0.16	0.20	13457	78740	92197	13504	81198	94702
3	Wayanad	189662	78288	241778	1.27	0.32	0.41	12865	59813	72678	13509	66796	80305
4	Kozhikode	682085	126511	835990	1.23	0.15	0.19	16818	91258	108076	16842	93884	110726
5	Malappuram	814211	98320	914692	1.12	0.11	0.12	26115	52089	78204	27435	55621	83056
6	Palakkad	600928	134023	743830	1.24	0.18	0.22	54645	61743	116388	58151	88285	146436
7	Thrissur	715538	123494	944650	1.32	0.13	0.17	57353	43392	100745	57556	46953	104509
8	Ernakulam	703647	66934	784164	1.11	0.09	0.10	13158	39193	52351	14372	43588	57960
9	Idukki	270669	106935	305565	1.13	0.35	0.40	28647	69267	97914	32635	90603	123238
10	Kottayam	434319	147688	570837	1.31	0.26	0.34	20813	108672	129485	22271	114701	136972
11	Alappuzha	518578	34267	539833	1.04	0.06	0.07	16319	9636	25955	17878	10885	28763
12	Pathanamthitta	306342	76092	1058869	3.46	0.07	0.25	6036	59365	65401	6036	61017	67053
13	Kollam	636038	45416	686853	1.08	0.07	0.07	3808	30291	34099	4079	32932	37011
14	Thiruvananthapuram	821292	122039	911331	1.11	0.13	0.15	12159	90246	102405	15680	92353	108033
	Kerala	7520020	1358991	9511600	1.26	0.14	0.18	320102	832965	1153067	337859	919956	1257815

Table 7.7

District wise percentage distribution of area under different crops (Gross cropped area)

Sl. No.	District	Paddy	Tapioca	Coconut	Arecanut	Cashew	Coffee	Cardamum	Rubber	Total
1	Kasargode	6.88	0.17	35.95	12.27	3.94	0.00	0.00	23.09	82.31
2	Kannur	8.16	0.38	32.12	3.98	7.09	0.10	0.00	32.83	84.65
3	Wayanad	7.46	0.57	5.93	7.89	0.73	39.81	0.21	4.73	67.32
4	Kozhikode	7.34	0.92	56.72	7.59	0.49	0.07	0.02	9.17	82.32
5	Malappuram	6.17	1.12	41.75	6.71	0.59	0.04	0.00	18.58	74.96
6	Palakkad	42.58	0.82	15.30	2.78	0.13	0.26	0.06	15.28	77.22
7	Thrissur	16.85	0.59	37.06	4.07	0.63	0.00	0.00	6.22	65.43
8	Ernakulam	11.07	1.79	13.54	1.77	0.08	0.14	0.00	41.93	70.33
9	Idukki	0.16	1.67	4.14	0.70	0.17	5.57	20.04	19.52	51.98
10	Kottayam	12.01	2.17	10.54	0.56	0.09	0.56	0.02	54.16	80.11
11	Alappuzha	47.14	0.95	19.07	0.98	0.84	0.01	0.00	2.44	71.44
12	Pathanamthitta	2.30	1.81	8.53	0.83	0.16	0.43	0.00	54.62	68.69
13	Kollam	1.17	3.43	26.60	1.29	0.51	0.00	0.00	36.42	69.41
14	Thiruvananthapuram	6.09	3.78	32.01	0.34	0.31	0.00	0.00	35.75	78.28
	Kerala	12.52	1.40	24.27	3.69	1.08	3.23	1.99	25.41	73.59

Table 7.8
District wise number & area of irrigated holdings treated with chemical fertilizers

Sl. No.	District	No. of holdings growing one or more crops			Area of holdings growing one or more crops (Ha)		
		Total	No. treated with one or more chem. Fertilizer	Percentage	Total	Area treated with one or more chem. Fertilizer	Percentage
1	Kasargode	243980	98733	40.47	37911	13934	36.75
2	Kannur	313853	43033	13.71	13504	2364	17.51
3	Wayanad	73643	26123	35.47	13509	10070	74.54
4	Kozhikode	266360	45263	16.99	16842	6212	36.88
5	Malappuram	431863	40836	9.46	27435	8197	29.88
6	Palakkad	356541	88507	24.82	58151	46309	79.64
7	Thrissur	546125	114133	20.90	57556	22382	38.89
8	Ernakulam	362570	48985	13.51	14372	7150	49.75
9	Idukki	164020	49529	30.20	32635	19635	60.17
10	Kottayam	214947	63540	29.56	22271	18486	83.00
11	Alappuzha	290882	15895	5.46	17878	13072	73.12
12	Pathanamthitta	180252	43533	24.15	6036	3393	56.21
13	Kollam	272761	22049	8.08	4079	617	15.13
14	Thiruvananthapuram	455847	31327	6.87	15680	6892	43.95
	Kerala	4173644	731486	17.53	337859	178713	52.90

Table 7.9
District wise number & area of un-irrigated holdings treated with chemical fertilizers

Sl. No.	District	No. of holdings growing one or more crops			Area of holdings growing one or more crops (Ha)		
		Total	No. treated with one or more chem. Fertilizer	Percentage	Total	Area treated with one or more chem. Fertilizer	Percentage
1	Kasargode	210159	39965	19.02	41140	15451	37.56
2	Kannur	427153	80530	18.85	81198	19637	24.18
3	Wayanad	185621	45224	24.36	66796	17184	25.73
4	Kozhikode	621495	59560	9.58	93884	12669	13.49
5	Malappuram	657868	39792	6.05	55621	13965	25.11
6	Palakkad	540118	79321	14.69	88285	48202	54.60
7	Thrissur	646737	31984	4.95	46953	7122	15.17
8	Ernakulam	526791	40844	7.75	43588	12875	29.54
9	Idukki	258039	32222	12.49	90603	14061	15.52
10	Kottayam	431020	147760	34.28	114701	42687	37.22
11	Alappuzha	433744	25444	5.87	10885	1348	12.38
12	Pathanamthitta	297075	121026	40.74	61017	29142	47.76
13	Kollam	591937	59224	10.01	32932	12362	37.54
14	Thiruvananthapuram	783566	83777	10.69	92353	18312	19.83
	Kerala	6611323	886673	13.41	919956	265017	28.81

Table 7.10
District wise average consumption of chemical fertilizers in terms of nutrients in irrigated area (Kg/MT)

Sl. No.	Districts	HYV			HYB			Others			Total		
		N	P	K	N	P	K	N	P	K	N	P	K
1	Kasargode	29.81	28.09	32.42	0.00	0.00	0.00	18.30	12.57	20.11	23.64	17.59	25.91
2	Kannur	27.14	12.65	14.68	46.06	46.82	46.06	31.92	20.73	20.18	31.86	20.67	20.30
3	Wayanad	121.98	18.66	62.08	35.14	89.23	3.06	176.09	38.14	137.37	139.63	27.95	88.43
4	Kozhikode	242.84	46.43	147.27	150.00	0.29	113.82	140.60	47.45	89.96	161.20	47.15	101.54
5	Malappuram	136.99	34.32	105.52	99.91	22.86	11.87	35.15	10.37	25.77	53.96	14.74	39.42
6	Palakkad	148.06	45.28	81.66	128.08	53.72	144.74	147.41	59.38	125.86	147.83	49.82	95.94
7	Thrissur	141.33	34.65	68.85	27.20	15.30	17.74	35.47	11.07	29.63	66.04	17.92	40.90
8	Ernakulam	104.68	38.24	105.44	40.57	30.60	52.93	56.37	22.69	40.80	67.91	27.93	60.13
9	Idukki	61.01	68.64	98.98	463.18	5.46	12.53	18.14	7.60	9.67	97.69	46.27	66.95
10	Kottayam	178.76	86.84	124.65	2.67	13.33	8.67	51.66	37.64	38.97	158.33	78.92	110.89
11	Alappuzha	143.10	90.85	82.13	0.00	0.00	0.00	21.62	7.12	6.16	107.62	66.40	59.95
12	Pathanamthitta	97.80	71.37	90.06				50.33	23.50	59.64	69.32	42.66	71.81
13	Kollam	30.09	27.68	33.93				28.68	2.55	7.77	29.01	8.43	13.89
14	Thiruvananthapuram	69.76	5.75	15.24	10.72	10.72	21.45	10.18	4.49	4.92	36.89	5.09	9.64
	Kerala	126.72	52.22	84.35	266.61	19.40	24.67	54.12	20.72	42.16	89.97	34.27	59.96

Table 7.11

District wise average consumption of chemical fertilizers in terms of nutrients in un-irrigated area (Kg/MT)

Sl. No.	Districts	HYV			HYB			Others			Total		
		N	P	K	N	P	K	N	P	K	N	P	K
1	Kasargode	29.43	28.49	32.30	41.14	41.14	41.14	3.96	1.52	1.78	45.02	41.26	46.81
2	Kannur	31.97	39.42	21.38	40.22	42.52	23.77	18.97	11.04	7.95	23.90	19.64	12.15
3	Wayanad	81.27	3.60	39.90	11.04	1.09	4.66	34.75	6.56	19.10	43.13	5.91	22.78
4	Kozhikode	18.10	19.97	12.22	58.90	73.63	75.57	17.60	7.09	13.09	17.82	8.25	13.31
5	Malappuram	94.82	75.38	61.98	24.07	23.38	21.53	13.83	7.71	12.51	30.78	22.01	22.92
6	Palakkad	153.00	72.95	105.14	60.07	54.54	40.21	51.87	21.38	42.91	98.55	47.26	71.08
7	Thrissur	44.16	12.74	28.28	112.38	40.81	50.71	11.64	4.25	8.29	19.60	6.88	12.11
8	Ernakulam	40.04	31.67	26.20	51.27	53.31	45.25	10.74	9.23	9.28	26.83	23.24	20.20
9	Idukki	20.27	20.70	30.53	21.72	32.70	26.35	1.33	0.61	0.99	8.93	10.16	11.93
10	Kottayam	49.30	56.96	55.82	19.58	37.86	3.61	23.89	24.20	24.80	36.79	42.00	39.58
11	Alappuzha	67.73	33.93	43.19	30.87	77.79	0.00	12.00	5.90	8.81	13.49	8.83	9.02
12	Pathanamthitta	81.25	80.04	72.65	100.19	96.57	0.00	22.28	11.34	15.13	56.36	51.03	48.22
13	Kollam	105.18	104.60	105.00	66.83	66.83	66.83	3.74	1.53	2.53	34.27	32.88	33.53
14	Thiruvananthapuram	45.71	50.69	53.99	98.30	102.56	152.38	4.26	4.37	4.48	23.71	25.56	30.53
	Kerala	66.39	51.62	56.67	49.53	51.54	46.61	17.68	8.74	13.03	34.46	24.56	28.42

Table 7.12

District wise distribution of number& area (Ha) of crops treated with straight fertilizers

Sl. No.	Districts	Irrigation status	Growing one more crop		Treated with Urea		Treated with Super Phosphate (single)		Treated with Murate of Potash		Treated with Di-Ammonium Phosphate	
			Number	Area	Number	Area	Number	Area	Number	Area	Number	Area
1	Kasargode	Irrigated	243980	37911	25038	1017	10	11	27793	4463	0	0
		Un-irrigated	210159	41140	2679	706	0	0	4493	1350	0	0
2	Kannur	Irrigated	313853	13504	20372	877	1510	51	11681	670	1330	22
		Un-irrigated	427153	81198	28967	3404	1672	447	27498	3481	2614	823
3	Wayanad	Irrigated	73643	13509	21926	8448	5148	1251	16209	5489	56	21
		Un-irrigated	185621	66796	32028	11013	2455	933	23785	7835	7	72
4	Kozhikode	Irrigated	266360	16842	33152	4397	5085	477	25246	4006	3182	293
		Un-irrigated	621495	93884	26421	4172	11456	1885	22113	4638	1649	143
5	Malappuram	Irrigated	431863	27435	25757	6007	1602	265	15773	4634	44	37
		Un-irrigated	657868	55621	13613	3399	2891	1069	8602	3255	0	0
6	Palakkad	Irrigated	356541	58151	70655	41888	109	124	60175	39469	1312	170
		Un-irrigated	540118	88285	53093	32649	199	205	47930	33105	16	63
7	Thrissur	Irrigated	546125	57556	79919	17985	9036	1225	73967	17115	174	189
		Un-irrigated	646737	46953	19555	3884	7206	992	14087	3604	24	8
8	Ernakulam	Irrigated	362570	14372	18246	3503	1745	412	5049	3067	0	0
		Un-irrigated	526791	43588	10468	622	501	852	3360	340	0	0
9	Idukki	Irrigated	164020	32635	21014	10492	4427	690	14692	6176	2492	1330
		Un-irrigated	258039	90603	6544	2638	7579	1970	8764	2675	138	132
10	Kottayam	Irrigated	214947	22271	42316	17428	3793	796	34051	16968	2312	754
		Un-irrigated	431020	114701	30782	7719	1652	355	43823	9645	0	0
11	Alappuzha	Irrigated	290882	17878	11788	12913	161	192	7439	12428	7880	10601
		Un-irrigated	433744	10885	14978	613	1633	117	11977	578	9600	727
12	Pathanamthitta	Irrigated	180252	6036	18739	1728	12	5	17449	1776	25	8
		Un-irrigated	297075	61017	34101	4455	2481	304	28307	2905	1251	716
13	Kollam	Irrigated	272761	4079	10377	355	8	2	5113	106	0	0
		Un-irrigated	591937	32932	11457	236	0	0	6739	64	0	0
14	Thiruvananthapuram	Irrigated	455847	15680	29224	6622	144	93	5891	2219	0	0
		Un-irrigated	783566	92353	2112	429	228	214	13721	3141	10	26
Kerala		Irrigated	4173644	337859	428523	133660	32790	5594	320528	118586	18807	13425
		Un-irrigated	6611323	919956	286798	75939	39953	9343	265199	76616	15309	2710

Table 7.13

District wise crop wise, irrigation status wise average consumption of chemical fertilizers (kg/ha) in terms of NPK nutrients

Sl. No.	Districts	Irrigation status	Paddy			Coconut			Arecanut			Rubber		
			N	P	K	N	P	K	N	P	K	N	P	K
1	Kasargode	Irrigated	51.39	42.62	35.93	50.88	35.78	50.45	55.75	53.70	66.06	25.83	25.83	25.83
		Un-irrigated	49.42	12.56	17.50	50.01	33.47	33.73	59.86	59.86	59.86	50.06	50.06	56.81
2	Kannur	Irrigated	135.35	10.17	20.42	105.33	100.82	98.03	141.04	203.12	135.19	0.00	0.00	0.00
		Un-irrigated	84.38	12.57	11.17	140.24	69.52	65.34	191.75	71.89	130.84	84.31	90.72	47.99
3	Wayanad	Irrigated	87.71	15.08	42.19	167.33	24.93	136.60	382.28	7.01	488.58	0.00	0.00	0.00
		Un-irrigated	52.61	10.43	45.54	242.01	8.73	87.77	295.06	7.75	68.90	60.84	41.15	35.84
4	Kozhikode	Irrigated	130.49	33.43	97.16	498.66	186.98	278.59	387.23	387.92	396.19	142.67	142.67	0.00
		Un-irrigated	38.55	42.03	12.69	156.83	40.46	126.86	579.55	224.61	151.52	69.92	94.70	50.08
5	Malappuram	Irrigated	186.61	13.61	119.43	88.50	63.15	132.26	138.06	82.46	120.52	84.35	84.35	84.35
		Un-irrigated	95.93	24.01	40.34	176.92	43.09	125.67	212.72	97.22	159.18	108.89	90.99	81.55
6	Palakkad	Irrigated	128.74	36.44	63.75	126.31	60.48	99.82	527.82	328.02	533.69	51.67	51.67	0.00
		Un-irrigated	135.78	38.56	68.19	340.85	152.28	279.49	767.59	293.87	643.20	168.50	124.16	147.13
7	Thrissur	Irrigated	158.90	38.27	76.36	187.57	54.76	154.44	98.56	77.88	93.65	0.00	0.00	0.00
		Un-irrigated	74.04	15.36	44.52	232.93	66.97	175.84	205.00	102.50	252.50	110.99	50.81	52.84
8	Ernakulam	Irrigated	85.60	31.05	30.53	101.68	44.00	44.77	21.82	40.91	6.36	49.44	49.44	49.44
		Un-irrigated	56.00	16.00	38.00	116.33	47.16	74.17	54.29	54.29	47.14	89.15	81.41	71.79
9	Idukki	Irrigated	81.40	31.68	42.71	29.76	102.44	23.90	0.00	10.00	0.00	16.47	33.46	13.92
		Un-irrigated	0.00	0.00	0.00	81.27	96.62	51.18	0.00	0.00	0.00	39.81	66.04	76.48
10	Kottayam	Irrigated	186.94	94.77	125.47	49.19	80.62	92.17	0.00	0.00	53.33	0.00	0.00	0.00
		Un-irrigated	0.00	0.00	0.00	72.51	92.15	107.30	123.79	244.83	232.41	97.75	113.52	97.95
11	Alappuzha	Irrigated	143.33	91.10	82.71	206.41	66.09	46.09	0.00	0.00	0.00	0.00	0.00	0.00
		Un-irrigated	73.11	37.45	54.66	197.50	99.95	145.86	0.00	0.00	0.00	54.98	61.12	27.93
12	Pathanamthitta	Irrigated	100.16	62.78	87.37	110.76	74.09	191.21	0.00	0.00	0.00	0.00	0.00	0.00
		Un-irrigated	0.00	0.00	0.00	156.88	77.38	126.69	0.00	0.00	0.00	113.36	107.33	97.42
13	Kollam	Irrigated	349.31	1.03	5.52	186.00	159.67	176.67	0.00	0.00	0.00	0.00	0.00	0.00
		Un-irrigated	14.13	0.00	0.00	122.78	116.04	100.05	53.33	53.33	53.33	88.89	88.89	88.89
14	Thiruvananthapuram	Irrigated	68.22	6.09	16.14	72.06	80.59	62.94	0.00	0.00	0.00	0.00	0.00	0.00
		Un-irrigated	0.00	0.00	0.00	121.19	131.42	131.67	0.00	0.00	0.00	115.01	130.04	155.83
Kerala		Irrigated	140.06	49.93	76.31	131.76	60.56	105.45	149.81	111.10	157.80	31.95	43.07	25.08
		Un-irrigated	124.68	34.86	61.70	170.49	70.95	129.47	443.46	135.09	283.82	100.00	99.11	94.76

Table 7.14
District wise percentage of area irrigated treated with different organic manure and green manure

Sl. No.	Districts	FYM/ Composit/ Biogas manure	Oil cake	Other organic manure	Green manure
1	Kasargode	45.51	6.04	14.46	25.29
2	Kannur	52.00	6.41	9.32	9.14
3	Wayanad	52.98	1.33	7.42	1.50
4	Kozhikode	46.36	7.14	38.94	18.02
5	Malappuram	32.50	2.33	35.05	16.83
6	Palakkad	32.30	0.74	6.58	5.49
7	Thrissur	51.92	8.84	20.33	20.20
8	Ernakulam	27.87	5.50	12.33	2.18
9	Idukki	43.11	23.78	16.49	0.02
10	Kottayam	13.17	0.89	4.08	0.66
11	Alappuzha	18.55	3.57	10.75	0.81
12	Pathanamthitta	22.76	7.11	9.31	0.76
13	Kollam	7.99	1.18	34.62	0.00
14	Thiruvananthapuram	5.94	0.27	13.74	0.46
	Kerala	36.64	6.10	15.85	10.13

Table 7.15
District wise percentage of area un-irrigated treated with different organic manure and green manure

Sl. No.	Districts	FYM/ Composit/ Biogas manure	Oil cake	Other organic manure	Green manure
1	Kasargode	24.42	0.31	3.46	1.99
2	Kannur	23.35	3.21	4.81	5.21
3	Wayanad	23.00	0.61	2.98	1.50
4	Kozhikode	35.42	6.09	22.09	15.85
5	Malappuram	15.22	0.65	23.56	8.72
6	Palakkad	30.73	0.09	5.80	4.27
7	Thrissur	16.28	2.36	2.87	5.55
8	Ernakulam	15.25	0.54	2.64	0.63
9	Idukki	13.83	1.40	2.33	0.20
10	Kottayam	22.59	0.16	4.87	0.62
11	Alappuzha	19.82	1.62	3.42	2.13
12	Pathananthitta	12.69	0.19	3.93	0.51
13	Kollam	6.82	0.02	4.73	0.14
14	Thiruvananthapuram	2.96	0.004	1.69	0.38
	Kerala	19.65	1.35	6.78	3.72

Table 7.16

District wise percentage number of agricultural machinery/ implements owned & used by operational holdings

Sl. No.	Districts	Total number of operational holdings	Chaff cutter	Hand operated sprayer/ duster	Hand hoe	Hand wheel hoe	Blade hoe	Power sprayer	Power tillers	Agriculture Tractor	Brush cutter	Diesel engine pump set	Electric pump set	Sprinkler irrigation set	Drip irrigation set
1	Kasargode	271776	0.05	2.68	72.75	3.53	37.64	5.04	0.00	0.06	0.93	0.14	70.59	8.10	0.67
2	Kannur	554935	0.00	0.05	38.83	0.91	3.05	0.05	0.02	0.01	0.36	0.02	12.44	0.01	0.00
3	Wayanad	189662	5.65	1.74	72.63	3.41	18.22	0.47	0.82	0.97	3.21	0.23	1.90	0.14	0.01
4	Kozhikode	682085	0.00	0.74	41.97	0.23	20.90	0.04	0.02	0.24	0.31	0.01	4.30	0.00	0.00
5	Malappuram	814211	0.00	0.45	47.29	0.65	0.96	0.04	0.01	0.20	0.31	0.51	10.56	0.01	0.00
6	Palakkad	600928	0.01	0.96	37.11	0.02	22.16	0.81	0.04	0.13	1.29	0.12	7.79	0.04	0.13
7	Thrissur	715538	0.00	2.48	79.63	2.55	19.69	0.61	0.03	0.02	0.08	0.25	55.49	0.66	0.21
8	Ernakulam	703647	0.01	1.50	47.07	1.16	2.84	0.41	0.00	0.01	0.26	0.33	13.91	0.07	0.01
9	Idukki	270669	0.19	5.93	34.12	0.08	2.79	4.61	0.00	0.00	0.68	2.02	11.75	1.53	0.52
10	Kottayam	434319	0.01	2.98	59.33	2.41	37.31	0.91	0.06	0.01	1.29	0.04	10.38	0.08	0.27
11	Alappuzha	518578	0.01	0.67	25.42	1.07	8.66	0.61	0.29	0.29	0.02	0.07	17.62	0.78	0.29
12	Pathanamthitta	306342	0.00	0.03	20.87	0.44	9.76	0.06	0.01	0.00	0.83	0.02	0.06	0.00	0.00
13	Kollam	636038	0.00	0.28	29.47	0.02	0.50	0.26	0.00	0.01	0.00	0.00	8.92	0.01	0.01
14	Thiruvananthapuram	821292	0.00	0.24	36.18	0.23	7.87	0.24	0.23	0.00	0.00	0.00	8.14	0.00	0.00
	Kerala	7520020	0.15	1.19	44.90	0.98	12.11	0.68	0.08	0.11	0.47	0.21	16.14	0.48	0.11

Table 7.17
District wise percentage number of operational holders availing institutional credit

Sl. No.	Size Group	Total number of operational holdings	Estimated number of operational holdings availing institutional credit	Percentage of operational holdings availing institutional credit	Percentage of operational holdings availing credit from			
					PACS	PLDB/ SLDB	RRBB	CBB
1	Kasargode	271776	98502	36.24	6.21	24.37	1.45	4.78
2	Kannur	554935	25174	4.54	2.10	0.70	0.76	1.10
3	Wayanad	189662	21097	11.12	3.95	0.06	4.81	2.87
4	Kozhikode	682085	17866	2.62	1.85	0.24	0.08	0.77
5	Malappuram	814211	16102	1.98	1.49	0.03	0.45	0.09
6	Palakkad	600928	27024	4.50	3.25	0.05	0.35	1.04
7	Thrissur	715538	40238	5.62	2.83	0.02	0.44	2.46
8	Ernakulam	703647	19808	2.82	2.02	0.03	0.03	0.88
9	Idukki	270669	17497	6.46	2.27	0.06	1.08	3.35
10	Kottayam	434319	44512	10.25	4.06	0.08	1.22	5.60
11	Alappuzha	518578	9430	1.82	1.64	0.01	0.02	0.37
12	Pathanamthitta	306342	10080	3.29	2.43	1.15	0.04	0.47
13	Kollam	636038	6116	0.96	0.93	0.01	0.02	0.04
14	Thiruvananthapuram	821292	18050	2.20	1.50	0.00	0.01	0.70
	Kerala	7520020	371496	4.94	2.30	1.02	0.47	1.37

Table 7.18

District wise number of operational holdings using improved quality of seeds for agricultural purpose

Sl. No.	Size Group	Total no. of operational holdings	No. of holdings using certified seeds	No. of holdings using hybrid seeds	No. of holdings took foundation prog.
1	Kasargode	271776	0	2409	0
2	Kannur	554935	1547	31546	0
3	Wayanad	189662	674	1733	0
4	Kozhikode	682085	40	0	0
5	Malappuram	814211	67	0	29
6	Palakkad	600928	4435	15474	0
7	Thrissur	715538	22097	21033	92
8	Ernakulam	703647	120	35566	40
9	Idukki	270669	0	32713	26
10	Kottayam	434319	0	9160	23
11	Alappuzha	518578	5355	502	22
12	Pathanamthitta	306342	15964	52	34
13	Kollam	636038	0	21250	0
14	Thiruvananthapuram	821292	5744	7688	19
	Kerala	7520020	56043	179126	285

Table 7.19

District wise percentage distribution of operational holdings in various size groups of holdings by usual methods of pest control

Sl. No.	Size Group	Total no. of operational holdings	Percentage of holdings which						
			adopted pest control methods	Agronomic & cultural practices	Mechanical control	Biological methods	Chemical methods	Others	No efforts/ practices
1	Kasargode	271776	75582	0	0	6771	18092	51134	196194
2	Kannur	554935	138167	31530	1419	1376	3512	100599	416768
3	Wayanad	189662	173934	1720	204	2777	3418	165823	15728
4	Kozhikode	682085	29311	14210	325	1632	64	13217	652774
5	Malappuram	814211	76420	23704	29	8105	5338	42124	737791
6	Palakkad	600928	96250	13878	375	9393	46744	28534	504678
7	Thrissur	715538	205129	91096	8860	10028	38844	75734	510409
8	Ernakulam	703647	74918	10988	5038	3297	4747	55660	628729
9	Idukki	270669	111505	17521	34	661	37004	57968	159164
10	Kottayam	434319	178622	57424	13439	6666	24852	89276	255697
11	Alappuzha	518578	142276	18689	53747	28368	16653	54502	376302
12	Pathanamthitta	306342	68895	8838	34	9898	13382	39513	237447
13	Kollam	636038	152892	134689	3437	4779	0	13422	483146
14	Thiruvananthapuram	821292	378943	275925	1905	3782	11841	102980	442349
	Kerala	7520020	1902844	700212	88846	97533	224491	890486	5617176

Table 7.20

District wise percentage distribution of operational holders in each size group by educational status

Sl. No.	Size Group	Illiterate	Up to Class V	Middle	Secondary	Senior Secondary	Technical Diploma below degree level	Graduate &above
1	Kasargode	1.73	21.45	29.18	34.88	7.93	1.80	3.03
2	Kannur	0.68	15.23	26.04	37.09	10.54	2.76	7.65
3	Wayanad	2.08	22.45	23.42	34.95	12.61	2.67	1.83
4	Kozhikode	2.50	17.03	20.11	42.54	7.01	4.18	6.63
5	Malappuram	3.20	26.31	24.28	34.96	7.48	0.54	3.24
6	Palakkad	7.08	23.05	22.31	33.43	8.82	2.30	3.03
7	Thrissur	1.74	11.86	23.38	41.21	11.58	3.74	6.48
8	Ernakulam	0.39	18.67	14.11	36.97	13.24	4.97	11.64
9	Idukki	0.51	16.13	26.06	38.09	12.99	3.12	3.11
10	Kottayam	0.00	7.60	21.94	43.32	14.37	3.38	9.38
11	Alappuzha	0.76	13.89	26.57	43.06	10.28	3.39	2.07
12	Pathanamthitta	1.51	11.53	13.52	40.98	19.06	5.62	7.77
13	Kollam	1.49	12.18	20.22	39.21	17.53	3.29	6.09
14	Thiruvananthapuram	1.38	7.59	16.41	43.71	16.48	5.78	8.64
	Kerala	1.92	15.88	21.44	39.18	11.94	3.46	6.19

Table 7.21
District wise percentage distribution of operational holders into different age groups

Sl. No.	Size Group	Percentage of operational holders in age groups						Average age (yrs)
		up to 30 yrs	31 - 40 yrs	41 - 50 yrs	51 - 60 yrs	61 - 65 yrs	66 yrs & above	
1	Kasargode	0.85	9.87	31.15	35.35	11.98	10.80	52.61
2	Kannur	0.22	12.76	29.19	33.15	12.52	12.14	52.66
3	Wayanad	0.04	13.59	39.47	28.23	10.49	8.18	50.8
4	Kozhikode	0.91	8.44	30.30	33.86	13.33	13.15	53.4
5	Malappuram	0.95	15.49	30.32	28.89	14.62	9.74	51.58
6	Palakkad	0.21	11.41	29.68	33.29	12.10	13.30	53.02
7	Thrissur	0.19	12.15	27.31	32.63	12.01	15.71	53.46
8	Ernakulam	0.95	15.56	31.82	30.36	10.35	10.96	51.27
9	Idukki	1.21	8.69	32.80	37.62	10.97	8.72	52.19
10	Kottayam	0.25	10.14	23.79	37.45	14.76	13.61	54.1
11	Alappuzha	0.25	12.83	31.61	28.38	13.61	13.32	52.65
12	Pathanamthitta	0.76	12.52	23.16	34.10	14.26	15.21	53.71
13	Kollam	0.74	15.87	36.15	31.76	9.58	5.89	50.05
14	Thiruvananthapuram	0.92	13.59	27.49	36.80	11.38	9.82	52.02
	Kerala	0.63	12.73	29.99	32.81	12.31	11.53	52.35

Table 7.22
District wise percentage distribution of operational holders by family size of households

Sl. No.	Size Group	Percentage of operational holders with family size in the family size category							Average size (no.)
		up to 3	4 to 6	7 to 9	10 to 12	13 to 15	16 to 19	20 & above	
1	Kasargode	18.25	66.18	11.00	4.07	0.50	0.00	0.00	5.07
2	Kannur	27.18	63.98	7.20	0.72	0.92	0.00	0.00	4.53
3	Wayanad	19.52	75.59	3.48	0.80	0.62	0.00	0.00	4.62
4	Kozhikode	27.50	64.69	6.39	1.41	0.01	0.00	0.00	4.45
5	Malappuram	22.18	64.07	10.69	2.69	0.34	0.02	0.00	4.85
6	Palakkad	36.49	56.80	5.73	0.93	0.05	0.00	0.00	4.14
7	Thrissur	27.75	67.25	3.81	1.17	0.02	0.00	0.00	4.35
8	Ernakulam	33.00	64.38	2.41	0.20	0.00	0.00	0.00	4.09
9	Idukki	30.33	66.34	2.86	0.42	0.04	0.00	0.00	4.2
10	Kottayam	28.41	68.98	2.59	0.01	0.01	0.00	0.00	4.23
11	Alappuzha	35.17	62.01	2.82	0.00	0.00	0.00	0.00	4.03
12	Pathanamthitta	37.58	60.79	1.62	0.00	0.00	0.00	0.00	3.92
13	Kollam	33.18	63.05	3.52	0.25	0.00	0.00	0.00	4.13
14	Thiruvananthapuram	50.65	47.24	1.89	0.23	0.00	0.00	0.00	3.55
	Kerala	31.72	62.40	4.82	0.91	0.15	0.002	0.00	4.26

APPENDIX 2

SCHEDULES

List of Schedules

GOVERNMENT OF KERALA

Department of Economics and Statistics

Input Survey 2016-17

Schedule – 0: Information on Number of Wards selected in Block/Municipality/Municipal Corporation

1.State	1	3	2. District			3. Total Number of Block/ Municipality/Corporation/ in the District			

SSl. No	Name of Block/Municipality/Corporation	Code of B/ M/ C*	Number of Ward in B/ M/C*	No. of Wards selected for Input Survey	Code & name of panchayat &Name of Ward	Code (Ward No.)
	2	*3*	*4*	*5*	*6*	*7*

B:Block, M:Muncipality, C:Corporation.

Signature of State level Census Authority

GOVERNMENT OF KERALA *(only one copy to be prepared)*

Department of Economics and Statistics

Input Survey 2016-17

Schedule – 1: List of Operational Holdings and record of selection in the selected ward by type of size groups and area operated

1 State 1 3 2 District 3 Taluk

4 Block/Mun./Corp 5. Ward 6 R.I.Circle N A

7 Panchayat 8. Name of Enumerator :

Sl. No. of Operational Holder as per Col 9 of L1	Names of selected Operational Holder (Col. 10 of Sch. L1)	Area Operated (in cents) (Col. 17 of L1)	Size Class									
			Marginal 1-247cents		Small 248-493 cents		Semi-medium 494-987 cents		Medium 988-2469 cents		Large 2470 & above	
			Sl. No.	Tick mark	Sl. No.	Tick mark	Sl. No.	Tick mark	Sl. No.	Tick mark	Sl. No.	Tick mark
1	*1A*	*2*	*3*	4	*5*	6	7	8	*9*	10	*11*	*12*

Note: 1) The name of selected operational holders may be copied in Col.2 from updated L-1

2) The sum of Col. 3,5,7,9 & 11 = No. of holders in the frame.

Signature of Enumerator
Name & Designation

Signature of Supervisor
Name & Designation

GOVERNMENT OF KERALA

Department of Economics and Statistics

Input Survey 2016-17

Schedule 2.0: Information on number of total and selected Holdings in sample wards in Block /Municipality/Corporation

1. State [1][3] 2. District [ ][ ] 3 Block/Municipality/Corporation [ ][ ][ ]

Sl. No.	Name of sample ward and panchayath (with code in bracket)	Selected Ward No	Number of total & selected holdings in the sample ward									
			Marginal (below 1.0 ha) 1 – 247 cents		Small (1-1.99 ha) 248-493 cents		Semi-medium (2-3.99ha) 494 – 987 cents		Medium (4-9.99 ha) 988 – 2469 cents		Large (10ha & above) 2470 cents and above	
			Total	No. selected	Total	No. selected	Total	No. selected	Total	No. selected	Total	No. selected
1	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***10***	***11***	***12***	***13***

Signature of Taluk Level Census Officer
Name & Designation

Signature of District Level Census Authority
Name & Designation

GOVERNMENT OF KERALA

Department of Economics and Statistics

Input Survey 2016-17

Schedule 2.1: Parcel wise details of net area sown under multiple cropping according to Irrigated and unirrigated crops during the Agricultural Year 2016-17 (July 2016 and June 2017) (Autumn 2016, Winter 2016-17 & Summer 2017)

Block-A: Identification Details

1. State: 1 3
2. District:
3. Taluk:
4. Block:
5. Panchayath/ Municipality/ Corporation — Name: ; Code:
6. Ward No.
7. Name of the operational holder with father's/husband's name:
8. Sl. No. of the operational holder as in Col. 1 of Sch-I:
9. Total area operated
10. Size Group (1-5)
11. Unit used for reporting area: Cent
12. Conversion factor of area unit to hectare (in 3 decimal places) [247.1 cent = 1 hectare]

Block – B & C

Sl. No. of Parcel	Identification particulars of the parcel/survey number	Area of the parcel (7+8+9)	Location of the Parcel *			Uncultivated area	Area under current fallow	Net Area Sown			Net Unirri-gated Area		Net Irrigated Area								Gross Cropped area			Remarks
														Cropped Twice			Cropped Thrice or more							
			Within Sample ward	Outside the sample ward but within Block/ Municipality/ Corporation	Outside the Block/ Municipality/ Corporation but within District			Total (col.10 + col.11)	Unirrigated (col.12+col.13)	Irrigated (col.14+col.15+col.18)	Cropped once	Cropped more than once	Cropped Once	Total (16+17)	One crop irrigated	Both crop irrigated	Total (19+20+21)	One crop irrigated	Two crop irrigated	Three or more crop irrigated	Gross Unirrigated area	Gross Irrigated area	Total (Col. 22+23)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Total																								

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

** Please tick the appropriate column from Col. 4, 5 or 6*

i) Col. 1(Total) =Total of tick mark in Col. 4 + Col. 5 + Col. 6

ii) Col. 3 (Total) = Sl.No.10 of Block A = Col.7+Col.8+Col.9

iii) Col. 22 = Col. 12 + 2*Col. 13 + Col. 16+2*Col.19+Col.20

iv) Col. 23 = Col. 14 + Col. 16+2*Col.17+Col.19+2*Col.20+3*Col.21

Note: Cols. 22 and 23 will be filled up on the basis of 'Totals' given in cols. 12 to 21 after applying the above-mentioned formulae

Signature of Enumerator
Name & Designation

Signature of Supervisor
Name & Designation

GOVERNMENT OF KERALA

Department of Economics and Statistics

Input Survey 2016-17

Schedule – 2.2.1: Area under irrigated crops and usage of chemical fertilizers, manures and Pesticides during Agricultural Year 2016-17 (Autumn 2016, Winter 2016-17 & Summer 2017)

Block-A

-

1. State : 13
2. District :
3. Taluk :
4. Block:
5. Panchayath/ Municipality/ Corporation — Name:
6. Ward No:
7. Name of operational holder with father's / husband's name :
8. Sl.No. of operational holder as in Col.1 of Schedule-I :
9. Total area operated:
10. Size Group (1-5):
11. Unit used for reporting area: Cent
12. Conversion factor of area unit to hectare (in 3 decimal places) [247.1 Cent = 1 hectare]:
13. Season Code: Autumn: 1, Winter: 2, Summer: 3, Full Year: 4
14. Irrigation Status of crops
    - Irrigated crops 1

Block B

Sl.No	Items	Unirrigated Crops															Total Unirrigated Crops		
		Crop I: (Code)			Crop 2: (Code)			Crop 3: (Code)			Crop 4: (Code)			Crop 5: (Code)					
		HYV	Hybrid	Others	HYV	Hybrid	Others	HYV	Hybrid	Others	HYV	Hybrid	Others	HYV	Hybrid	Others	HYV	Hybrid	Others
		Code.1	Code. 2	Code 3	Code1	Code 2	Code 3	Code1	Code 2	Code 3	Code1	Code 2	Code 3	Code1	Code 2	Code 3	Code1	Code 2	Code 3
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Area irrigated under crop																		
2	Area treated with one or more chemical fertilizers under crop																		
3	Particulars of area treated with different chemical fertilizers under crop																		
	(a) Urea (02)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	b) Calcium Ammonium Nitrate (CAN) (04)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	c) Muriate of Potash (MOP)(11)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	d) Super Phosphate(SP) (05, 06)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	e) Tripple Super Phosphate(07)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	f) Di-Ammonium Phosphate (DAP)(13)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	(g) Zinc Sulphate (51)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	h)Complex/Mixed [Code] (……)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	i)Complex/Mixed [Code] (……)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		

	j)Complex/Mixed [Code] (……)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	k)Complex/Mixed [Code] (……)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
4	***Particulars of Area treated with different organic manure under crop***																		
	a) Farm Yard Manure (FYM)/Compost/ Bio-gas manure(80)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	b) Oil Cakes [81]																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	c) Other organic manure [82]																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
5	***Area treated with Green Manure (in cents) [87]***																		
6	**Bio Fertilizers**																		
	Area treated with Rhizobium [83] (cents)																		
	Area treated with Azetobactor (cents) [84]																		
	Area treated with Blue green algae (cents) [85]																		
	Area treated with Phosphate Solubilizing Bacteria (PSB)[86]																		
	Area treated with Azospirillum [88]																		
7	Area treated with Chemical pesticides [89]																		
8	Area treated with Bio-pesticides [90]																		

1. Net area under a crop < = net sown area
2. Net irrigated area under a crop < = net irrigated area
3. Area treated with one or more chemical fertilizers under a crop > = area treated with any specific chemical fertilizer under that crop
4. Area treated with one or more chemical fertilizer under a crop < = area under that crop.

GOVERNMENT OF KERALA

Department of Economics and Statistics

Input Survey 2016-17

Schedule – 2.2.2Area under unirrigated crops and usage of chemical fertilizers, manures and Pesticides during Agricultural Year 2016-17 (Autumn 2016, Winter 2016-17 & Summer 2017)

Block-A

1. State : 1 3
2. District :
3. Taluk :
4. Block:
5. Panchayath/ Municipality/ Corporation — Name:
6. Ward No:
7. Name of operational holder with father's / husband's name :
8. Sl.No. of operational holder as in Col.1 of Schedule-I :
9. Total area operated:
10. Size Group (1-5):
11. Unit used for reporting area: Cent
12. Conversion factor of area unit to hectare (in 3 decimal places) [247.1 Cent = 1 hectare]:
13. Season Code: Autumn: 1, Winter: 2, Summer: 3, Full Year: 4
14. Irrigation Status of crops
    - Unirrigated crops 2

Block B

Sl.No	Items	Unirrigated Crops															Total Unirrigated Crops		
		Crop I: (Code)			Crop 2: (Code)			Crop 3: (Code)			Crop 4: (Code)			Crop 5: (Code)					
		HYV	Hybrid	Others	HYV	Hybrid	Others	HYV	Hybrid	Others	HYV	Hybrid	Others	HYV	Hybrid	Others	HYV	Hybrid	Others
		Code.1	Code. 2	Code 3	Code1	Code 2	Code 3	Code1	Code 2	Code 3	Code1	Code 2	Code 3	Code1	Code 2	Code 3	Code1	Code 2	Code 3
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Area unirrigated under crop																		
2	Area treated with one or more chemical fertilizers under crop																		
3	Particulars of area treated with different chemical fertilizers under crop																		
	(a) Urea (02)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	b) Calcium Ammonium Nitrate (CAN) (04)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	c) Muriate of Potash (MOP)(11)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	d) Super Phosphate(SP) (05, 06)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	e) Tripple Super Phosphate(07)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	f) Di-Ammonium Phosphate (DAP)(13)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	(g) Zinc Sulphate (51)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	h)Complex/Mixed [Code] (……)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	i)Complex/Mixed [Code] (……)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		

	j)Complex/Mixed [Code] (……)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	k)Complex/Mixed [Code] (……)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
4	***Particulars of Area treated with different organic manure under crop***																		
	a) Farm Yard Manure (FYM)/Compost/ Bio-gas manure(80)																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	b) Oil Cakes [81]																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
	c) Other organic manure [82]																		
	1 Area treated (cents)																		
	2. Quantity (kg.)																		
5	***Area treated with Green Manure (in cents) [87]***																		
6	**Bio Fertilizers**																		
	Area treated with Rhizobium [83] (cents)																		
	Area treated with Azetobactor (cents) [84]																		
	Area treated with Blue green algae (cents) [85]																		
	Area treated with Phosphate Solubilizing Bacteria [86]																		
	Area treated with Azospirillum [88]																		
7	Area treated with Chemical pesticides [89]																		
8	Area treated with Bio-pesticides[90]																		

1. Net area under a crop < = net sown area
2. Net unirrigated area under a crop < = net unirrigated area
3. Area treated with one or more chemical fertilizers under a crop > = area treated with any specific chemical fertilizer under that crop
4. Area treated with one or more chemical fertilizer under a crop < = area under that crop.

Name & Signature of Enumerator

Name & Signature of Supervisor

GOVERNMENT OF KERALA

Department of Economics and Statistics

Input Survey 2016-17

SCHEDULE: 2.3 - Agricultural implements/ machines/ equipments used by operational holder during 2016-17

Block-A

1.	State	13	7.	Name of the operational holder with father's/husband's name:	
2.	District		8.	Sl. No. of the operational holder as in Col. 1 of Sch-I:	
3.	Taluk		9.	Total area operated	
4.	Block		10.	Size Group (1-5)	
5.	Name &code of P/ M/ C		11.	Unit used for reporting area	Cent
6.	Ward No.		12.	Conversion factor of area unit to hectare (in 3 decimal places) [247.1 cents = 1 hectare]	

Block-B

S.No.	Item	Codes	Whether used		
			Yes		No
			Owned	Hired	
1	2	3	4	5	6
A.	***MANUAL MACHINES/EQUIPMENTS***				
	1. Hand seed fertilizer drill	101			
	2. Pedal operated thresher	102			
	3. Winnowing fan	103			
	4. Hand maize sheller	104			
	5. Chaff cutter	105			
	6. Hand-operated knapsack sprayer/duster	106			
	7. Hand-hoe	107			
	8. Hand wheel-hoe	108			
	9. Blade-hoe	109			
	10. Paddy transplanter	110			
	11. Cono weeder	111			
	12. Paddy drum seeder	112			
	13. Sugarcane crusher	113			
	14. Others	188			
B.	***ANIMAL-DRAWN IMPLEMENTS***				
	15. Wooden plough	201			
	16. Mould Board plough	202			
	17. Disc harrow	203			
	18. Cultivator (Triphali)	204			
	19. Seed-cum -fertilizer drill/seed drill	205			
	20. Levelling karah	206			
	21. Seed planter	207			
	22. Bund former	208			
	23. Potato/groundnut digger	209			

S.No.	Item	Codes	Whether used		
			Yes		No
			Owned	Hired	
1	2	3	4	5	6
	24. Animal drawn puddler	210			
	25. Others	288			
C.	***POWERED EQUIPMENTS/MACHINES***				
	26. Power sprayer	301			
	27. Power tillers	302			
	28. Agricultural tractors	303			
	29. Tractor drawn mould board plough	304			
	30. Tractor drawn disc harrow	305			
	31. Tractor drawn seed drill/seed-cum-fertilizer drill	306			
	32. Tractor drawn planter	307			
	33. Tractor drawn leveller	308			
	34. Tractor drawn potato digger	309			
	35. Power threshers (wheat, paddy, multicrop)	310			
	36. Power chaff cutter	311			
	37. Power cane crusher	312			
	38. Combine harvester (tractor powered)	313			
	39. Combine harvester (self-propelled)	314			
	40. Cultivator (tractor-drawn)	315			
	41. Rotavator	316			
	42. Cage wheels used for puddling	317			
	43. Self-propelled reaper	318			
	44. Power maize sheller	319			
	45. Groundnut decorticator	320			
	46. Tractor mounted reaper	321			
	47. Raised – bed planter / BBF planter (tractor drawn)	322			
	48. Zero – Till Seed – cum – Fertilizer Drill (tractor drawn)	323			
	49. Strip – Till – Drill (tractor drawn)	324			
	50. Sugarcane cutter planter (tractor drawn)	325			
	51. Vegetable transplanter (tractor driven)	326			
	52. Aero-blast sprayer	327			
	53. Power weeder (self propelled)	328			
	54. Pneumatic planter (tractor drawn)	329			
	55. Self propelled rice transplanter (both riding type and walk behind)	330			
	56. Straw combines (tractor drawn)	331			
	57. Tractor drawn disc plough	332			
	58. The laser land leveler	333			
	59. Straw baler	334			
	60. Reaper binder	335			
	61. Sugarcane harvester	336			

S.No.	Item	Codes	Whether used		
			Yes		No
			Owned	Hired	
1	2	3	4	5	6
	62. Tractor mounted post hole digger	337			
	63. Happy seeder	338			
	64. Tractor mounted spray pump	339			
	65. Brush cutter	340			
	66. Chain saw	341			
	67. Portable augur digger	342			
	68. Hedge trimmers	343			
	69. Diesel engine pump set	344			
	70. Electric pump sets	345			
	71. Sprinkler irrigation sets/micro sprinkler/ rain gun	346			
	72. Drip irrigation set	347			
	73. Solar pumping set	348			
	74. Others	349			

Note: ***Codes for Col.4, 5 & 6.***

1. Agricultural implements/machines/equipments owned & used by operational holder ***Code – 1*** will be recorded in Col.4.
2. Used on hire basis ***Code – 2*** will be recorded in Col.5.
3. Not used any Agricultural implements etc. ***Code – 3*** will be recorded in Col.6

Name & Signature of Enumerator

Name & Signature of Supervisor

GOVERNMENT OF KERALA

Department of Economics and Statistics

Input Survey 2016-17

SCHEDULE: 2.4 - Agricultural Credit availed of by operational holder during 2016-17.

Block-A

1.	State	13	7.	Name of the operational holder with father's/husband's name:	
2.	District		8.	Sl. No. of the operational holder as in Col. 1 of Sch-I:	
3.	Taluk		9.	Total area operated	
4.	Block		10.	Size Group (1-5)	
5.	Name &code of P/ M/ C		11.	Unit used for reporting area	Cent
6.	Ward No.		12.	Conversion factor of area unit to hectare (in 3 decimal places) [247.1 cents = 1 hectare]	

Block-B

Sl. No.	Source Code*	Short Terms (≤ 18 months) Code (1) Loan Taken (Rs)				Source Code*	Loan Taken (Rs)	
		For fertilizer	For other Input	Received in Cash	Total (Col 3+4+5)		Medium Term (> 18 months < 5 years) Code (2)	Long term (≥ 5 years) Code (3)
1	2	3	4	5	6	7	8	9

Name & Signature of Enumerator

Name & Signature of Supervisor

***Source code:** (1) Primary Agricultural Credit Society; (2) Primary Land Development Bank/Branch of SLDB; (3) Regional Rural Bank Branch; (4) Commercial Bank Branch.

@**Term Code:** – (1) short-term loan; (2) – Medium-term loan; (3) – Long-term loan.

GOVERNMENT OF KERALA

Department of Economics and Statistics

Input Survey 2016-17

Schedule – 2.5: Information on use of Seeds, IPM and Soil testing during2016-17.

Block-A

1.	State		8.	Sl. No. of the operational holder as in Col. 1 of Sch-I:	
2.	District		9.	Total area operated	
3.	Taluk		10.	Size Group (1-5)	
4.	Block		11.	Unit used for reporting area	Cent
5.	Name &code of P/ M/ C		12.	Conversion factor of area unit to hectare (in 3 decimal places) [247.1 cents = 1 hectare]	
6.	Ward No.		13.	Age (as on the last birth day of holder) (in completed Year)	
7.	Name of the operational holder with father's/husband's name:		14.	Educational Qualification[⊗] of Holder	
			15.	Number of persons in household	

Block-B

Sl. No.	Item	Response		
1	2	3		
1.	Whether certified seed (blue tag) was used by operational holder for sowing during reference year	Yes - 1 No – 2		
2.	If Yes i.e. code 1 at Sl.No.1, then the name of crops for which certified seeds (blue tag) were used for sowing	**Variety**	**Crop**	
			Name	**Code**
3.	If code 1 at Sl.No.1, then name up to three sources from where certified seed (blue tag) was purchased. **Codes:** Deptt. of Agriculture – 1, Seed Corporation – 2, State Agriculture University Farms – 3, Cooperatives/ Federations – 4, Private Seed Companies – 5, Private Seed Dealers/Retailers – 6.			
4.	Name of crop for which hybrids were used for sowing	**Variety (hybrids)**	**Crop**	
			Name	**Code**

[⊗] **Codes for education (Item 14)**: Illiterate – 0; Primary (Standard V) – 1; Middle – 2; High School / Secondary
– 3; Senior Secondary / Pre-degree – 4; Technical diploma below degree level – 5; Graduate and above – 6.

Sl. No.	Item	Response		
1	2	3		
5.	Whether any seed quality problems were encountered?	Yes – 1 No – 2 .		☐
6.	If Yes in Question 5, then Nature of the Seed Qua lity problems encountered. **Codes for Quality problem**: (1) Varietal impurity; (2) Germination failure; (3) Physical impurity; (4) Insect damage; (5) Other	**Crop Name**	**Crop Code**	**Codes for Quality Problem**
7.	Was foundation / certified seed multiplication programme taken up by the operational holder?	Yes – 1 No – 2		☐
8.	What practices you followed for protection of your crop from pests? 1. Agronomic and cultural practices ☐ 2. Mechanical control ☐ 3. Biological, nature based or environmental methods ☐ 4. Chemical methods ☐ 5. Others (none of the above 4) ☐ 6. No effort/practices ☐			
9.	Whether soil testing ever done on the field of holder up to 30 June, 2017?	Yes – 1 No – 2		☐
10.	If yes in Col.9, please indicate area of the entire parcel(s) on which soil testing was carried out.			
11.	If yes in Sl. No..9, please tick the cell, if soil testing carried out during last five years (i.e., from 01/07/2012 to 30/06/2017). Else, leave the box as blank			☐

Name & Signature of Enumerator

Name & Signature of Supervisor

REPORT ON INPUT SURVEY (2016-17)

Agriculture Census Division, Department of Economics & Statistics, Thiruvananthapuram, Kerala.