

# **INFORM 2018**

## **Information for Agricultural Research Managers**

**Compiled  
by**

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## **Message of the Chairman**

Sri Lanka Council for Agricultural Research Policy (SLCARP) was established by the Act No. 47 of 1987, as the umbrella organization of the National Agricultural Research System (NARS) which operates within several Ministries. The main objective of the SLCARP is to create a more conducive environment for efficient and productive agricultural research in Sri Lanka. Therefore, SLCARP's mission is to ensure agricultural research, development and innovations are directed towards national development goals through policy formulation, facilitation, coordination, monitoring & evaluation and impact assessment. To carry out its' mission, SLCARP has 13 mandatory functions. Out of these 13 functions, one of the most important mandated functions is to make recommendations to the appropriate authorities on the financial, manpower and physical resources required by agricultural research institutions and establishments and on the terms and conditions of service of the staff of such institutions and establishments. Annually, a significant amount of government funds is allocated to research for 14 main and 19 sub Research Institutes in NARS, covering Food crops, Plantation crops, Floriculture, Fisheries, Livestock and Forestry Sectors. In that regard, SLCARP collects preceding year information on financial, manpower and research of the research institutes through a database called Information for Research Managers (INFORM). SLCARP is the only organization mandated with the above responsibility in the agricultural research sector. Therefore, collection, consolidation and analyzing of research-related information are essential and it can be used as a management tool for policymakers, researchers and treasury in making appropriate decisions. This analysis has generated many important messages to national policy planners as well as to the researchers to bring about necessary changes in the country's Agricultural Research agenda. Therefore, I am confident that information generated through INFORM will be of great use to the Agricultural Departments and Research Institutes, Ministries and Treasury in identifying gaps in resources required for a favorable research environment to allocate resources for more useful and urgent research agenda.

Professor Gamini Senanayake

Chairman

Sri Lanka Council for Agricultural Research Policy

## **Foreword**

Sri Lanka Council for Agricultural Research Policy (SLCAR) is the apex body for formulating agricultural research policies and priorities of agricultural research in Sri Lanka. It also prepares the National Agricultural Research Plan for the country and recommends to the government for funding.

The Council is also responsible for providing assistance to the National Agricultural Research System (NARS) in formulating their management strategies for the benefit of the various stakeholders. One such activity is the publishing of a database on NARS, information for Agricultural Research Managers (INFORM). This database provides first-hand information on the entire NARS in terms of the number of researchers, various experiments conducted by them and funds allocated for different activities. In the management process of agricultural research, the managers of NARS could use this information to develop a consolidated plan to strengthen the national research system. Since 1997, INFORM database has been published annually and made available to the entire NARS and to the policy makers. The information available from published reports, it is evident that the database is being used to decision making to facilitate the research process.

The INFORM data collection is a tedious process which is undertaken by INFORM Coordinators appointed by different institutes. The most difficult part of this process is to maintain the accuracy of data collection, which takes time and effort. The Council is very thankful to the INFORM coordinators for their contribution to this document. The Council is also appreciates the commitment and dedication of Dr (Mrs) P.C. Girihagama, Deputy Director –Research Management and Mr L.G. Hettiarachchi, Research Officer for analyzing and publishing the database.

Prabath Wimal Kumara

Secretary/Director

Sri Lanka Council for Agricultural Research Policy



## **Preface**

This publication, titled Information for Agricultural Research Managers is based on information provided to Sri Lanka Council for Agricultural Research Policy (SLCARP) by the National Agricultural Research System of Sri Lanka, for the INFORM database, for the year 2018. A basic degree has been taken for as the minimum qualification for listing scientists except with a few who has been promoted for their experience and dedication to work. A research activity is defined as the smallest discreet unit of research, usually and experiment.

In bringing out this publication, I had received a great deal of assistance and support from many people. I would like to acknowledge assistance rendered by the INFORM coordinators for submission of their institutes information on Research Projects, Personnel and budget. I very much appreciate the assistance given me by Mr. Lakshika Hettiarachchi, Research Officer, SLCARP and all those who helped in the completion for this activity.

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## Abbreviations

A/L	-	General Certification of Education – Advance Level
AN	-	Angunakolapellessa
AR	-	Aralaganwila
BN	-	Bandarwela
BSc	-	Bachelor of Science
BVSc	-	Bachelor of Veterinary Medicine
BW	-	Bombuwela
CRI	-	Coconut Research Institute
DAPH	-	Department of Animal Production & Health
DEA	-	Department of Export Agriculture
DFC	-	Department of Forest Conservation
DNBG	-	Department of National Botanic Gardens
DOA	-	Department of Agriculture
FCRDI	-	Field Crop Research & Development Institute
FMRC	-	farm Mechanization Research Centre
FRDI	-	Fruit Research & Development Institute
FRU	-	Food Research Unit
GDP	-	Gross Domestic Products
GLORDC	-	Grain Legume and Oil crops Research & Development Centre
HARTI	-	Hector Kobbekaduwa Agrarian Research & Training Institute
HORDI	-	Horticultural crop Research & Development Institute
HRD	-	Human Resources Development
INFORM	-	Information for Agricultural Research Managers
KL	-	Kilinochchi
MA	-	Master of Arts
MEng	-	Master of Engineering
MIS	-	Management Information System
MK	-	Makandura
Mphil	-	Master of Philosophy
MSc	-	Master of Science
MVSc	-	Master of Veterinary Medicine
NARA	-	National Aquatic Resources Research and Development Agency
NARS	-	National Agricultural Research System
NIPHM	-	National Institute of Post-harvest Management
NPQS	-	National Plant Quarantine Service
NRMC	-	Natural Resources Management Centre
O/L	-	General Certification of Education – Ordinary Level
PBS	-	Programme Budgetary System
PG	-	Post-graduate
PGRC	-	Plant Genetic Resources Centre
PhD	-	Doctor of Philosophy
PI	-	Principal Investigator
PRI	-	Palmyrah Research Institute
PVIC	-	Plant Virus Indexing Centre
RARDC	-	Regional Agricultural Research & Development Centre
RRDI	-	Rice Research & Development Institute
RRISL	-	Rubber Research Institute
SCPPC	-	Seed Certification & Plant Protection Centre
SCS	-	Seed Certification Service

SEPC	-	Socio Economic & Planning Centre
SLCARP	-	Sri Lanka Council for Agricultural Research Policy
SRI	-	Sugarcane Research Institute
TRI	-	Tea Research Institute
VRI	-	Veterinary Research Institute
TRB	-	Total Recurrent Budget
CoFP	-	Constant Factor Price
CuFP	-	Current Factor Price

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## **Part 1**

### **Overview of Research Personnel, Budgets and Projects in NARS**





## INFORM 2018

### Introduction

Sri Lanka Council for Agricultural Research Policy (SLCARP), the apex body of the National Agricultural Research System, is charged with the major responsibility of advisory role along with aiding, promoting, and co-ordinating research, related to agriculture and allied areas in the country.

Fourteen research organizations, responsible for research and training activities of different commodities, scattered island wide, are closely linked with the SLCARP at present. The effective management of such diverse research institutes poses a formidable challenge to the NARS. Agricultural research institutions in the country have grown rapidly in size as well as in scope of the activities in the recent years. In the light of increased institutional activities coupled with growing scarcity of resources as well as the complexities of the NARS, the research managers are faced with the problem of effective and efficient management of their research.

Precise knowledge about the research programmes and projects that are being carried out by the scientists in their institutions is the first prerequisite of any efforts towards rationalization of research investments. Additionally, relevant information on various research resources, including the efficiency with which these are used, would also be required. The most important resources used for the implementation of research programmes include human resources, finance, and facilities. In the absence of detailed information on these three categories of research resources, performance of the essential research management functions, such as planning, programming, monitoring, and evaluation would become difficult. Lack of quality information particularly on the availability and utilization of scarce resources, can be a major impediment for the research managers to manage their research effectively at their institutes.

Relevant information is an essential prerequisite for sound decision-making by the research managers because they; provide the basis for effective planning, programming, monitoring and evaluation of research; Strengthening resources; and bringing about organizational reforms and policy level changes. Although agricultural research institutions in the country are good at record keeping on research programmes and projects along with the associated resources, this information is not readily available with the research managers to take sound decisions. This is because of recording of information at various locations by different people at different places in different forms. This always leads to managerial ineffectiveness.

Therefore it becomes necessary to develop an organized Management Information System (MIS)

for agricultural research that can generate relevant information. As the research activities increase, the need for an organized MIS becomes more apparent. INFORM is a management information system, including a program budgetary system. It was developed and introduced by ISNAR and SLCARP to the NARS. This provides necessary information for effective and efficient research management. Information is get collected annually through INFORM coordinators of the relevant institutes as an Institutional data base. After processing of this information, these Institutional INFORM databases were compiled into a National database. The corrected institute database was given to the submitting institute at the submitting date itself. This database can be used by institute's research managers for institute research management. Most important information is analysed at national level and a report is published annually. This report presents a brief analysis of the research budgets, projects and personnel of the NARS, together with Directory of Research Projects. This information will be very useful for research managers, in effective and efficient research management.

In 2018, SLCARP collected INFORM data from thirteen research organizations, of the National Agricultural Research System in Sri Lanka (NARS), namely, Department of Agriculture (DOA), Department of Export Agriculture (DEA), National Institute of Post-Harvest Management (NIPHM) and Hector Kobbekaduwa Agrarian Research & Training Institute (HARTI), under the Ministry of Agriculture. Department of Forest Conservation (DFC), under the Ministry of Environment and Natural Resources, National Aquatic Resources Research & Development Agency (NARA) under the Ministry of Fisheries and Aquatic Resources, Department of National Botanic Gardens (DNBG) under the Ministry of Tourism Development, Wildlife and Christian Religion Affairs, Veterinary Research Institute (VRI), under the Ministry of Livestock and Coconut Research Institute (CRI), Palmyra Research Institute (PRI), Tea Research Institute (TRI), Sugarcane Research Institute (SRI) and Rubber Research Institute (RRI) under the Ministry of Plantation Industries.

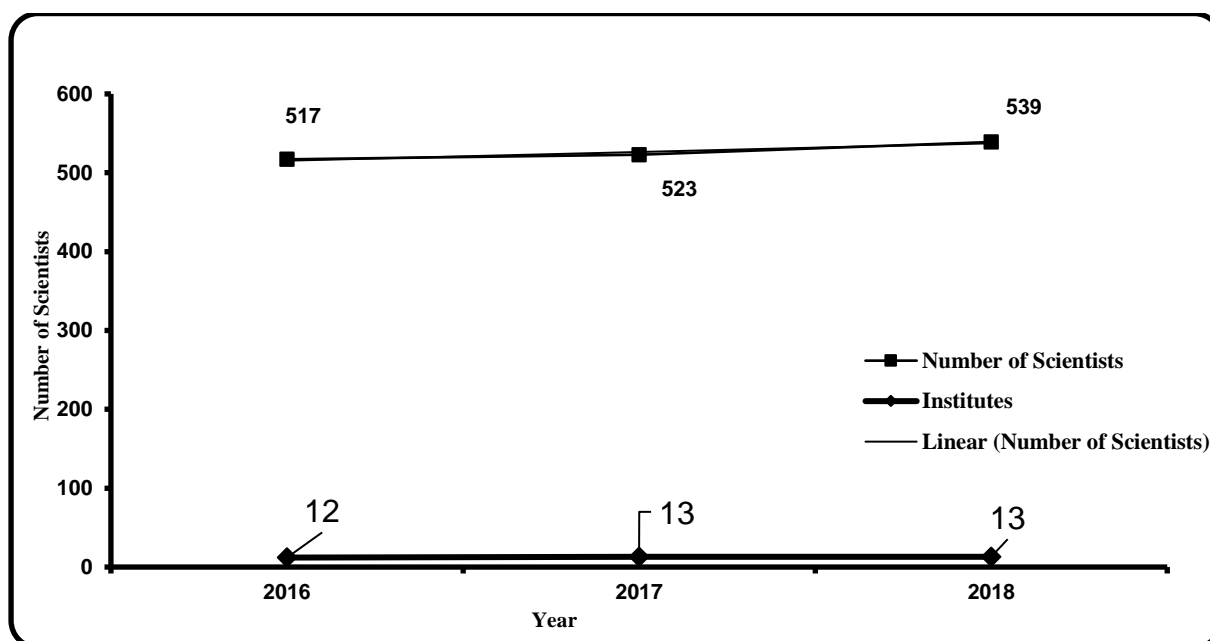
Nineteen sub institutes/Centers/units, namely Field Crops Research & Development Institute (FCRDI), Fruit Research & Development Institute (FRDI), Horticultural Crops Research & Development Institute (HORDI), Rice Research & Development Institute (RRDI), Grain Legume and Oil Crops Research & Development Center (GLORDC), Food Research Unit (FRU), National Plant Quarantine Service (NPQS), Plant Genetic Resources Centre (PGRC), Natural Resources Management Centre (NRMCC), Socio-economic & Planning Centre (SEPC), Plant Virus Indexing center (PVIC), Registrar of Pesticide (ROP), Seed Certification Centre (SCS), Farm Mechanization Research Centre (FMRC) and Regional Agricultural Research & Development Centers (RARDC) of Bandarawela, Bombuwela, Makandura, Aralaganwila and Kilinochchi, provided information separately under the Department of Agriculture. Information were collected in an electronic form, through INFORM Coordinators of the respective research organizations. This information was processed and compiled into a national database. Because of the wide range of sources and the number of people involved in the data collection process, the

standardization of the data to permit valid comparisons was not an easy task, thus, the results, should be regarded as indicative.

The information in the database can be divided mainly into three groups namely, Research personnel, Research Budgets and Research projects. The first two groups (Research personnel and research budget) were resources available for the research managers to carry out research programmes and the third (Research Projects) was the research activities that can be performed with these resources. This third group provides necessary information on how the resources were used in research activities.

### Human Resources of NARS in 2018

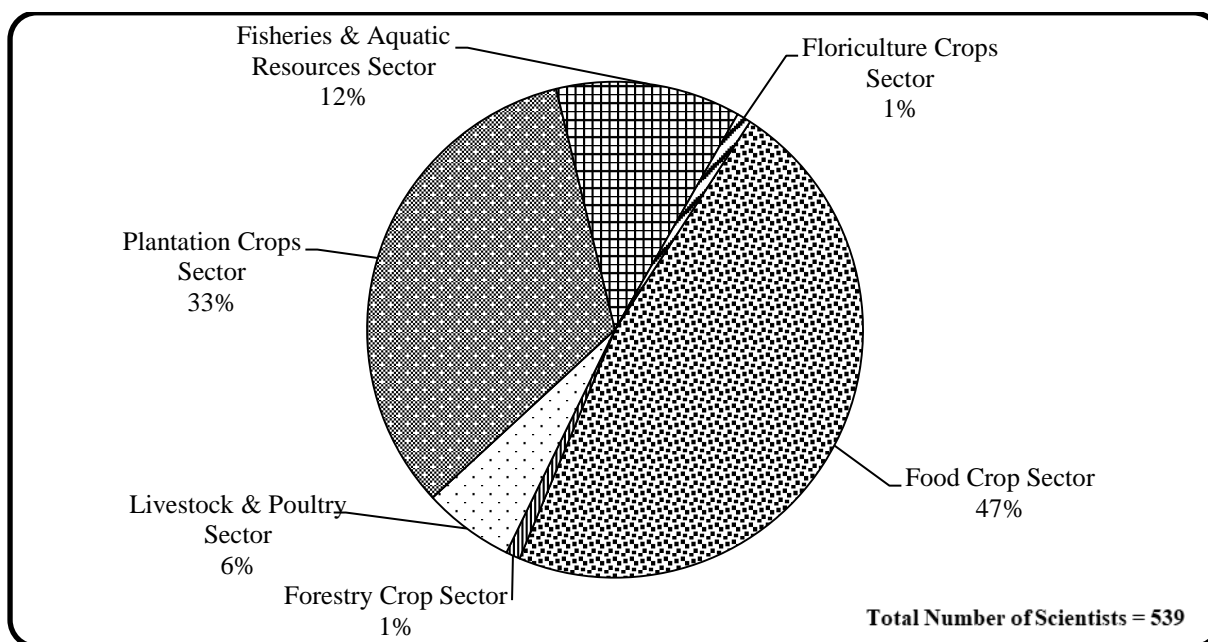
There were 539 scientists in the NARS during 2018 in total of 13 Research Institute in the National Agricultural Research System (NARS). There was no common nomenclature for designation among institutes; hence, the minimum level of scientists was considered as the staff grade research officers or equivalent posts. These scientists have a basic degree as a minimum qualification except few promoted scientists without having any basic degree qualification. The main role of scientists is carry out of research as either Principal Investigator (PI) or Co-investigator. Scientists in the Plantation sector engaged in specific commodity (ex- Tea, Rubber, Coconut, etc.) while scientists in other sectors deal with more than one commodity group (ex- spices, beverages, medicinal crops, vegetables, fruits, field crops etc.).



**Figure 1-Trend in Number of Scientists at NARS (2016-2018)**  
Source: INFORM –National Database-2018

Figure 1 shows number of scientists in the NARS during the period of 2016-2018. Information was collected in 2016, 2017 and 2018 from 12, 13 and 13 institution of NARS respectively. The number of scientists, in 2016, 2017 and 2018 was 573, 523 and 539 respectively.

### Number of scientists by Different Sectors in the NARS in 2018



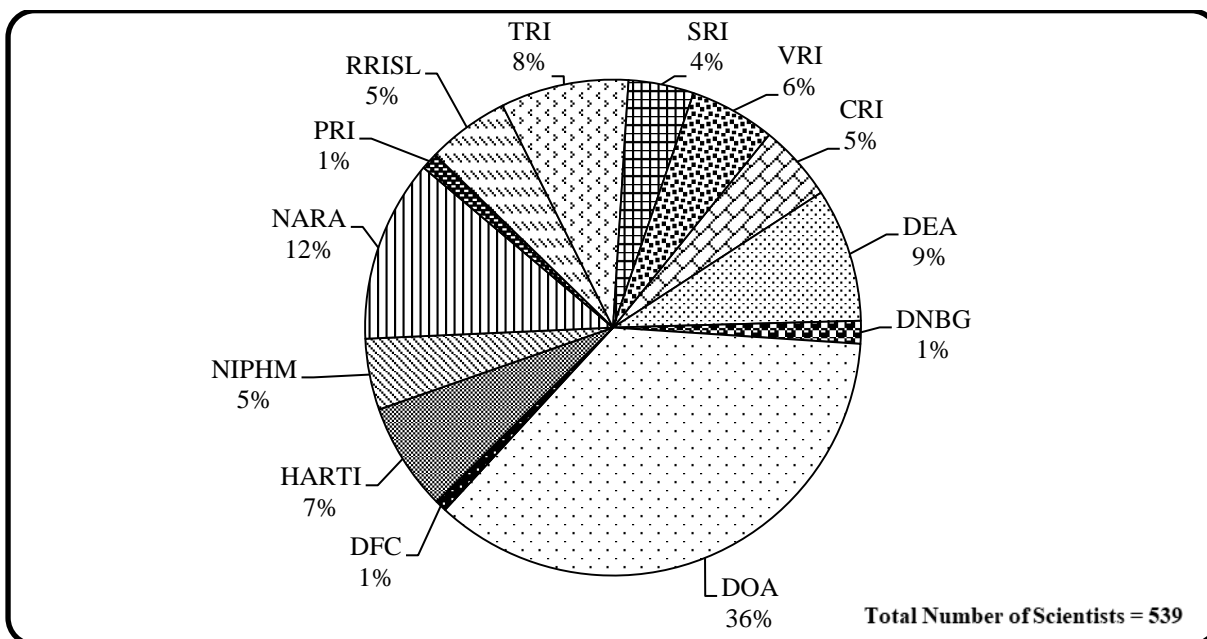
**Figure 2-No of Scientists by Sector in 2018**

**Source: INFORM –National Database-2018**

The Figure 02 illustrates the distribution of scientists among six different sectors. The Food Sector has the highest number of scientists employing the 47% of the total scientists of the NARS. This was followed by Plantation Sector employing 33% of the total scientists. Fisheries & Aquatic Resources Sector and Livestock and Poultry Sector employed 12% and 6% of the total scientists while each Floriculture and Forestry Sector employed 1%.

### Number of scientists by institutes in the NARS in 2018

The Figure 03 shows the distribution of the scientists in the NARS in 2018. Accordingly, thirty six percent (36%) of total scientists were from Department of Agriculture (DOA) which is the largest organization scattered island wide in the NARS. The scientists in DOA were distributed among 4 main institutes (FCRDI, FRDI, RRDI and HORDI) and five centres (NRMC, SEPC, SCPPC, and FMRC). The rest of the scientists were distributed among other institutes. NARA has the second highest by employing 12% of the total and it was followed by DEA and TRI employing by 9 & 8% respectively. Seven percent of the total was employed by HARTI while VRI employing 6% & each RRI, CRI and NIPHM employed 5% of the total. The rest of the institutes employed less than 5% including 4% by SRI and 1% by each DNBG, PRI and DFC.

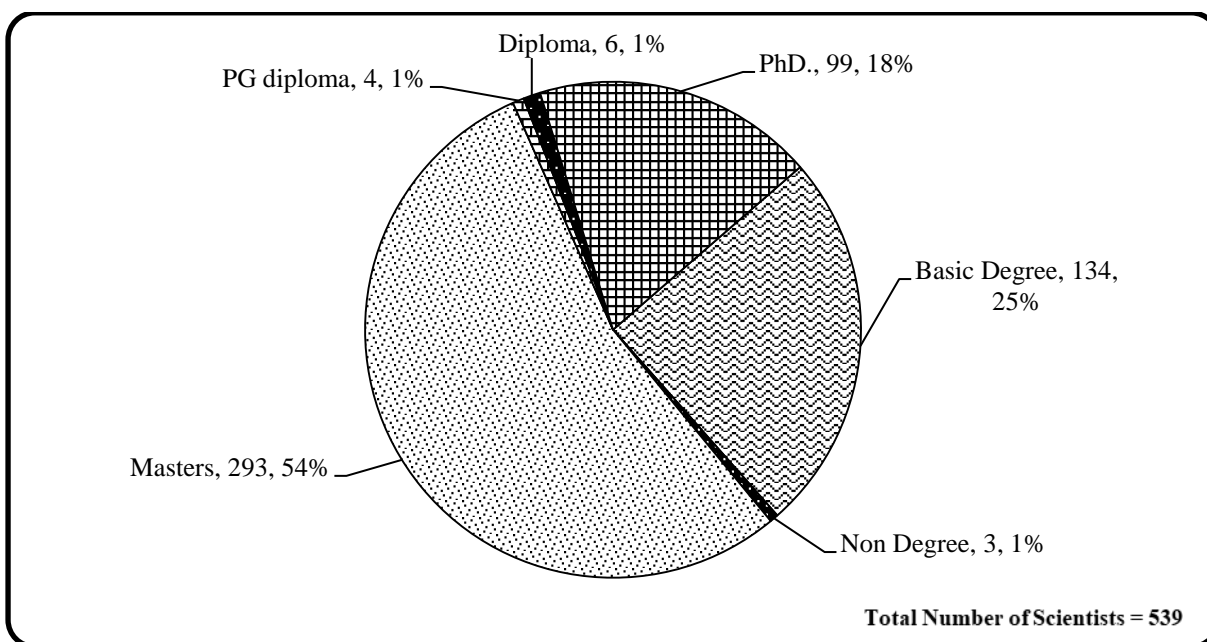


**Figure 3-Number of Scientists (%) in the NARS by Institutes- 2018**

Source: INFORM –National Database-2018

**Number of scientists in the NARS by Highest Academic Qualifications-2018**

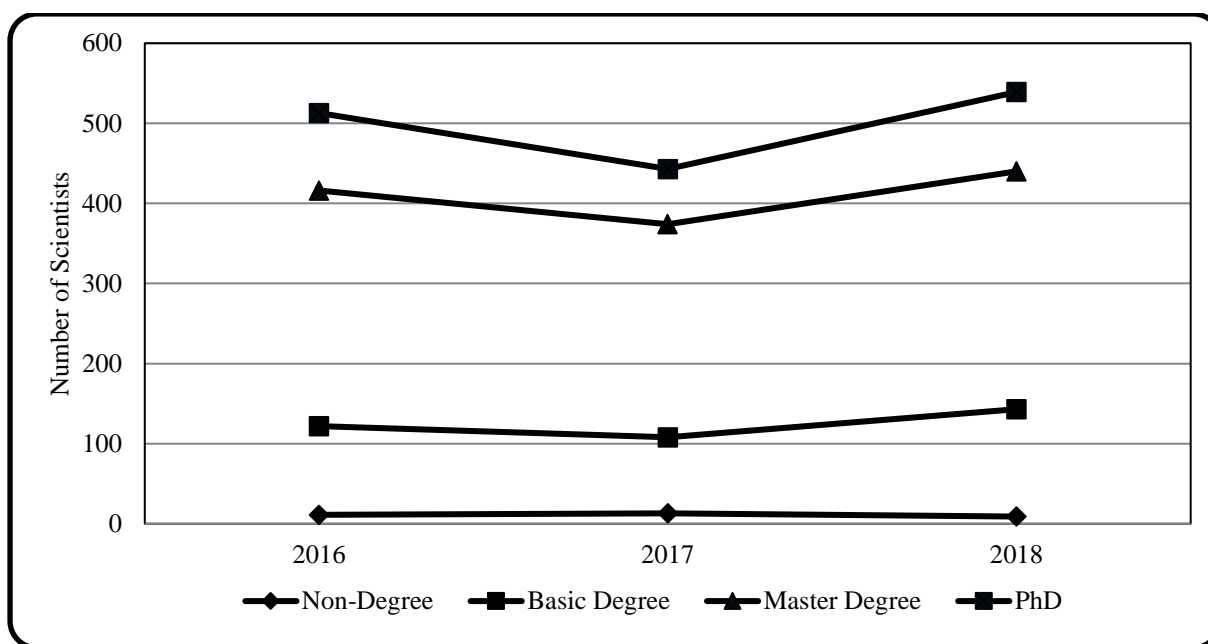
Figure 04 provides information on the highest academic qualifications achieved by the scientists in NARS. According to the Figure 04, 73% of the scientists were trained, including 18% PhDs, 55% Masters Degrees and 1% PG Diploma while 26% of the total scientists have not been provided with formal research training (Basic degree or diploma or non-degree). Among the untrained category less than one percent of scientists, have not obtained, at least a basic degree.



**Figure 4-Number of Scientists (%) by highest qualification in the NARS during 2018**

Source: INFORM –National Database-2018

**Trend of Number of Scientists by Highest Academic Qualifications - (2016–2018)**



**Figure 5-Number of Scientists by Qualification (2016-2018)**

**Source: INFORM –National Database-2010**

Figure 05 shows the trend of number of scientists with respect to their highest academic qualifications during the period of 2016-2018. A positive trend was shown by all categories except the category of non-degree. In 2018, compared to the previous year, the number of trained scientists have been increased while the total of untrained scientists (Basic & non-degree) also increased.

Table 1 shows the distribution of the highest qualification of the scientists representing different disciplines at NARS in 2018. According to Table 01, 73% of scientists were trained. More than 50% of scientists in all disciplines excluding Agricultural Engineering were trained either having MSc or MPhil or PhD. All 5 scientists at the Dept. of Forest Conservation are trained including one PhD and one MPhil. The second highest of the trained scientists were in the discipline of support science which includes Information Technology, Biometry and Research management. The third highest percentage of trained scientists were in Natural Resource Management and Aquatic Science & Fisheries (88%) followed by Animal Production and Health (86%). The trained scientists in the disciplines of Plant breeding and Genetics, Plant Protection, Plant Physiology and Socio Economics were 78%, 76%, 73% & 71% respectively.

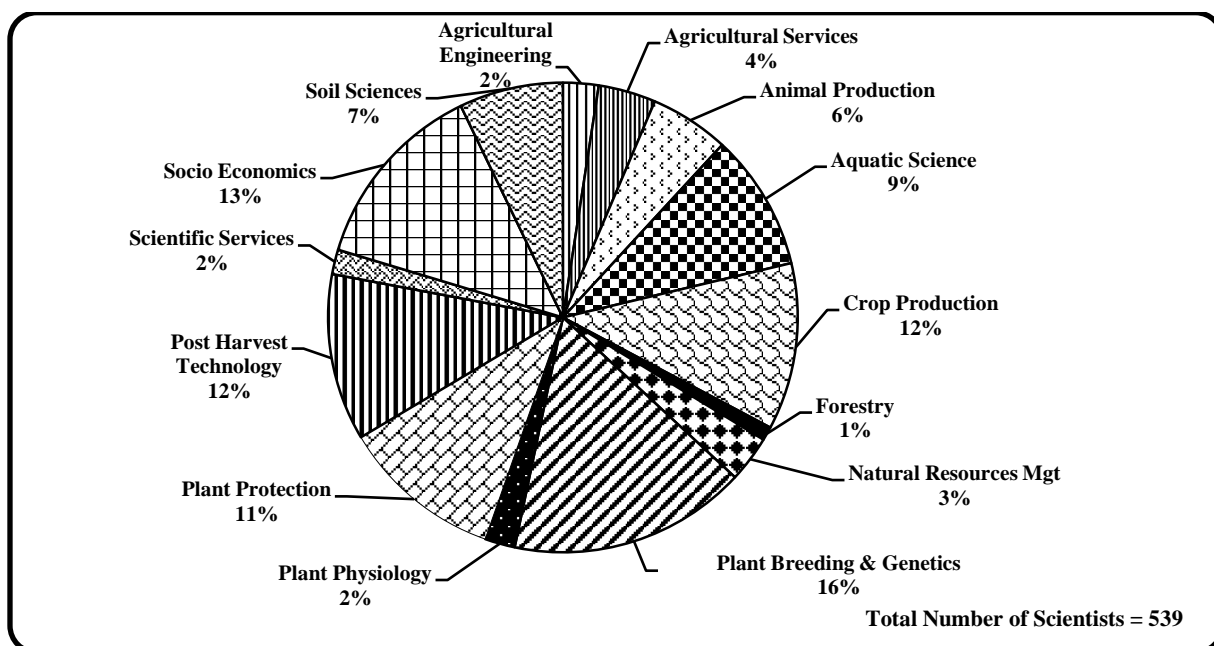
**Table 1-Scientists' Highest Qualification by Discipline**

Discipline	Untrained Scientists		Trained Scientists				Total No. of Scientists
	No.	%	No			%	
			PhD	Mphil	MSc	Trained	
Agricultural Services*	7	28	4	0	14	72	25
Agriculture Engineering	8	62	1	2	2	38	13
Animal Prod. & Health	4	14	10	1	13	86	28
Aquatic Science & Fishe.	6	12	12	7	25	88	50
Forestry	0	0	1	1	3	100	5
Plant Physiology	3	27	6	2	0	73	11
Crop Production	23	34	11	7	22	66	63
Food Science	6	40	2	1	6	60	15
Natural Resources Mgt.	2	12	2	0	13	88	17
Plant Breeding & Gene	19	22	16	9	42	78	86
Plant Protection	14	24	9	4	32	76	59
Post-Harvest Technology	17	37	3	9	17	63	46
Socio Economics **	21	29	7	7	36	71	71
Soil Sciences	12	32	9	4	13	68	38
Support Sciences ***	1	8	6	0	5	92	12
<b>Sub total</b>	<b>143</b>	<b>27</b>	<b>99</b>	<b>54</b>	<b>243</b>	<b>73</b>	<b>539</b>
<b>TOTAL</b>	<b>143</b>	<b>27</b>	<b>396</b>			<b>73</b>	<b>539</b>

Source: INFORM –National Database-2018

### Numbers of Scientists by Major Disciplines in the NARS

Figure 06 shows the distribution of scientists among major disciplines. Of the total scientists, 16% was accounted for the discipline of Plant Breeding & Genetics and it was followed by. Socio economics employing 13% of the total. Each Crop production and Post-harvest accounted 12% of the total. Disciplines of Plant Protection and Aquatic Science occupied 11% and 9% respectively. The scientists engaged in disciplines of Soil Science, Animal Production and Agricultural Services were 7%, 6% and 5% respectively. Of the total, 3% of scientists were involved in the discipline of Natural Resource Management. Meantime, 2% each was accounted for Agricultural Engineering, Plant physiology & Scientific Services. However, there was only 1% of the scientists engaged in the discipline of Forestry.



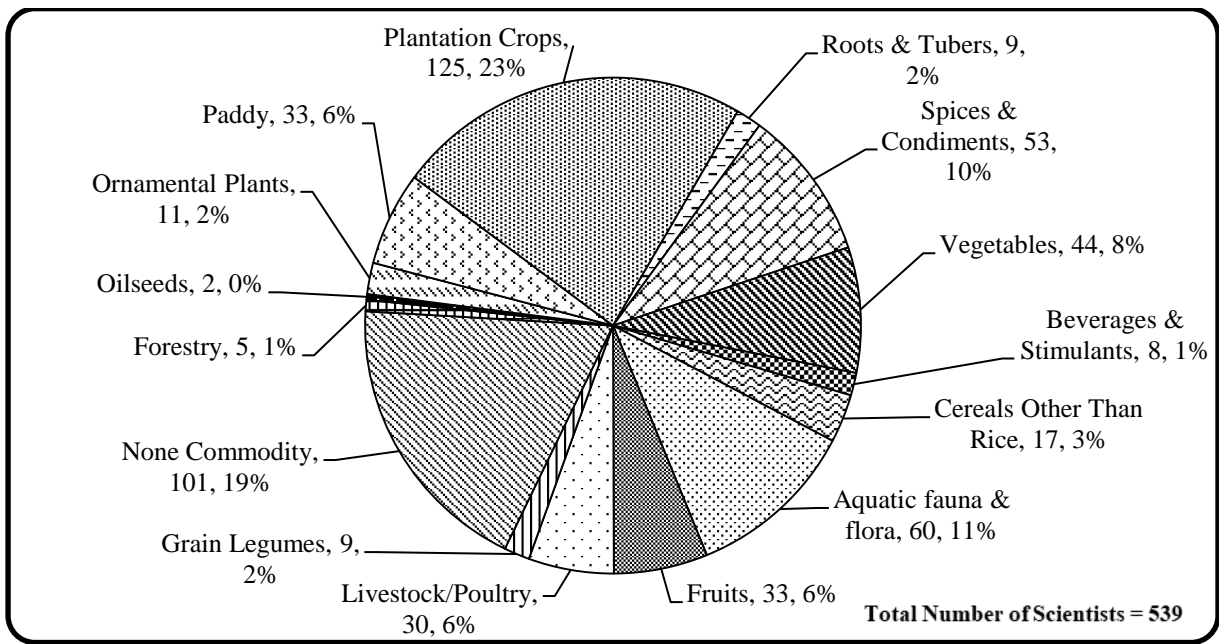
**Figure 6-Number of Scientists by Major Discipline in the NARS during the 2018**

**Source: INFORM –National Database-2018**

### **Numbers of Scientists by Commodity Group in the NARS**

Figure 07 shows the distribution of scientists among different commodity groups including who are doing factor research (non commodity). Eighty one percent (81%) of scientists carried out commodity based research while 19% were engaged in factor (non-commodity) research activities. The 81% of the total scientists who carried out research on commodities can be further classified according to the commodity groups. The highest number of scientists (23%) carried out research on plantation crops (Tea, coconut, rubber, palmyrah and sugarcane) while 11% of scientists were involved in Aquatic fauna & flora. Of the total, 10% was worked on spices & condiments. Research activities on vegetables were carried by 8% of the total scientists while six percent of total scientists carried out research on each Paddy, fruit crops and livestock& poultry. Two percent of the total scientists carried out research activities on each grain legumes, ornamental plants, roots & tuber crops. There are approximately 1% of the scientists were involved in each beverages & stimulants and Forestry crops while scientists involved in Oil seeds research were less than one hence it shows as zero but there were two scientists.

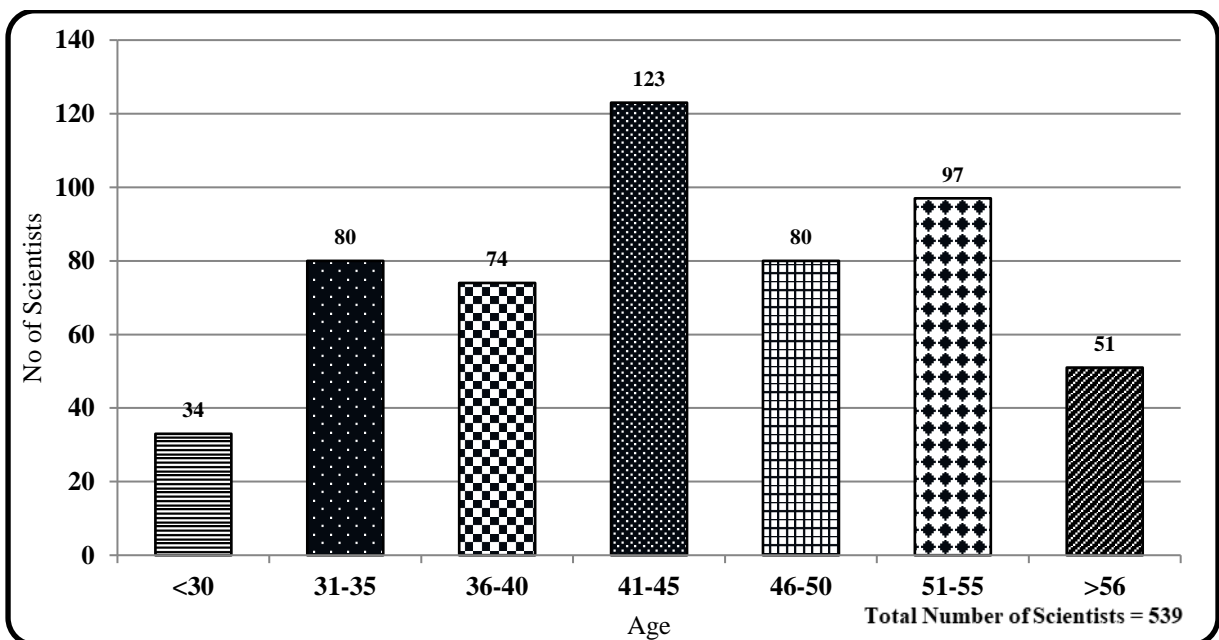




**Figure 7-Number of Scientists by Major Commodity Groups in the NARS during the 2018**  
**Source: INFORM –National Database-2018**

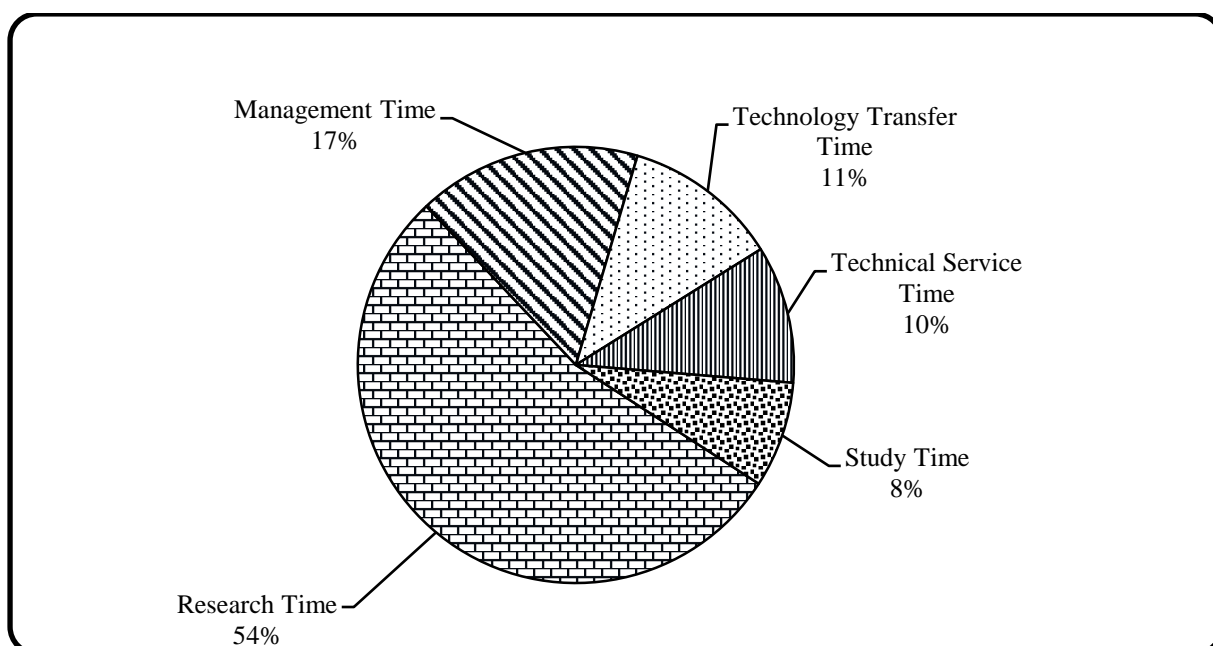
**Numbers of scientists by age in the NARS**

Figure 08 illustrates the age distribution of scientists in NARS in 2018. There were 34 scientists in the age group of below 30 years. The age groups of 31-35, 36-40, 41-45, 46-50 and 51-55 had 80, 74, 123, 80, and 97 scientists, respectively. 51 scientists were in the age group of over 56 years.



**Figure 8-Age analysis of NARS Scientists (Dec. 31, 2018)**  
**Source: INFORM –National Database-2018**

## How Scientists spent their Time in the institute



**Figure 9-How Scientists Spent their time during the 2018**

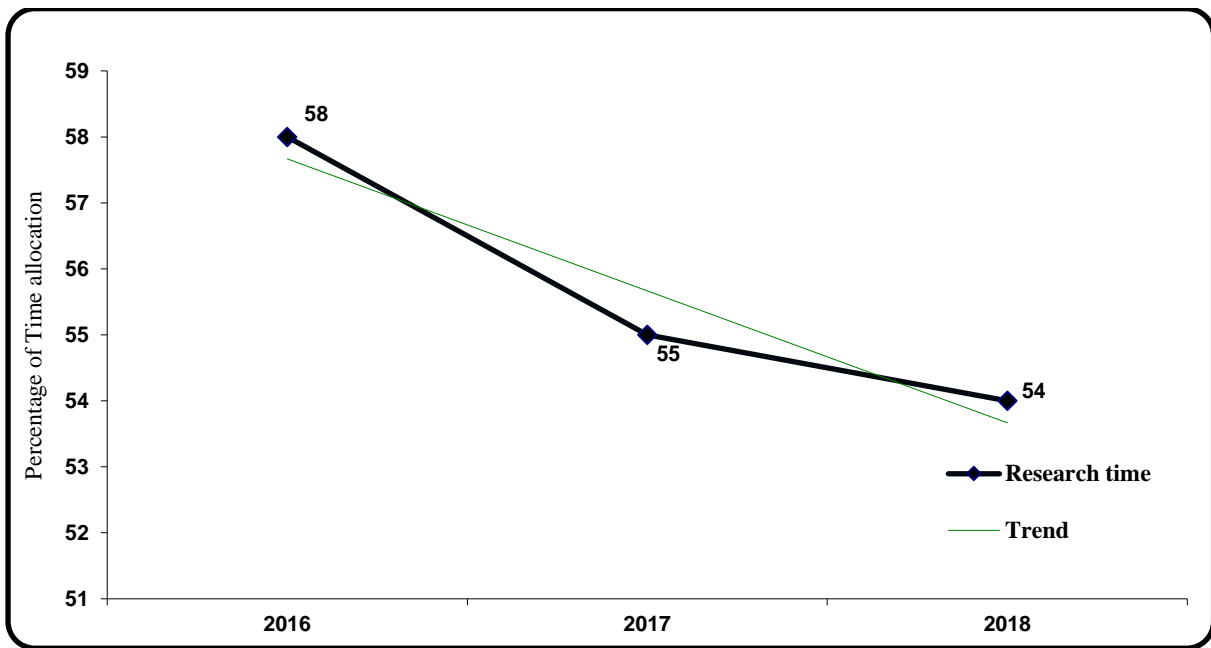
**Source: INFORM –National Database-2018**

*\*Total Time=(No of Working days/year)\*(No of Working hrs/day)\*( No of Scientists)hrs*

Time spending of the researchers among different activities depicted in the Figure 09. The time allocation of the scientists can be classified as Research, Management, Technology transfer, Technical Service and Study. In 2018, total man hour was calculated as 1,090,936.00 (No of working days\* No of working hours a day \* No of scientists [253\*8\*539]).

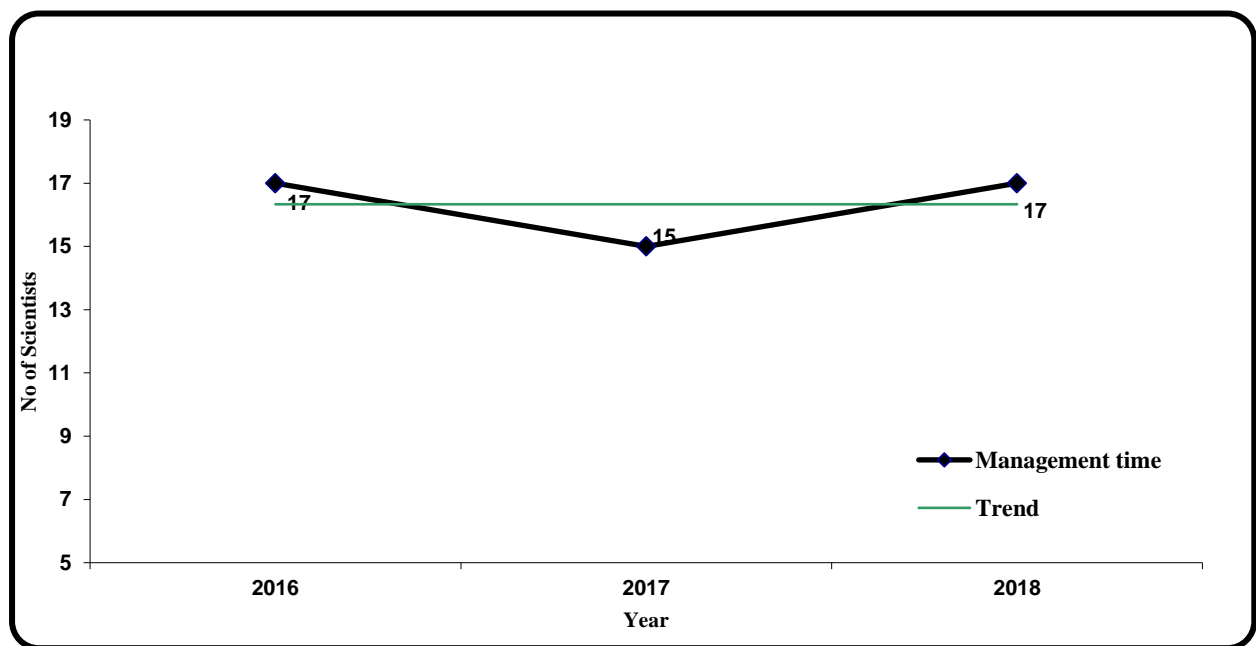
During the year, 54% of the total time was spent for research activities. Seventeen percent of the total time was occupied for management activities while 11%, 10% and 8% were utilized for technology transfer, technical services and study respectively.

Figure 10 to 14 illustrate how time was utilized by the scientists in different activities for the period of 2016-2018. According to Figure 10, time allocation percentage for research has gradually decreased while percentage of time allocation for technical service has increased (Figure 14). The percentage of time utilization for management and technology transfer remain constant as Figure 11 and 13 whereas study time has increased during the period (Figure 12).



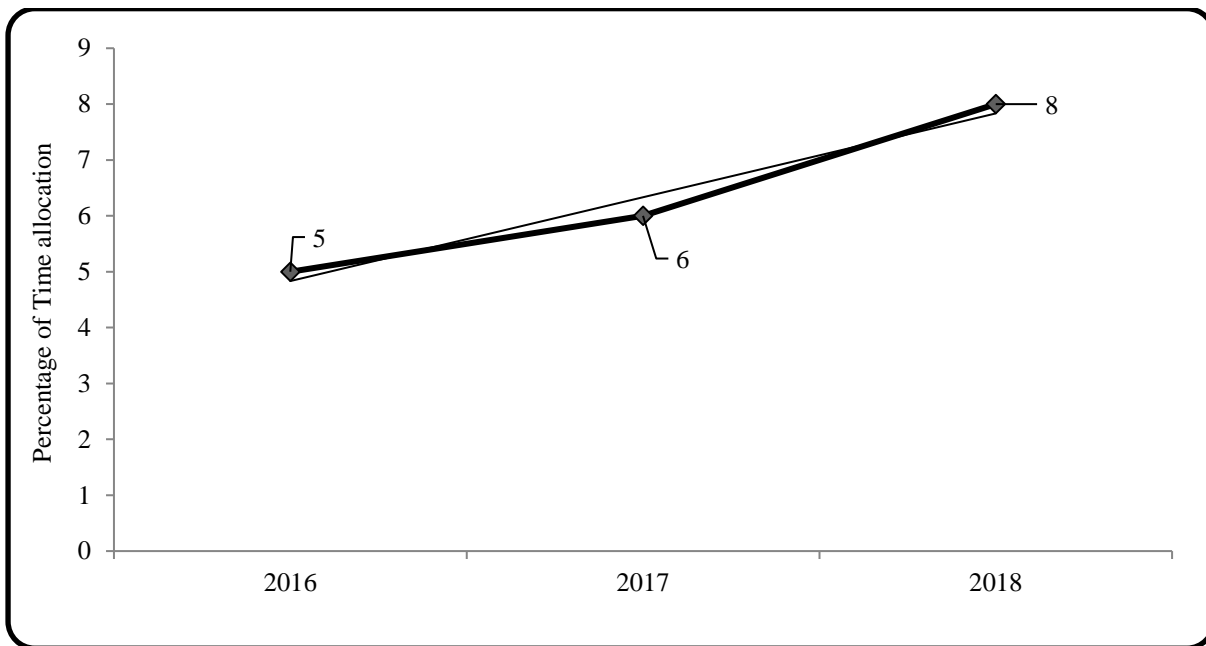
**Figure 10-Time Allocation (%) for Research by Scientists at NARS 2016 - 2018**

Source: INFORM –National Database-2018



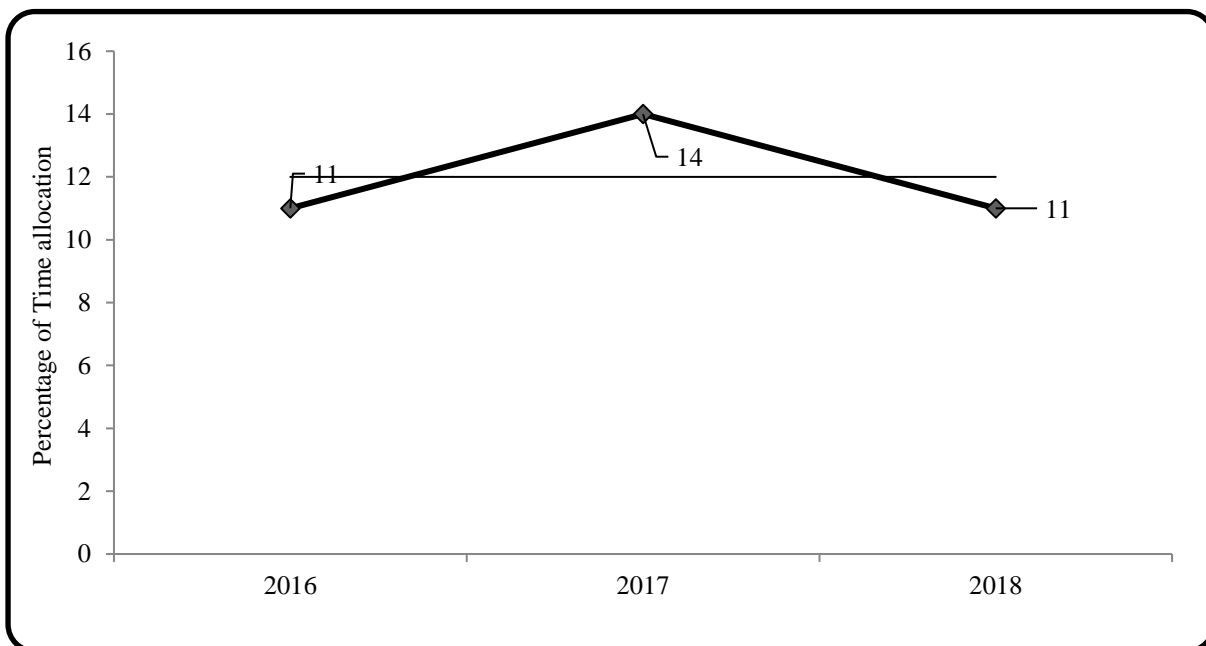
**Figure 11-Time Allocation (%) for Management by Scientists at NARS 2016- 2018**

Source: INFORM –National Database-2018



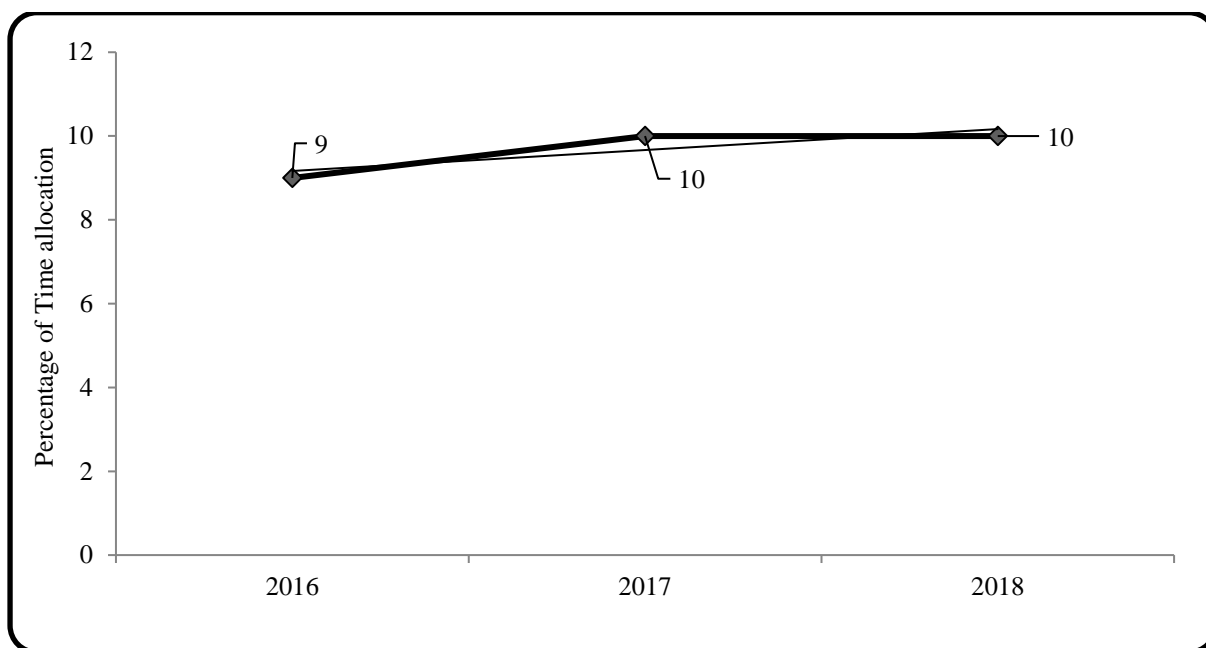
**Figure 12-Time Allocation (%) for PG Studies by Scientists at NARS 2016 - 2018**

**Source: INFORM –National Database-2018**



**Figure 13-Time Allocation (%) for Technology Transfer by Scientists at NARS 2016 - 2018**

**Source: INFORM –National Database-2018**



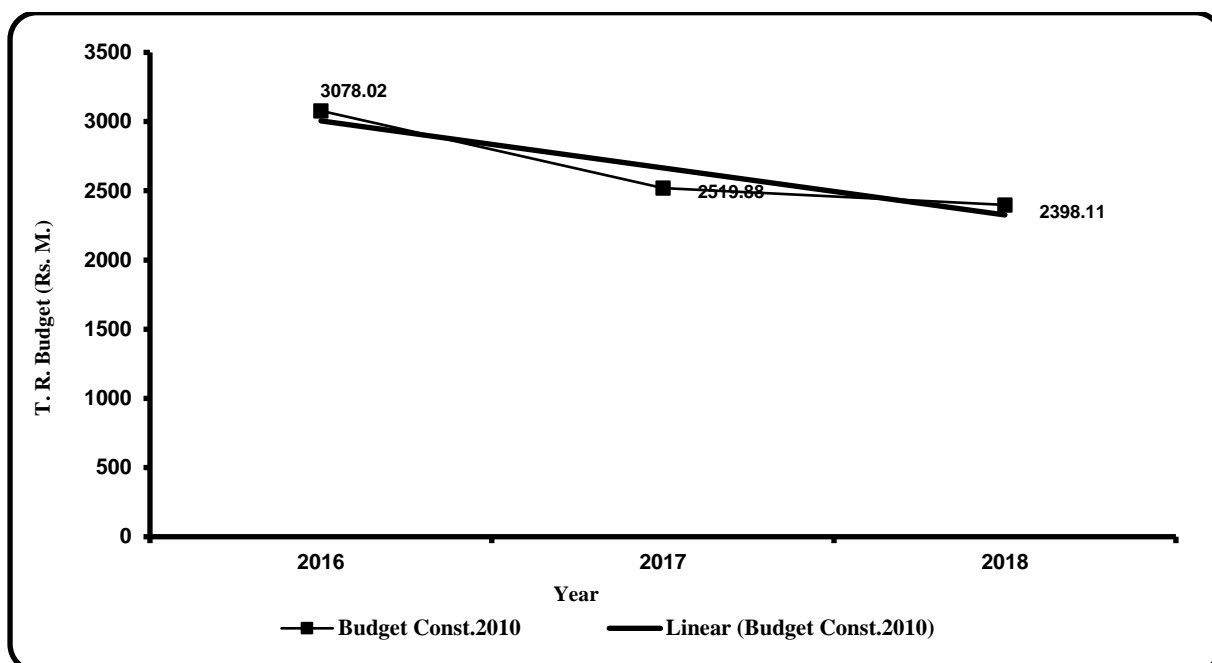
**Figure 14-Time Allocation (%) for Technical Service by Scientists at NARS 2016 - 2018**

**Source: INFORM –National Database-2018**

### **Recurrent Budget at NARS**

In the INFORM database the total recurrent budget allocated for agricultural research has been defined as the total recurrent expenditure and the capital budget was not included. The source of funding of departments and institutions are varied and the main source is the General Treasury. Meantime some institutions especially in some plantation sector institutes received additional funds came from CESS. Several research programmes were funded by local and foreign donor agencies. An analysis on recurrent budget was done with respect to different years, organizational units, disciplines, functions/activities and commodities and illustrated by figures and tables. Figure 15 shows allocation of recurrent budget during past three years from 2016-2018.

In 2018, Rs. 2,398 Million (Constant Factor price 2010) was spent on agricultural research, by thirteen research organizations in the NARS (Table 02), namely DOA, DEA, FD, DNBG, HARTI, NIPHM, NARA, VRI, TRI, CRI, RRI, SRI and PRI. Figure 15 shows a decreasing trend in total recurrent expenditure during the past three years. The Figure 16, 17, 18, 19 and 20 show the distribution of the research budget among different sectors, institutes, activities, major disciplines and commodity groups.



**Figure 15-Total Recurrent Budget ( Rs. Mn ) NARS from 2016-2018**

Source: INFORM –National Database-2018

Constant Factor Price - 2010

**Table 2-Recurrent Budget Allocation within NARS (2016-2018)**

Institute Centre	Recurrent Budget Rs. M		
	2016	2017	2018
Coconut Research Institute	194.88	210.46	154.39
Dept. of Export Agriculture	143.96	119.30	122.01
Dept. of Agriculture	1093.36	908.87	1107.70
Department of Forest Conservation	16.48	9.72	16.91
Dept. of National Botanic Garden	4.71	12.89	3.20
Hector Kobbekaduwa Agricultural R & T Institute	131.18	117.18	124.18
National Institute of Post-harvest Management	52.68	36.27	53.02
National Aquatic Resources R & D Agency	198.17	178.10	153.36
Rubber Research Institute	178.02	182.54	136.19
Sugarcane Research Institute	291.46	120.76	116.42
Tea Research Institute	580.15	521.63	328.45
Palmyrah Research Institute	NA	9.00	6.44
Veterinary Research Institute	192.95	93.17	75.82
<b>Total</b>	<b>3,078.02</b>	<b>2,519.88</b>	<b>2,398.11</b>

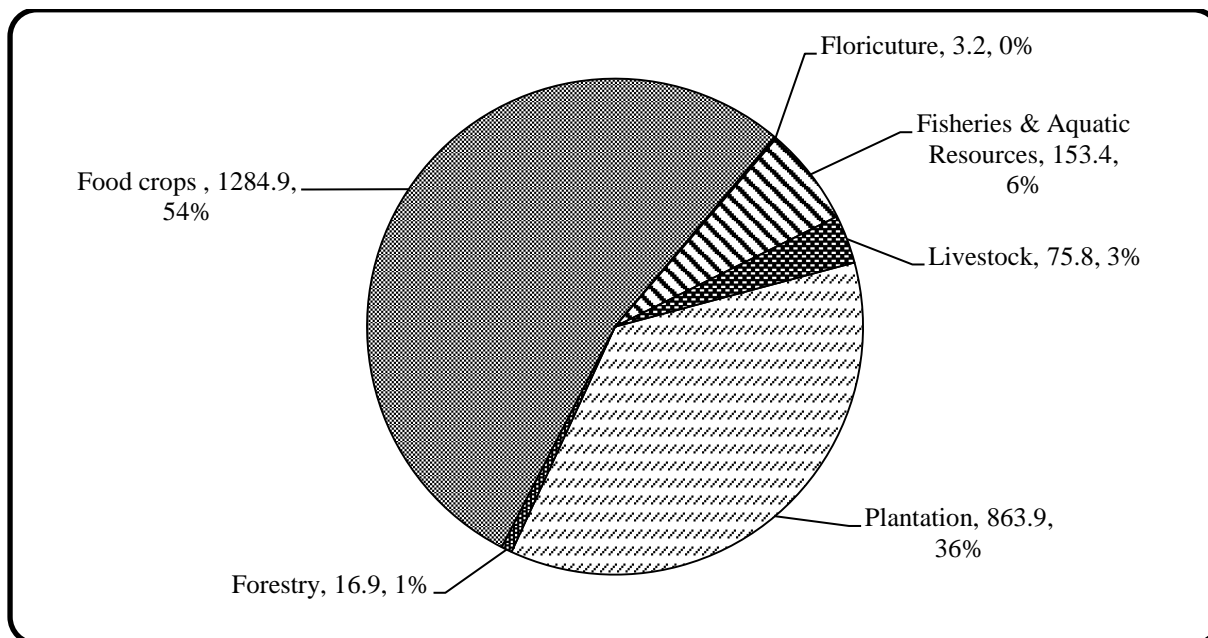
Source: INFORM –National Database-2018

Constant Factor Price - 2010

### NARS Recurrent Budget (%) by Different Sectors -2018

Figure 16 depicts how recurrent budget was distributed among Sectors. Fifty four percent of budget was allocated for the Food crops sector which includes fruits, other field crops rice, roots & tuber crops and vegetables. Plantation crops sector accounted for 36% of the total budget which was consisted of export

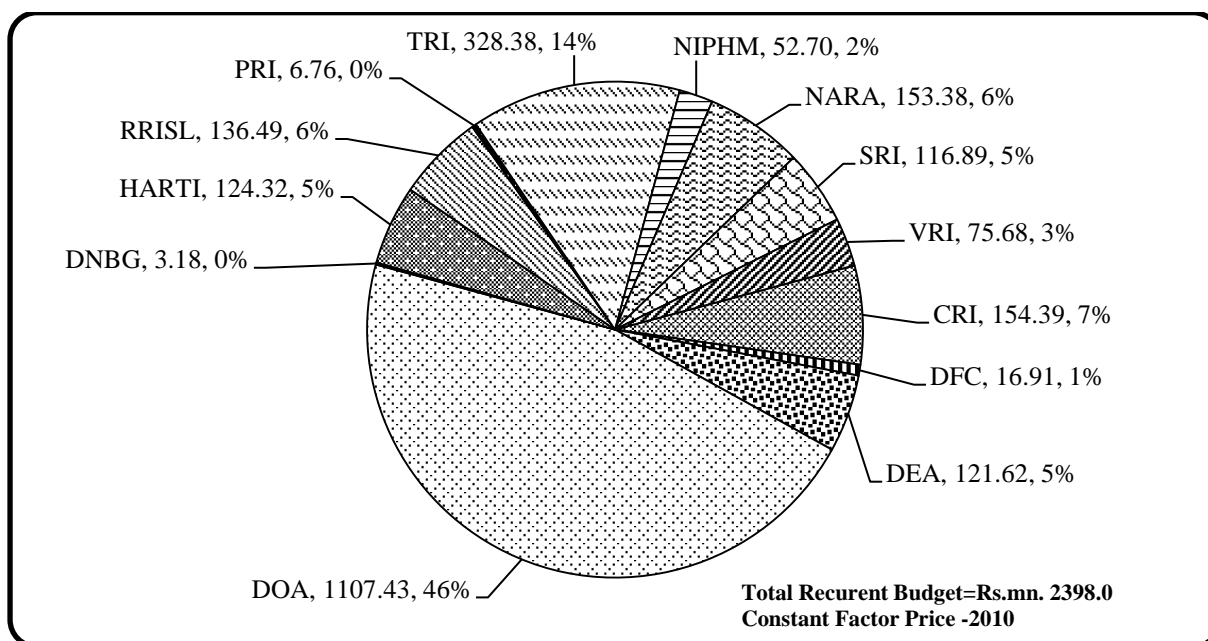
agricultural crops (beetle, beetle leaves, cardamom, clove, cinnamon, citronella, cocoa, coconut, ginger, Goraka, Kithul, palmyrah, pepper, rubber, sugarcane, , tea ,and turmeric, and it was followed by Fisheries & Aquatic Resources (6%). Sector and Livestock sector (3%) of the total budget while Forestry sector spent 1%. The Floriculture sector spent less than one present hence it shows as 0 in the figure 16, though it spent Rs 4.743,928.80 (Figure 16).



**Figure 16-T.R. Budget by Sector- 2018**  
 Source: INFORM –National Database-2018  
 Constant Factor Price - 2010

#### **NARS Recurrent Budget (%) by Institute -2018**

Figure 17 shows the recurrent budget distribution of the NARS institutes in 2018. The highest proportion of the total recurrent budget was allocated to Department of Agriculture (46%) and followed by Tea Research Institute and Coconut Research Institute which spent 14%, and 7% of the total budget respectively. Each National Aquatic Resources Research & Development Agency and Rubber Research Institute have allocated approximately 6% of the total budget in the NARS. Five percent of the total recurrent budget was allocated to each DEA, SRI and HARTI while VRI and NIPHM were allocated 3% and 2% respectively. Approximately, out of the budget, nearly 1% was used by each PRI, DFC and DNBG in 2018.



**Figure 17-T.R. Budget by Institute at NARS - 2018**

Source: INFORM –National Database-2018

Constant Factor Price - 2010

### NARS Recurrent Budget by Functions/Activities

INFORM Budget was prepared using the Program Budgetary System (PBS), by relating budget, with personnel and projects into one system. In the INFORM budget, there are 8 cost categories according to the types of activities of a research organization. Table 3 shows the distribution of the budget among these categories.

**Table 3-NARS Recurrent Budget (%) by Activity**

Activity	Recurrent Budget Rs. Million (Constant Factor Price -2010)		
	2016	2017	2018
Research Personnel Cost	1018.94	827.90	901.49
Materials & Supplies Cost	197.97	242.92	208.24
Transport & Travel Cost	238.12	112.24	136.35
Technology Transfer Cost	269.94	95.16	89.86
Utilities & Facilities Cost	92.67	64.42	35.61
Repairs & Maintenance Cost	256.30	243.58	293.31
Management & Administration Cost	853.79	657.13	526.96
Miscellaneous Cost	151.00	275.96	206.28
<b>Total</b>	<b>3078.73</b>	<b>2519.31</b>	<b>2398.11</b>

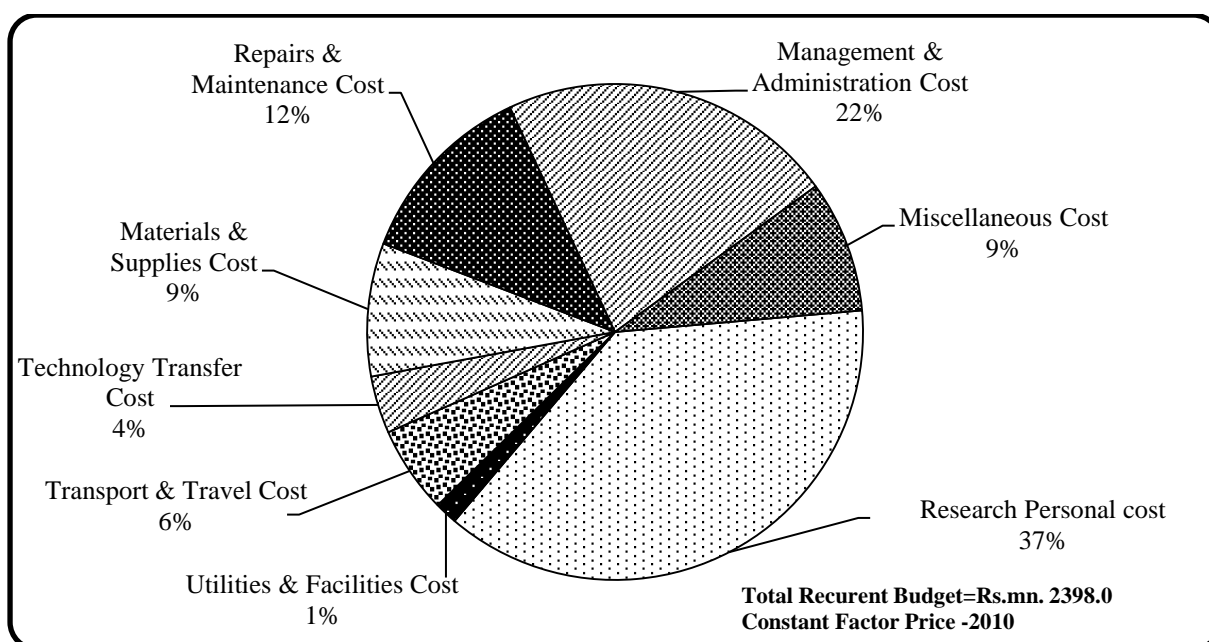
Source: INFORM –National Database-2018

The eight cost categories are Research personnel, which includes all the salaries and benefit allowances of research staff, Materials and Supplies that includes all the supplies used in the research



activities, Transport and Travel, including fuel and subsistence, Management and Administration, which includes the expenses incurred for the non-research staff and management and administration. Repairs and Maintenance includes all the expenses on repairs and maintenance of vehicles, machines and buildings, Technology Transfer includes the expenses incurred on technology transfer activities and services, the expenses incurred on the overheads comes under the Utilities and facilities and the Miscellaneous costs includes all the expenses which cannot be categorised in other seven activities.

Figure 18 shows the distribution of NARS recurrent budget, among eight cost categories. The highest proportion (37%) of the total recurrent budget was incurred on Research Personnel and it was followed by Management and Administration (22%), Repair & Maintenance (12%). Nine percent was spend on each Materials & Supplies and Miscellaneous. Cost accounted for Transport & Travel and Technology transfer and Utilities and Facilities was 6%, 4% and 1% respectively.



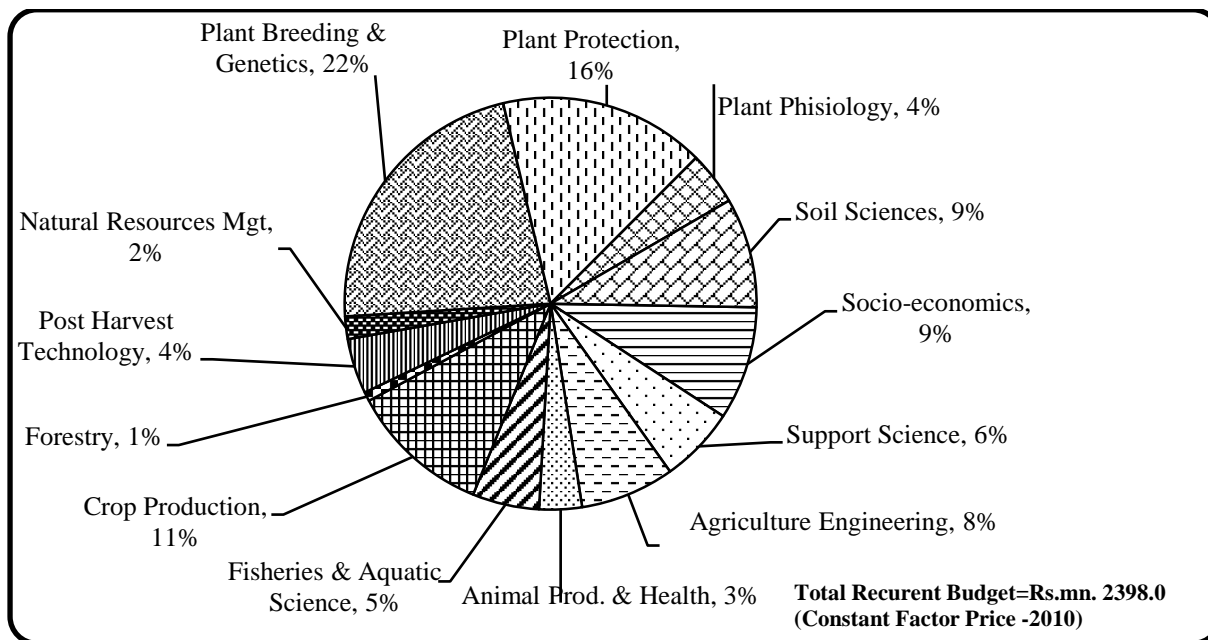
**Figure 18-T. R. Budget by Activities at NARS - 2018**  
Source: INFORM –National Database-2018

### NARS Recurrent Budget by Discipline

Research projects were classified into 13 major disciplines, as Agriculture Engineering, , Animal Production & Health, Crop Production, Fisheries & Aquatic Science, Forestry, Natural Resources Management, Plant Breeding and Genetics, Plant Physiology, Plant Protection, Post-Harvest Technology, Socio-economics, Soil Sciences, and, Support Sciences including Agricultural Science & Information Technology). Figure 19 illustrates how recurrent budget was distributed among these 13 disciplines. in year 2018.

According to the Figure 19, Plant Breeding & Genetics accounted 22% of the total budget and it was followed by plant protection (16%). Discipline of Crop production including Agronomy has accounted only for 11% of the total budget while each Soil science and Socio Economics incurred 9%. Meantime

expenditure on Agricultural Engineering, Support Sciences and Fisheries & Aquaculture was 8%, 6% and 5% respectively. Expenditure on each Post- harvest Technology and Plant physiology was 4% while Animal production & Health spent 3%. Natural Resource Management and Forestry spent 2% and 1 % respectively.



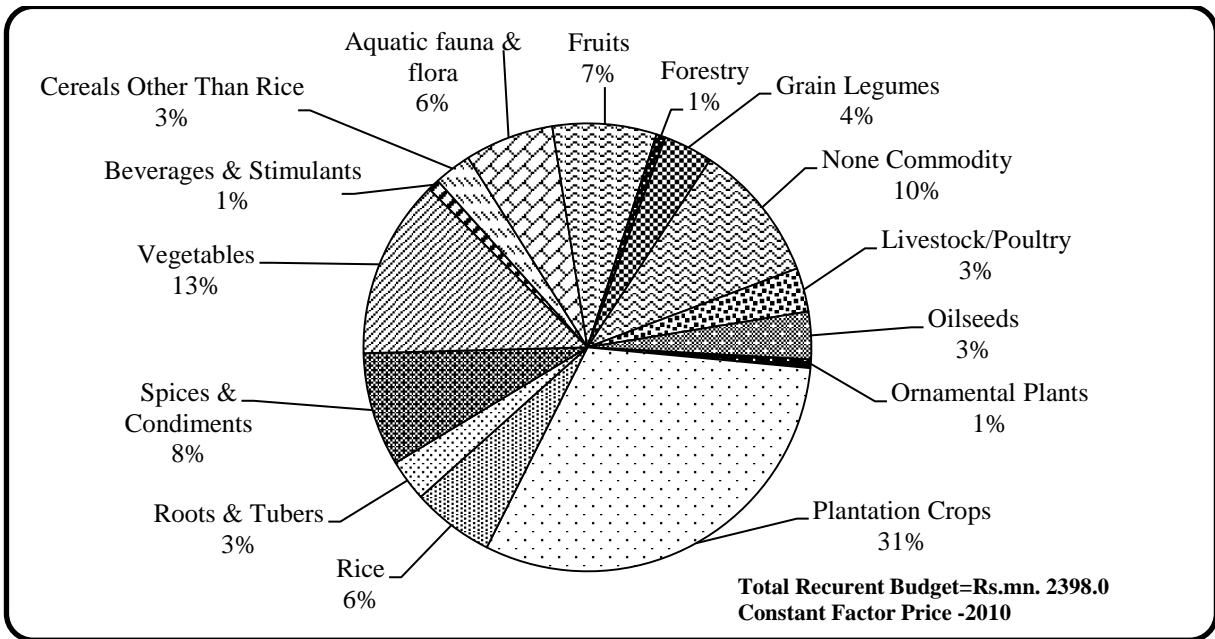
**Figure 19-T.R. Budget by Discipline at NARS - 2018**

Source: INFORM –National Database-2018

### NARS Recurrent Budget by Commodity Group

Research projects were classified into 15 Commodity Groups namely; Aquatic fauna & flora, Beverages & Stimulants, Forestry, Fruits, Grain Legumes, Livestock& Poultry, Maize & Finger Millets, None commodity, Oil crops, Ornamental Crops, Plantation Crops, Rice, Root &Tuber Crops, Spices & condiments and Vegetables. Figure 20 shows how the Total Recurrent Budget was allocated among the commodity groups in 2018.

Figure 20 depicts the distribution of budget among major commodity groups in 2018. Commodity-based research accounted for 90% of the total recurrent budget while remaining 10% was accounted for non-commodity research mainly research related to socio economics and policy analysis. The Plantation Crop sector, comprising of coconut, rubber, sugarcane, tea and Palmyrah spent about 31% of the total budget. This was followed by vegetables (12%), Spices & Condiments (8%) and Fruits (7%). Six percent of total budget was spent on each Aquatic fauna & flora and Rice sector while 4% of the total budget was spent on grain legumes and 3% each for Roots and tuber crops, Cereal other than rice, oil seeds and Livestock and Poultry. One percent the budget was incurred on Ornamental plants, Forestry and beverages and stimulants in 2018.

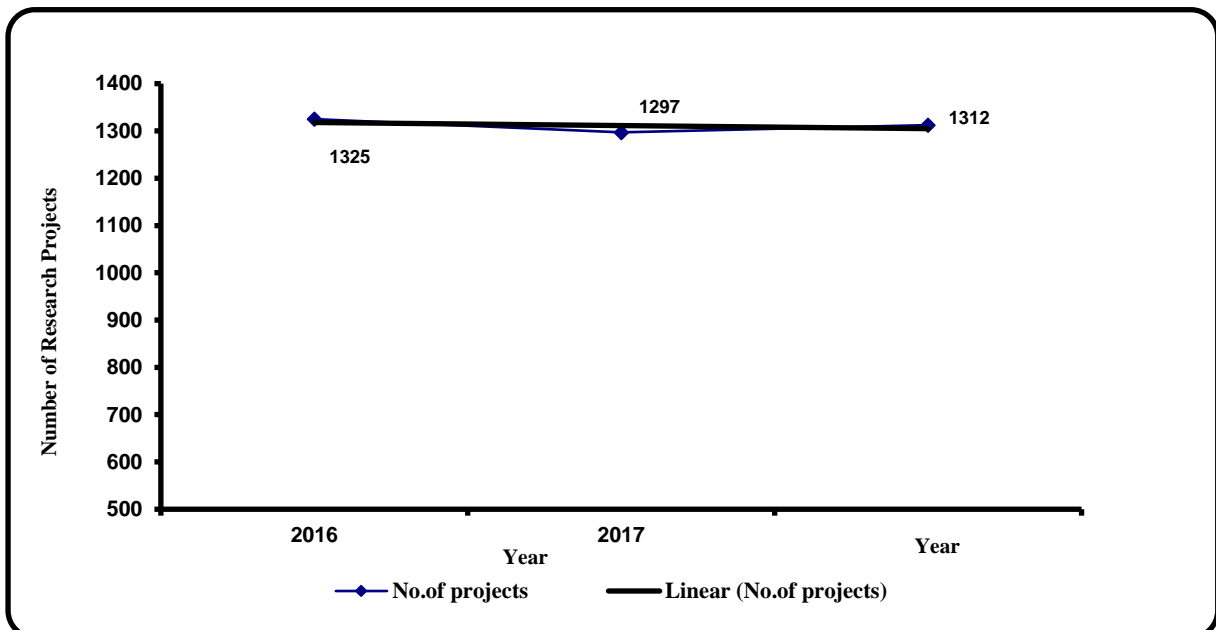


**Figure 20-T.R. Budget by Major commodity Group at NARS - 2018**

Source: INFORM –National Database-2018

### Research Projects conducted at NARS in 2018

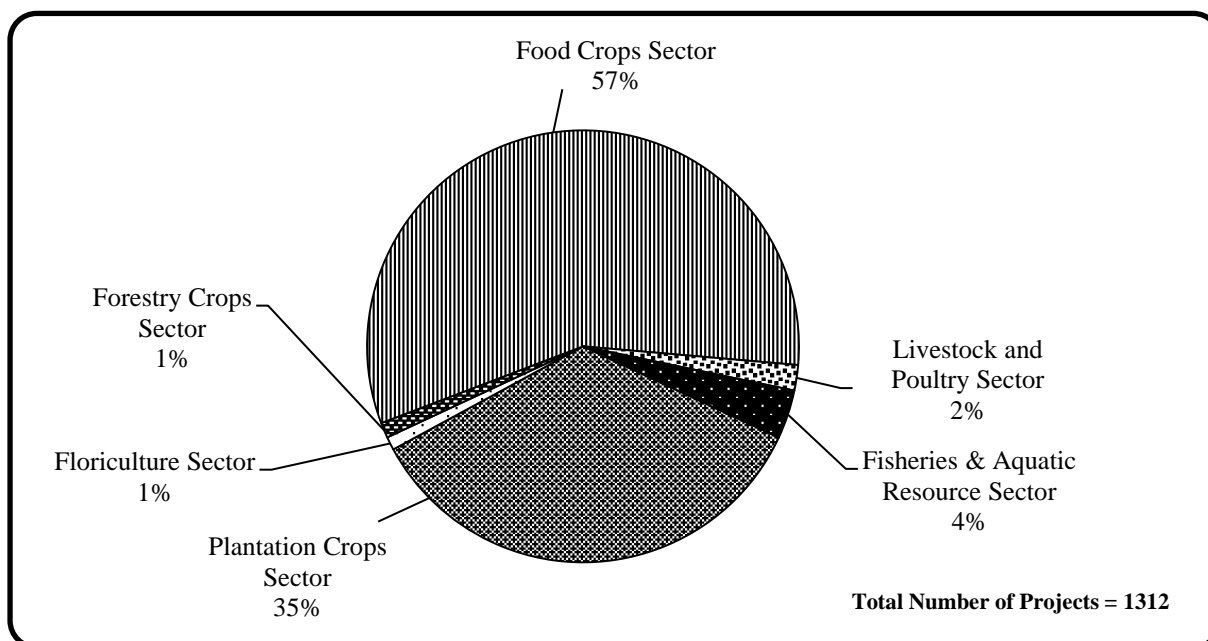
Figure 21 shows the Number of projects conducted by NARS institutes during the period from 2016 to 2018. A slight negative trend was shown, with respect to the number of projects conducted during the period of 2016-2018. In comparison to the previous year, the number of projects in year 2018 was increased by 15 while in comparison to the year 2016 it was decreased by 13.



**Figure 21-Number of Research Projects Conducted by NARS 2016-2018**

Source: INFORM –National Database-2018

## Numbers of Projects Conducted by Six different Sectors



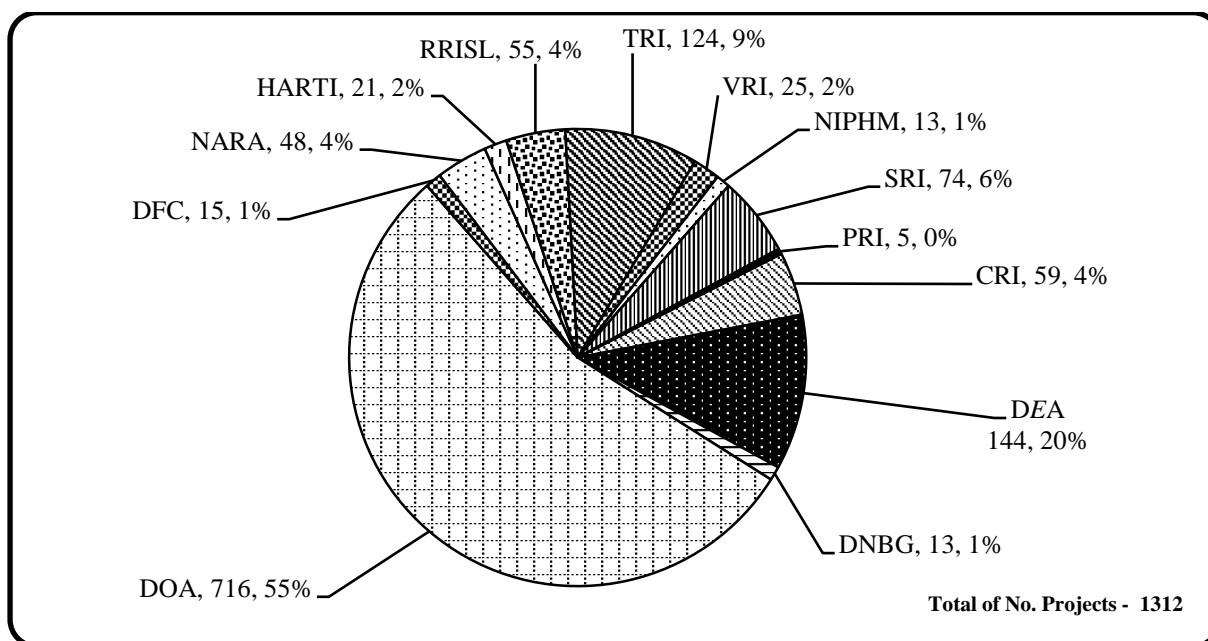
**Figure 22-Number of Research Projects Conducted by Sector in NARS -2018**

Source: INFORM –National Database-2018

Figure 22 depicts how research projects were distributed among six sectors of the NARS. Fifty seven percent of projects were done by the Food crops sector which includes fruits, other field crops rice, roots & tuber crops and vegetables. Plantation crops sector accounted for 35% of the total projects which consisted of export agricultural crops (beetle, cardamom, clove, cinnamon, citronella, cocoa, coconut, ginger, Goraka, kithul, palmyrah, pepper, rubber, sugarcane, tea, and turmeric) and it was followed by Fisheries & Aquatic Resources (4%). Livestock and poultry sector accounted for 2% of the total projects while each Forestry crops sector and Floriculture crops Sector has 1% of the total projects.

## Numbers of Projects Conducted by Institutes/Departments

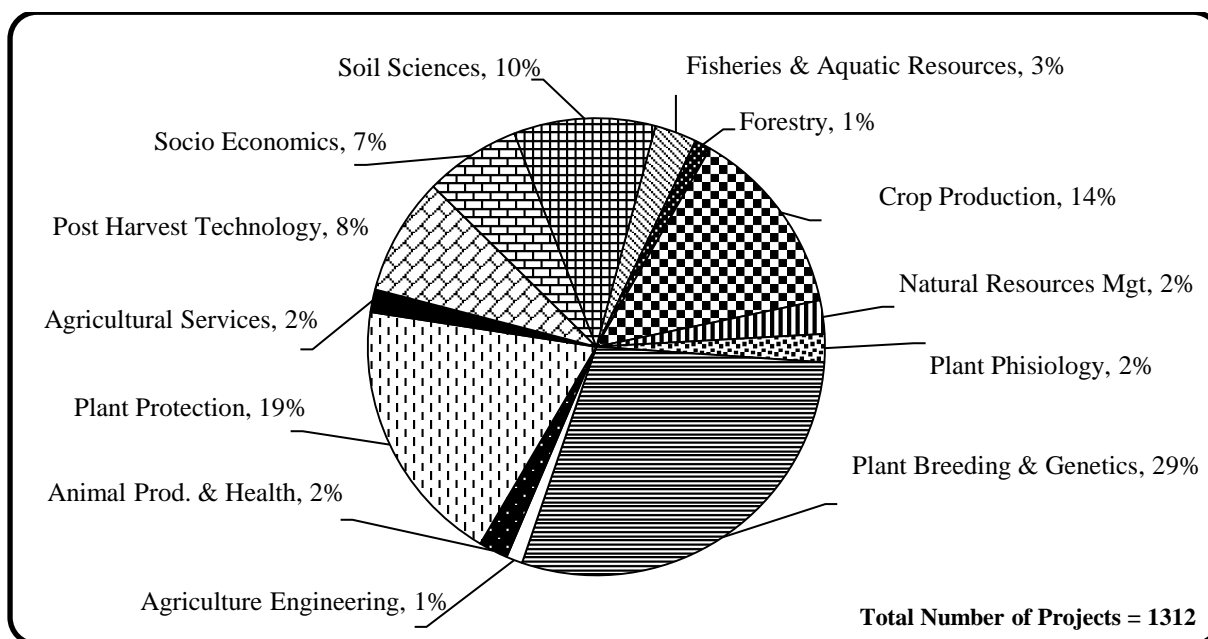
Figure 23 shows the distribution of the research projects among different institutes in NARS (both value and percentage). Out of the total of 1312 projects, DOA conducted nearly 55% of the total projects by conducting 716 projects out of 1312. The second highest was done by DEA (20%) and conducted 144 projects and this was followed by TRI (9%) by conducting 124 of the total. The number of projects conducted by SRI was 74 and it was 6% of the total. Each CRI, RRI and NARA was responsible for 4% of the total while each HARTI and VRI conducted 2% of the total project. One percent of the total was conducted by each NIPHM, DNBG and DFC. PRI conducted 5 projects in year 2018 but it was shown as zero as its share was less than one of the total.



**Figure 23-Number of Research projects by Institute in NARS -2018**

Source: INFORM –National Database-2018

### Numbers of Projects by Disciplines



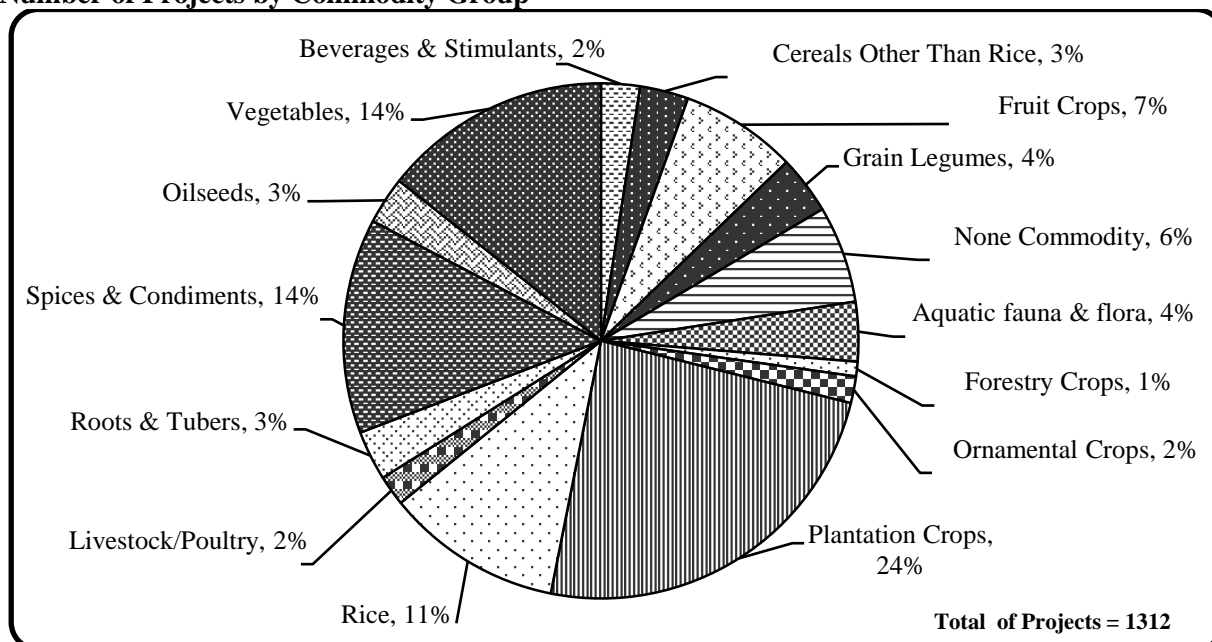
**Figure 24-Number of Projects by Major Disciplines at NARS - 2018**

Source: INFORM –National Database-2018

Figure 24 shows the distribution of research projects conducted in 2018 based on discipline. Out of the total of 1312 research projects, 29% (382) was on Plant breeding and genetics and this was followed by the discipline of Plant protection (19%) and there were 248 projects. Fourteen percent of the total research projects were on Crop Production by conducting 176 projects. Soil science and Socio Economics recorded

10% and 7% respectively. No of projects related to Aquatic science and Animal Production were comparatively low than projects related to crops. Animal Production and Fisheries & Aquatic science accounted for 3% and 2% of the total projects respectively. Only 15 projects were recorded on forestry sector and it depicts in the figure 24 as zero as the percentage is less than one.

### Number of Projects by Commodity Group



**Figure 25-Number of projects by Commodity Group of the NARS during 2018**  
**Source: INFORM –National Database-2018**

No of projects carried out in 2018 by the NARS can be categorized in to 15 major commodity group and its distribution was illustrated in the Figure 25. Out of the total projects 94% was commodity base only 6% was on non-commodity. Out of the total of 1312 projects, the highest number of projects was on plantation crops (24%) including Tea, Rubber, Coconut, sugarcane and Palmyrah. Each vegetables and spices & condiments accounted for 14% of the total. Eleven percent 11% researches conducted on Rice while Fruit crops recorded 7% of the total projects. Projects conducted on grain legumes, Aquatic flora and fauna were 4% each. Each Oil crops, cereals other than rice and Root & Tuber accounted for 3% of the total. Two percent of the total budget was accounted by each Livestock/Poultry, Ornamental crops, and Beverages & Stimulants. Forestry crops accounted for 1% of the total.

## Conclusions

### Human Resources

There were 539 scientists in the NARS in 2018 and in 2017 and 2016 the total number of scientists in the NARS were 521 and 513 respectively. With respect to number of scientist in the NARS, though there is a slight increase, it is not significant increase. Scientists in the NARS were involved in different activities. Based on these activities, their time was classified in to five categories; Research, Management & Administration, PG Studies, Technology Transfer and Technical Services. During the year 2018, 54% of total time of scientists was spent on research. Remaining 46% was spent for the non-research activities. This is look like that out of 539 scientists only 291 engage in research and rest of the scientists involved in non-research activities. Hence with respect to total projects in year 2018, 1312 were carried out by 291 scientists which implies that one scientist had to accomplish about 5 projects. This can be negatively affected on research and the quality of the research may be reduced. Therefore, it was obvious that the number of scientists in the NARS are not sufficient to carry out research effectively and this is a very unfavorable situation of the NARS.

In the context of agricultural research and development, technology transfer is defined as a process to facilitate and expedite the creation and dissemination of technology for adoption of users. In 2018, only 11% of the time was allocated for the technology transfer activities and that means only about 59 scientists' time is involved in technology transfer. This situation is also not favorable as to get the benefit of research it must be taken to the users. If the technology transfer time is small, dissemination of the technology is also low. Therefore it is necessary to allocate more time on technology transfer activities.

This report also showed that 27% of the scientists have not received formal training to undertake research. It is to note that, 143 scientists out of 539 were untrained who were having either basic degree or diploma or non-degree. Sixty two percent of scientists, in the disciplines of Agriculture Engineering was untrained while more than 50% of scientists of other disciplines were trained. However out of this trained scientists only 39% have research degrees such as M.Phil. and PhD. Rest of 61 have only MSc. Therefore policy makers must consider these things when developing the HRD plans. Scientist should have PhD, MPhil or MSc by Research to carry out effective quality research. However, the post graduate training capacity is not sufficient for scientists. Hence the policy makers should seriously consider human resource development, as a priority need as adequate qualified research staff is the first and foremost prerequisite for a research institution to carry out effective quality research.

The age pyramid is also unsatisfactory as there are few researchers in the lower age categories. Only 187 scientists were in lower age categories (less than 40 years) and 51 scientists out of the total were older than 56 years while 123 and 177 were in age groups 40-45 and 45-55 years respectively. Accordingly

51 scientists will be retired within 1 to 4 years. Therefore policy makers should consider the recruitment of new scientists.

Distribution of scientist in different sector not favorable for the development of the sectors of Livestock/Poultry, Fisheries and aquatic resources, floriculture and forestry as very low number of scientists were attached to those sectors compare to the sectors of Plantation and Food crops sectors.

With respect to the research disciplines there were sufficient scientist were qualified in major disciplines such as Plant Breeding & Genetics, Crop Production, Plant Protection, and Post-Harvest Technology. However there were sufficient scientists in the disciplines of Agricultural Engineering, Floriculture, Forestry, Livestock/Poultry and Fisheries & Aquaculture. Therefor policy makers and Research should consider this situation seriously recruit more scientists in those research disciplines.

### **Recurrent Budget**

The total allocation of research for year 2018 was Rs. 2398.11 Million (Constant Factor Price-2010). Compared to last year allocation of Rs. 2,519.88 Millions (Constant Factor Price-2010), there was a decrease of Rs122 Mn. During the period of past three years the research allocation has decreased gradually hence negative trend has been shown during the last three years. This negative trend of research allocation may be due to the budgetary cuts by the Treasury and high inflation of the rupee value.

The research investments as a proportion of agricultural GDP in years 2016, 2017 and 2018 were 0.46, 0.34 and 0.34 respectively. When compared to the previous year (2017) share of the research investments out of agriculture GDP remained same but compared to the year 2016 (0.46) it was decreased. The proportion of the research investment on the agricultural GDP in developed countries is about 5%. Other developing countries allocated more than 1% therefore the research investment for the Year 2018 was not sufficient to carry out effective research in Sri Lanka.

The largest share (37%) of total budget was accounted for the Research Personnel Cost and this was followed by the Administration and management Cost (22%). The budget allocated for these two categories was used to pay the salaries and other personnel emoluments. Therefore 59% of the total allocation was for salaries and other personnel expenditure. This indicates that even in the limited money allocated research, larger share (59%) was spent on salaries. The allocation for Materials &Supplies and Transport were about 9% and 6% respectively. The money allocated for the miscellaneous activities were about 9%. Part of the miscellaneous allocation was again for the salaries of scientists, who were engaged in post graduate studies. Repairs and Maintenance Cost accounted for 12% of the total while four percent (4%) of the total money goes to Technology Transfer. Utilities and Facilities cost accounted for. 1%.



The money allocated for research institutes were spent mainly for the salaries of the research and non-research staff. The money allocated for materials and supplies and travel was very low. Hence there was no sufficient money allocation for the research activities. The money allocated for the technology transfer was also very low. Each institute has a separate budget for the technology transfer (extension) under the development vote. This allocation was very large and it was not included in this database. The technology transfer allocation for this database was mainly for scientist's salaries and other small purchasing of scientific books and journal publishing and workshops etc. Hence the funds allocated for research was accounted for the salaries. This situation was not favorable for effective research for development in agriculture sector in Sri Lanka. Therefore, increase of the research funding should be considered. Policy makers should consider of allocating more funds for the Materials and Supplies and Transport and Travel.

Sector wise fund distribution was not favorable for the development of the sectors except Food Crop Sector and Plantation Crop Sector. The highest allocation was accounted by the Food Crop Sector (54%) and it was followed by the Plantation Crop Sector (36%). The balance 10% was allocated for the all other four sectors; Fisheries & Aquatic Resources (6%), Livestock & Poultry Sector (3%), Forestry (1%) and Floriculture less than one percent. The Fisheries & Aquatic Resources and Livestock & Poultry Sector are very important sector more opportunities to develop country and many unexploited areas are there for income generation. Floriculture Sector has a huge potential to generate foreign exchange.

## **Research Projects**

During the 2018 1,312 research projects were conducted by the 13 research organizations, at NARS under different disciplines and commodities. With respect to the previous year the total projects were increased by 15 numbers. The sector wise distribution was not favorable as Food Crop Sector (57%) and Plantation Sector (35%) carry out 92% of the total projects. This will affect badly for the development of the other sectors; Fisheries & Aquatic Resources, Livestock & Poultry Sector), Forestry and Floriculture.



## **Part 2**

### **Graphical illustration of INFORM- Institutes/Departments 2018**



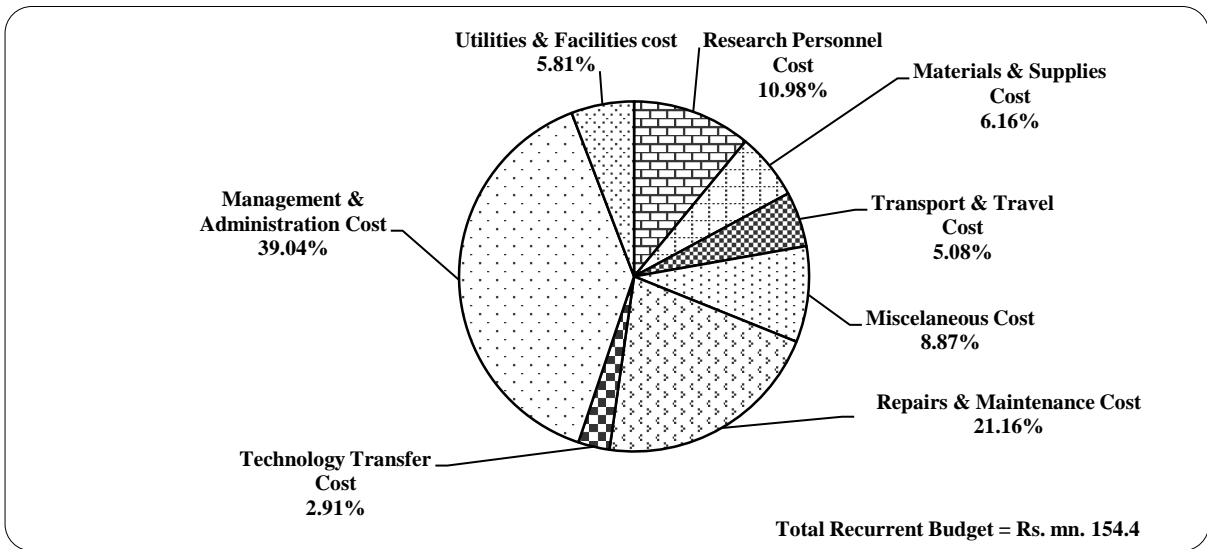


Figure 26-CRI's Recurrent Budget (%) by Activity - 2018

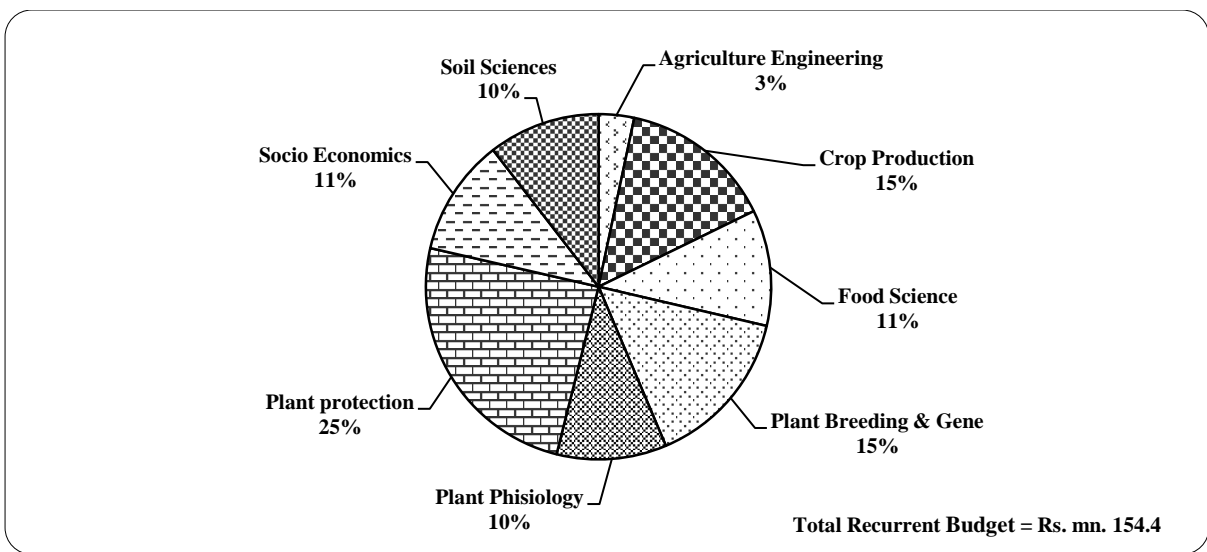


Figure 27-CRI's Recurrent Budget (%) by Discipline - 2018

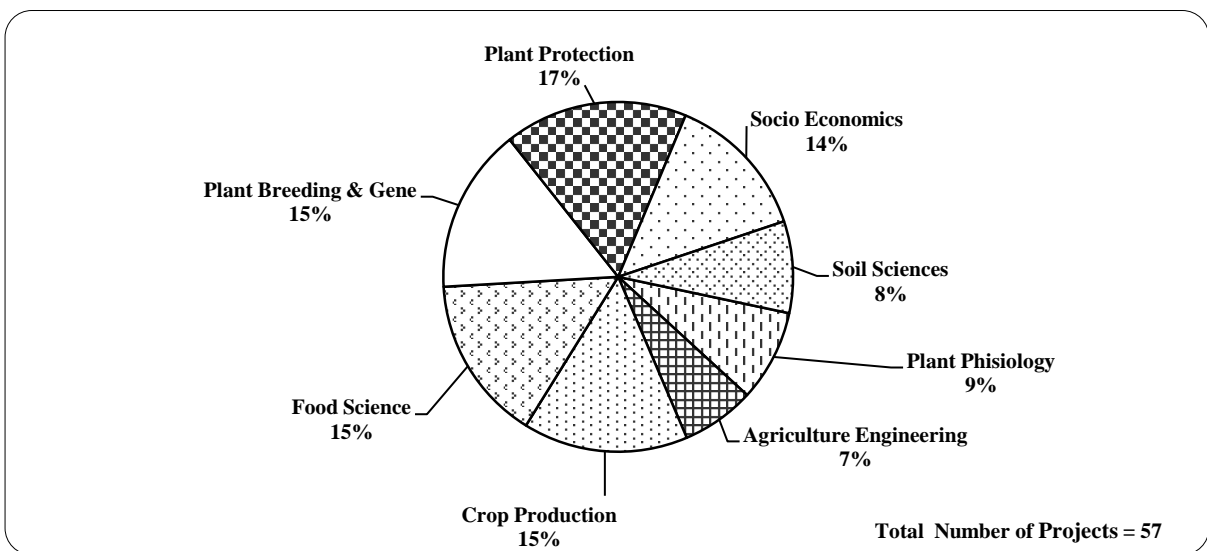


Figure 28-Number of Research Projects (%) by Discipline at CRI - 2018

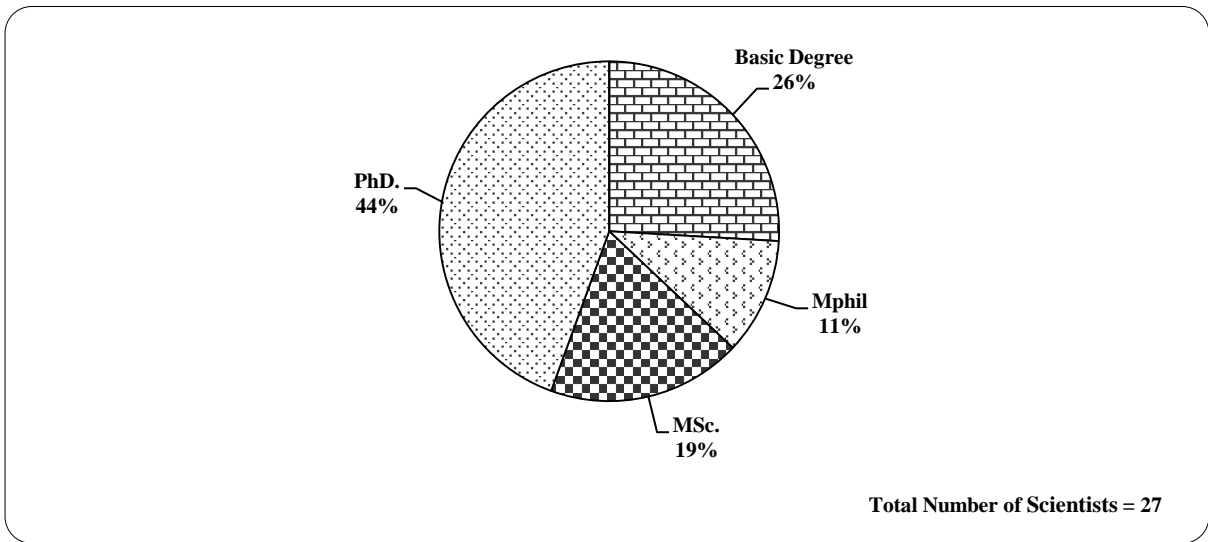


Figure 29-Numbers of Scientists (%) by Highest Academic Qualifications at CRI - 2018

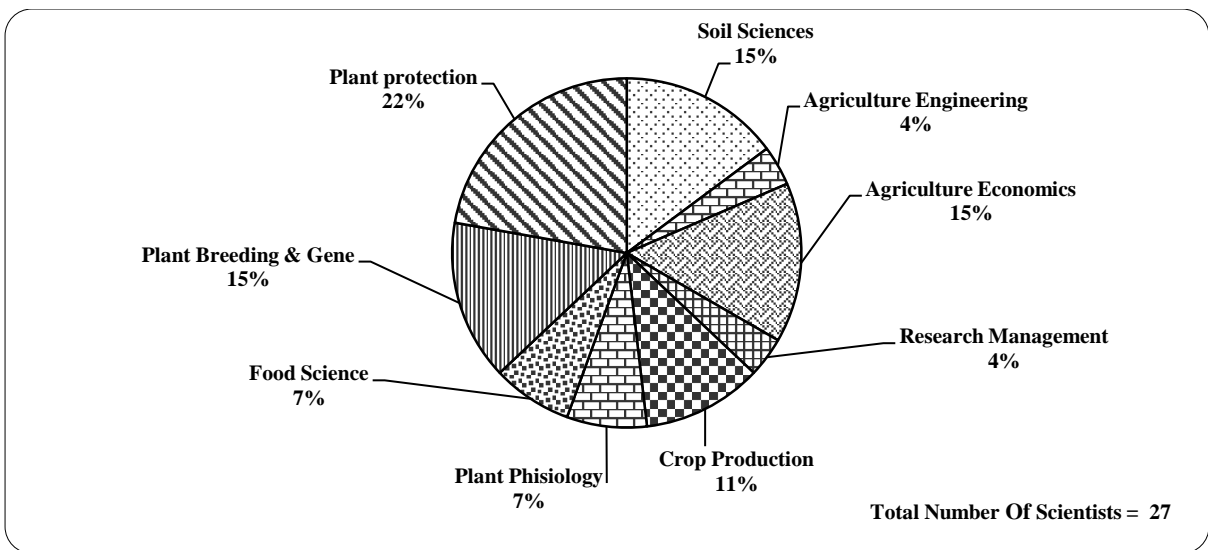


Figure 30-Numbers of Scientists (%) at CRI by Discipline - 2018

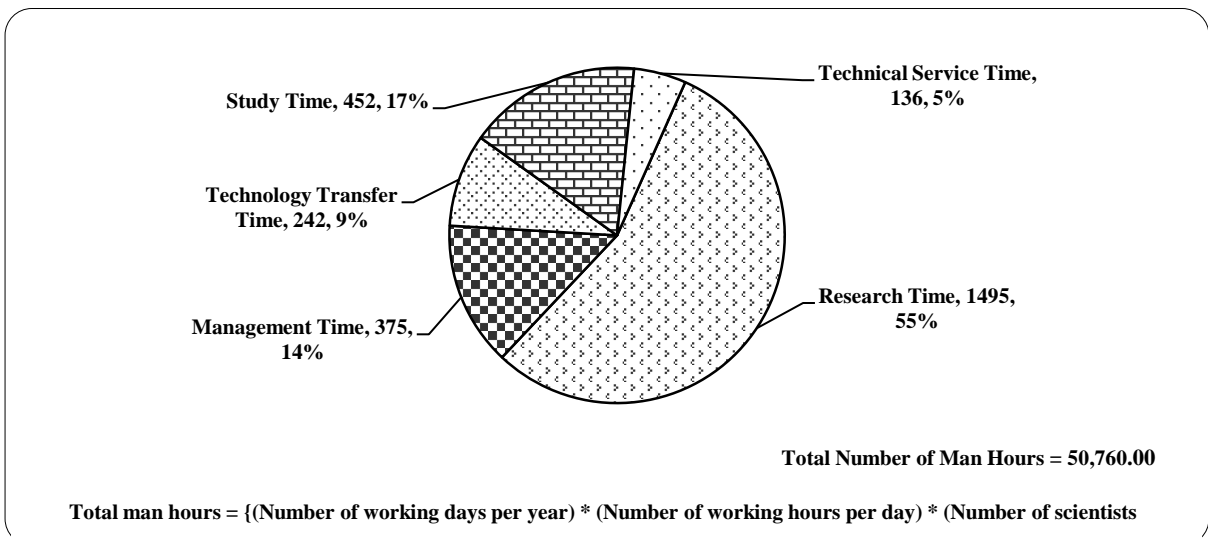


Figure 31-How Scientists Spent (%) Time at CRI - 2018

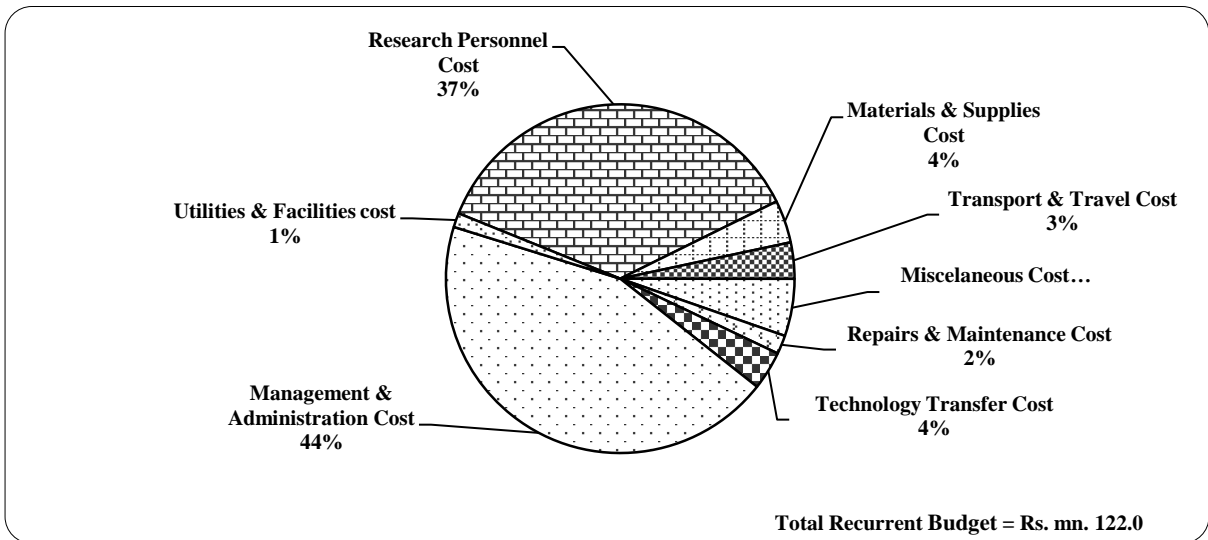


Figure 32-DEA's Recurrent Budget (%) by Activity - 2018

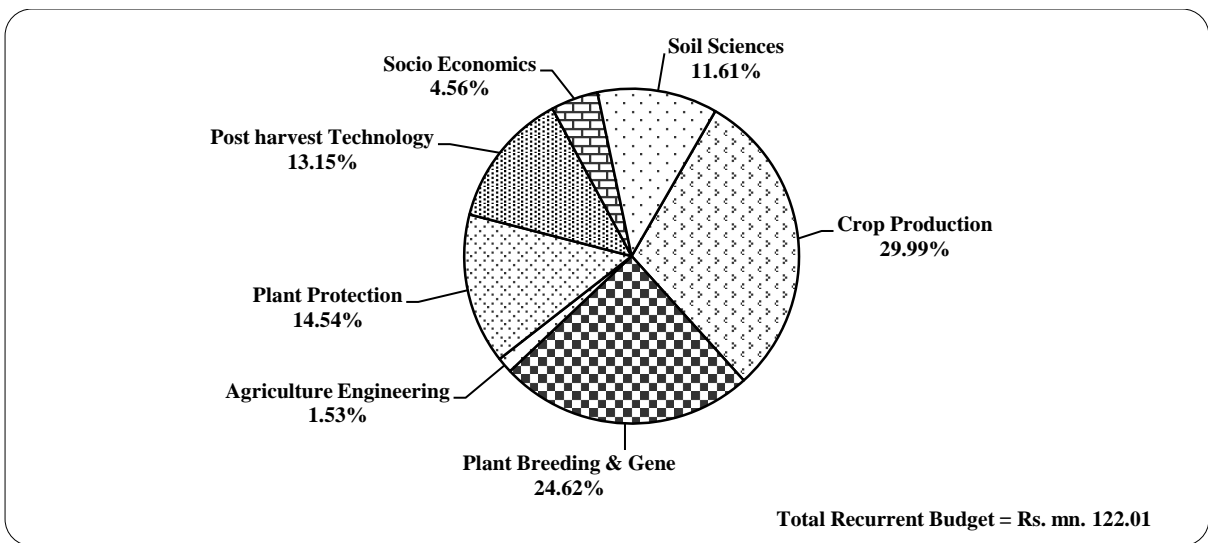


Figure 33-DEA's Recurrent Budget (%) by Discipline - 2018

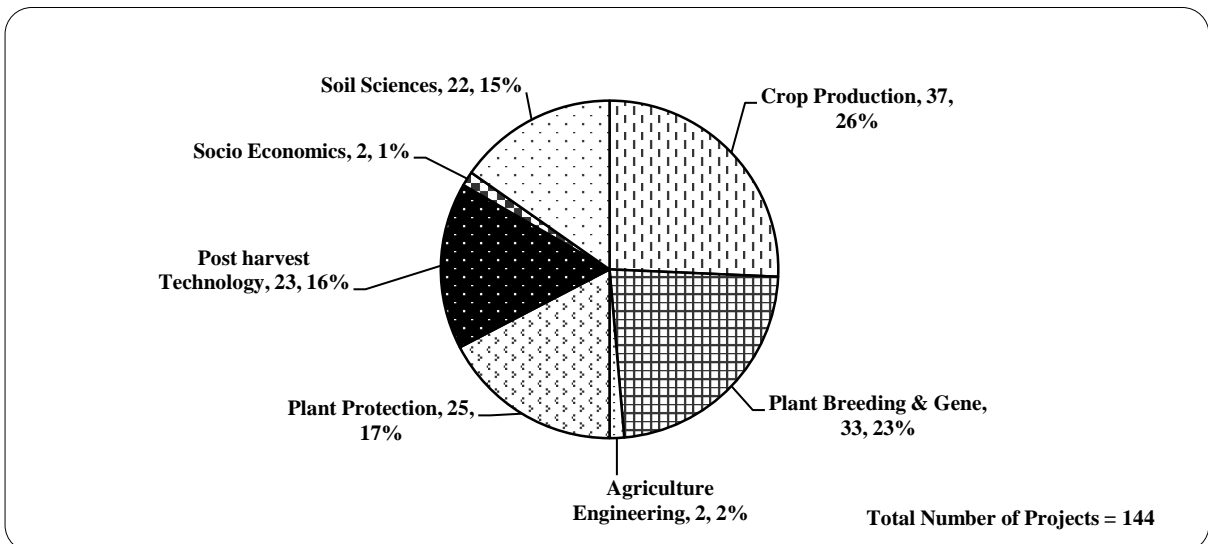


Figure 34-Number of Research Projects (%) by Discipline at DEA - 2018

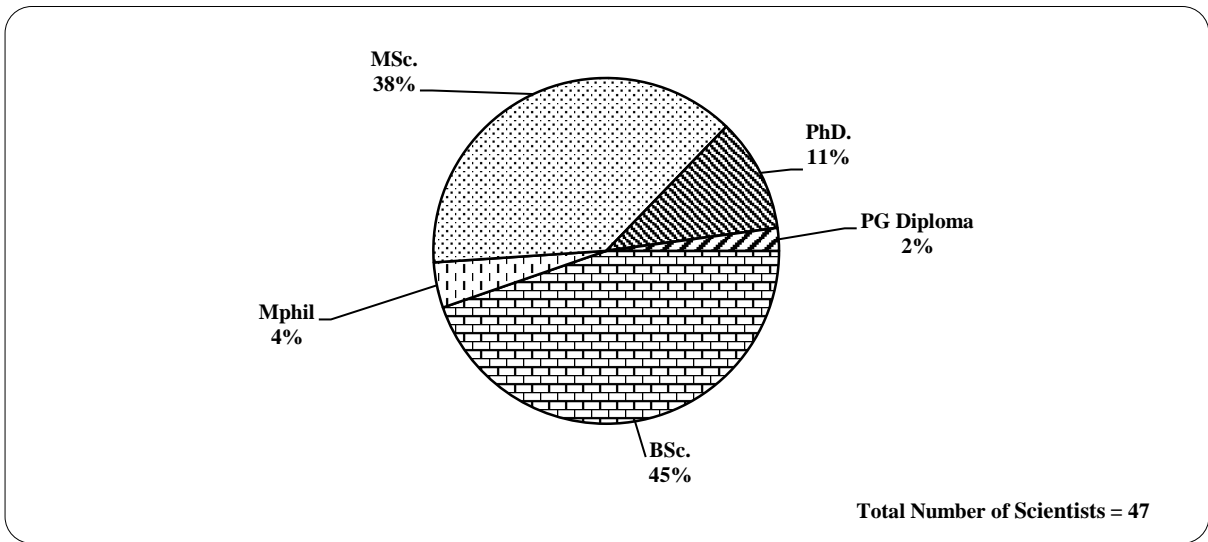


Figure 35-Numbers of Scientists (%) by Highest Academic Qualifications at DEA - 2018

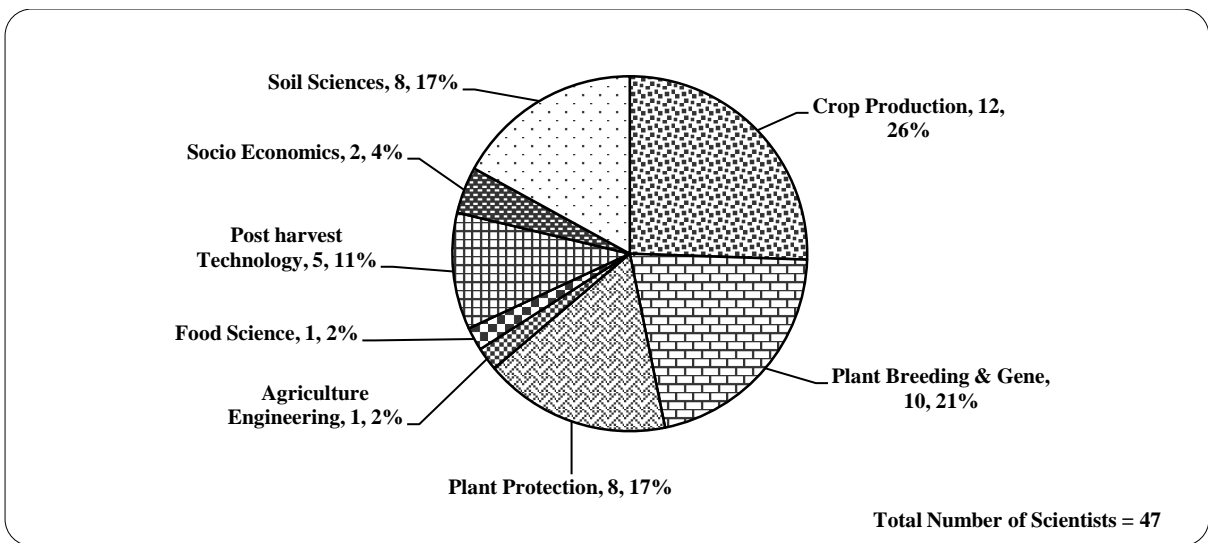


Figure 36-Numbers of Scientists (%) at DEA by Discipline - 2018

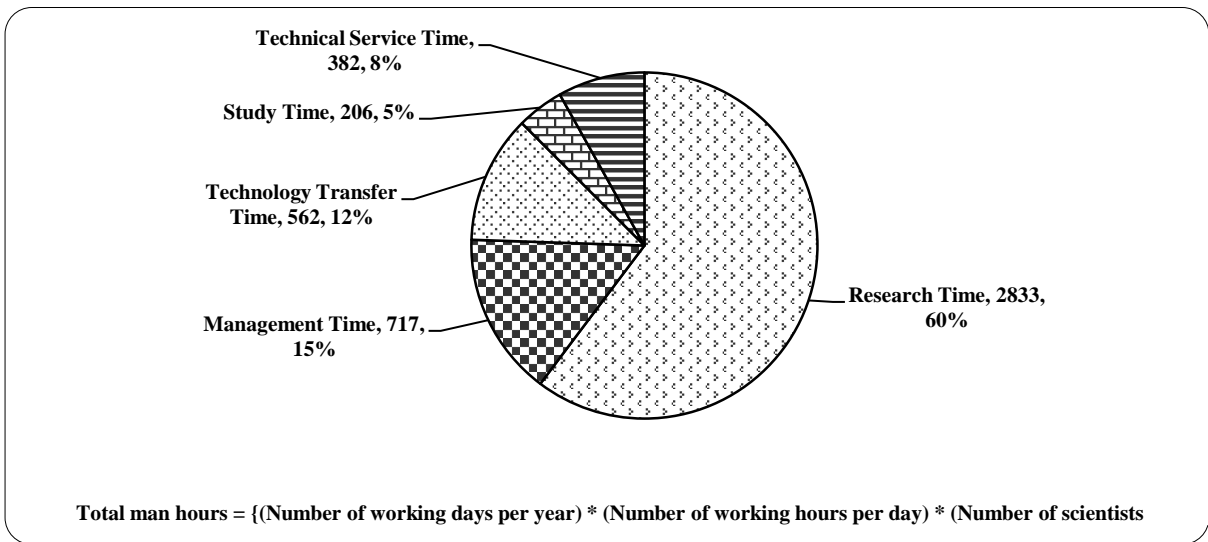


Figure 37-How Scientists Spent (%) Time at DEA - 2018



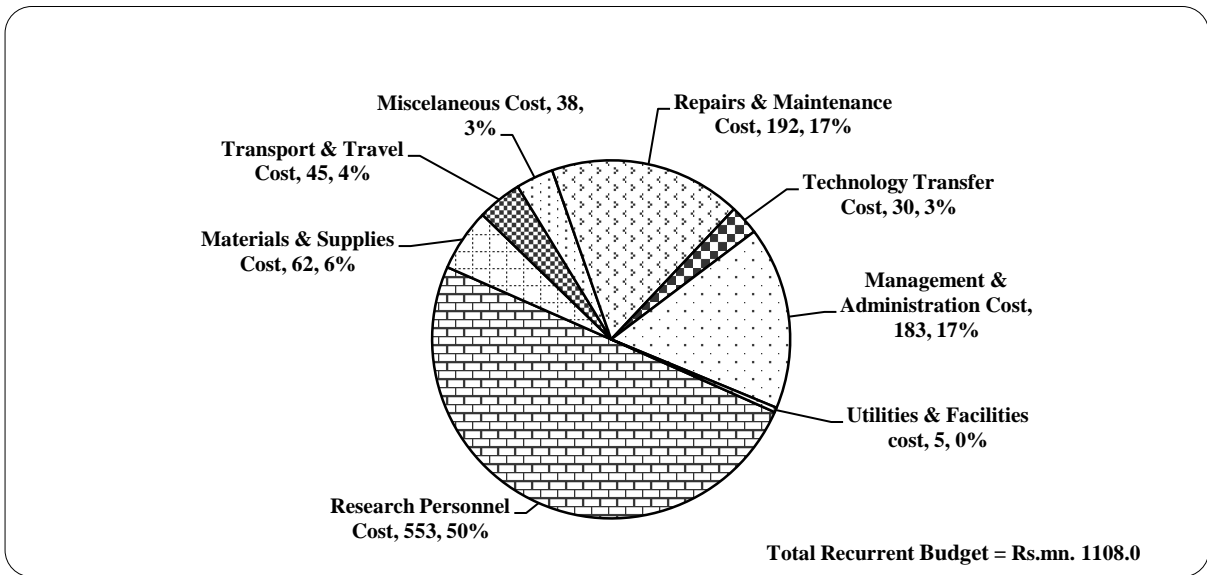


Figure 38-DOA's Recurrent Budget (%) by Activity - 2018

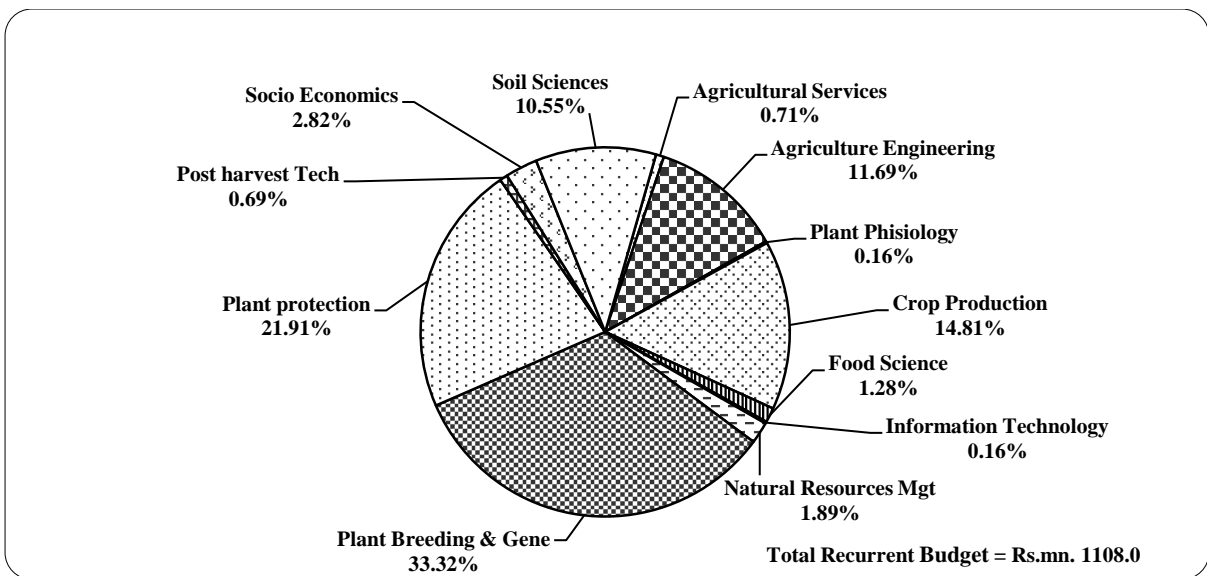


Figure 39-DOA's Recurrent Budget (%) by Discipline - 2018

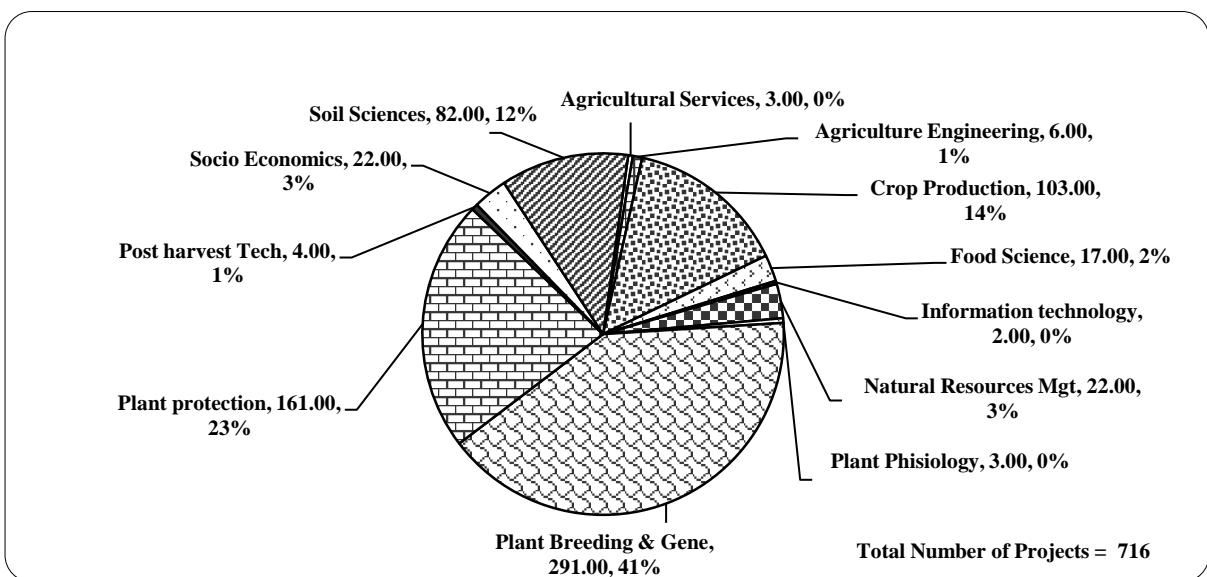


Figure 40-Number of Research Projects (%) by Discipline at DOA - 2018

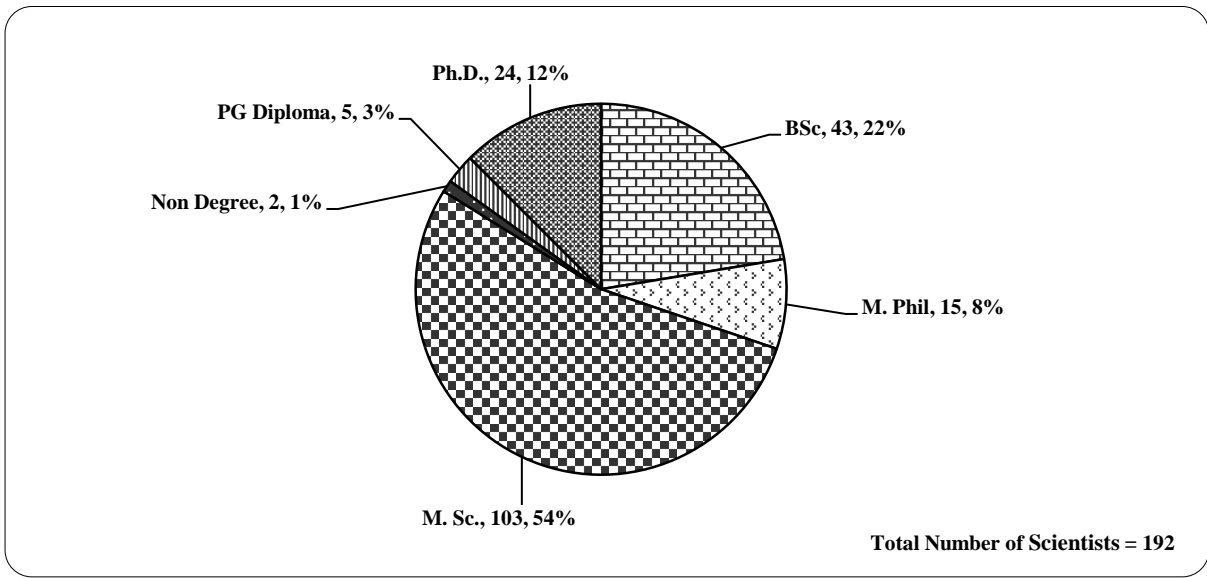


Figure 41-Numbers of Scientists (%) by Highest Academic Qualifications at DOA - 2018

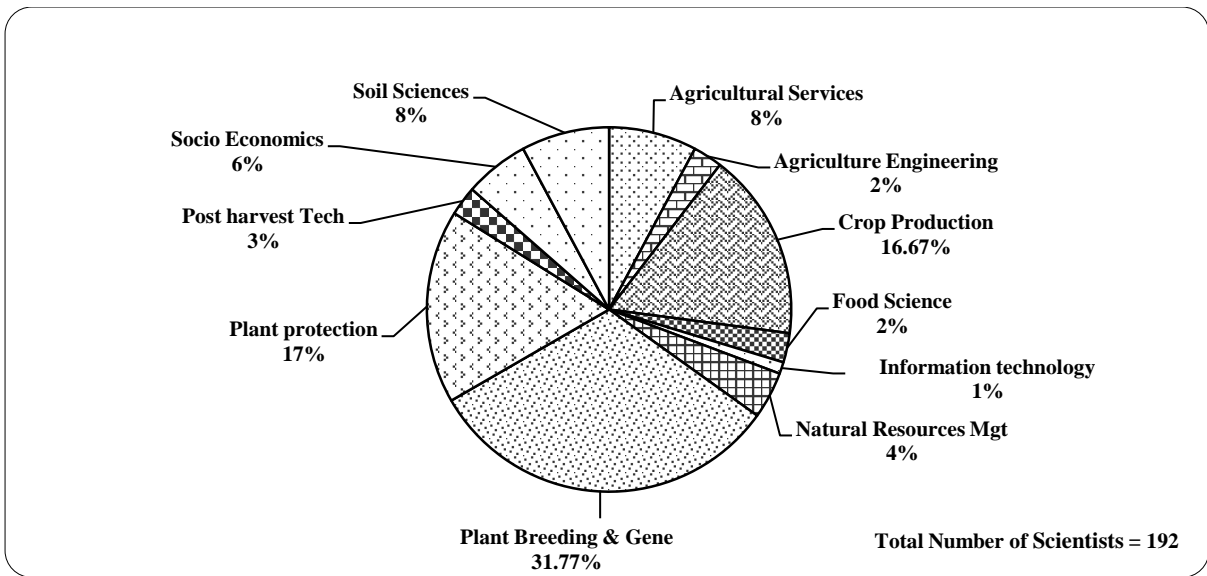


Figure 42-Numbers of Scientists (%) at DOA by Discipline - 2018

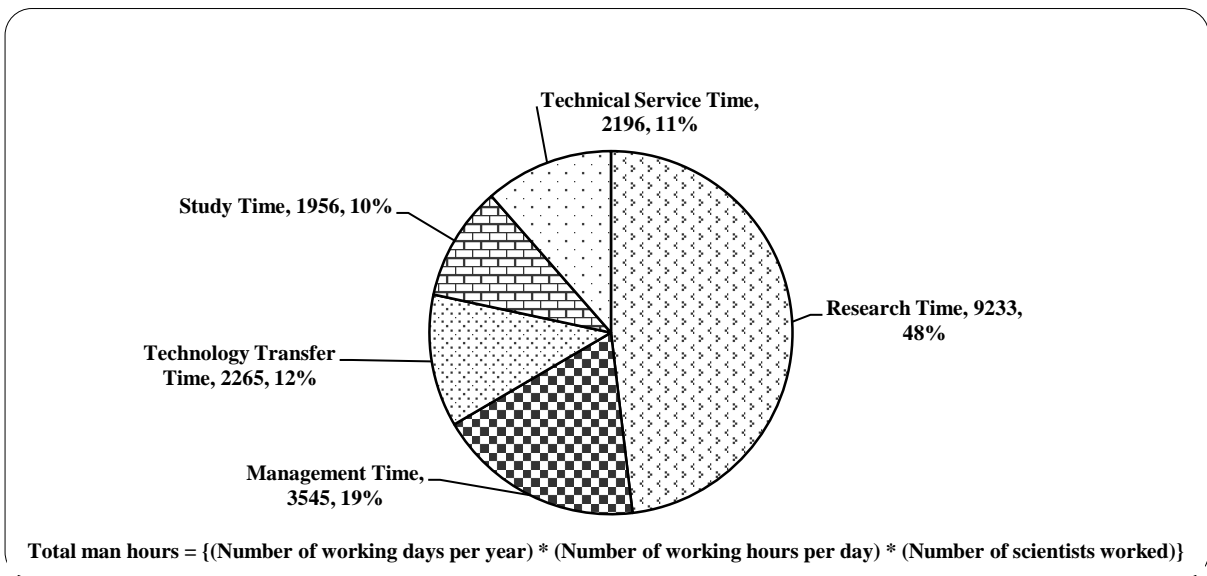


Figure 43-How Scientists Spent (%) Time at DOA -2018

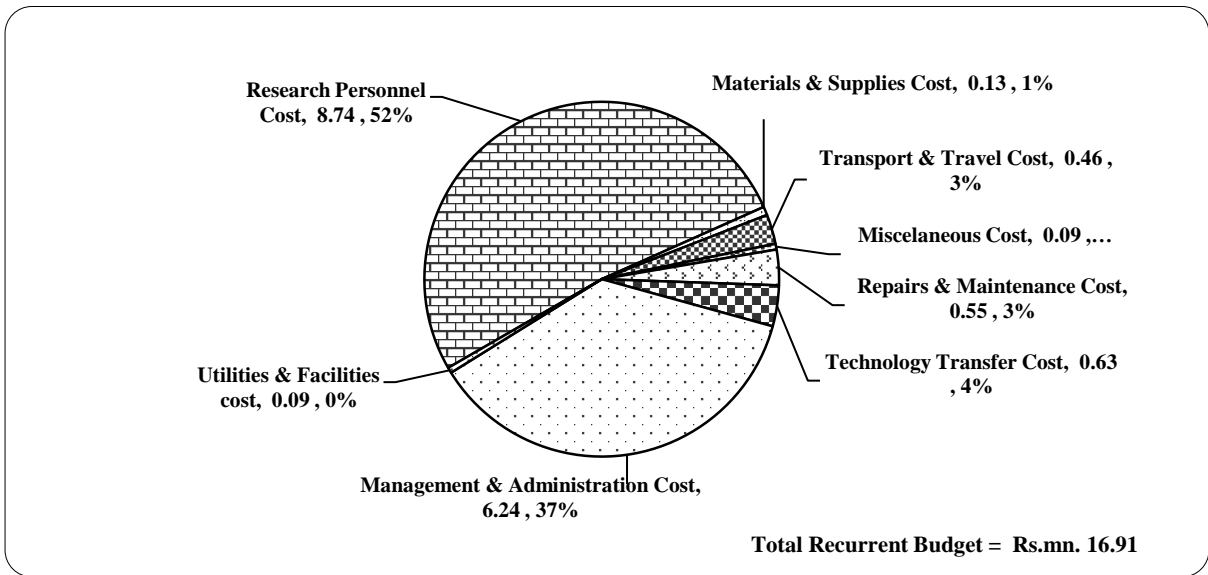


Figure 44-DFC's Recurrent Budget (%) by Activity - 2018

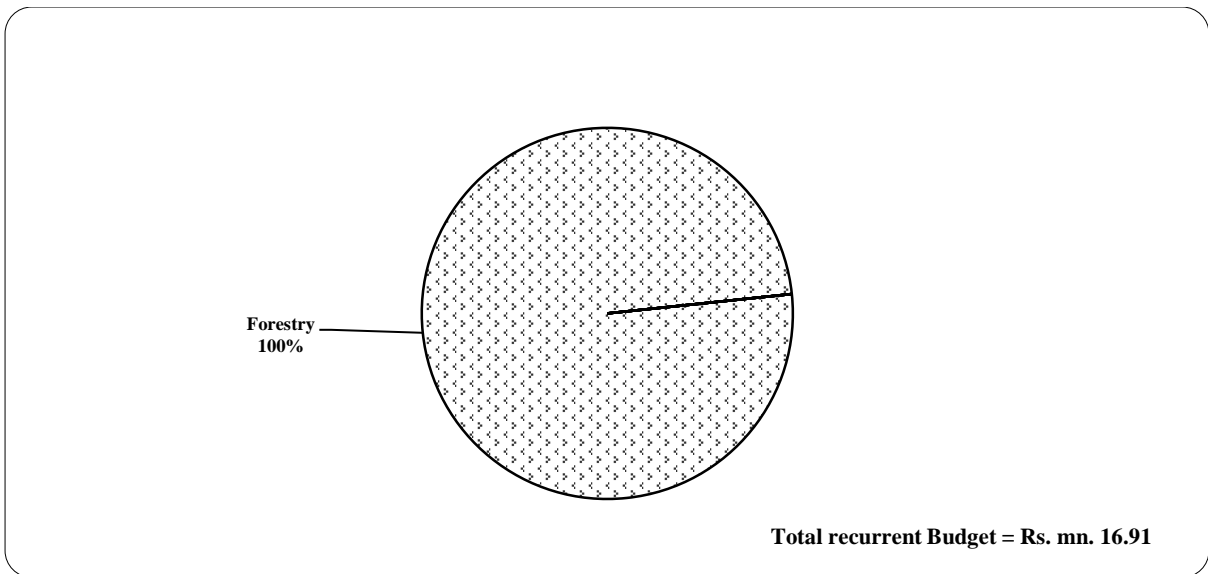


Figure 45-DFC's Recurrent Budget (%) by Discipline - 2018

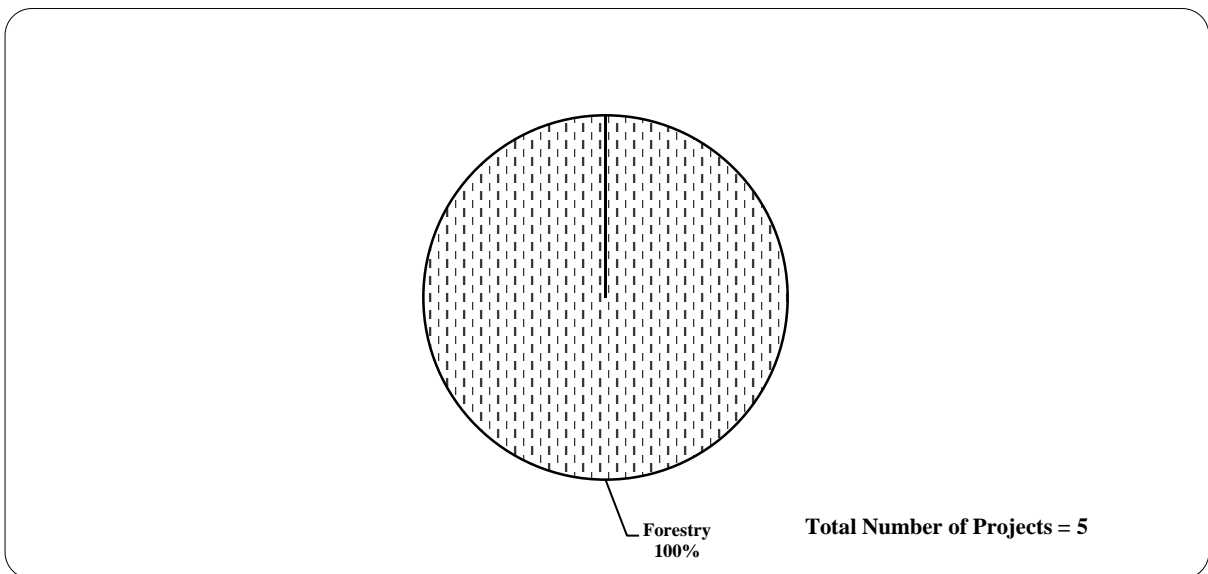


Figure 46-Number of Research Projects (%) by Discipline at DFC - 2018

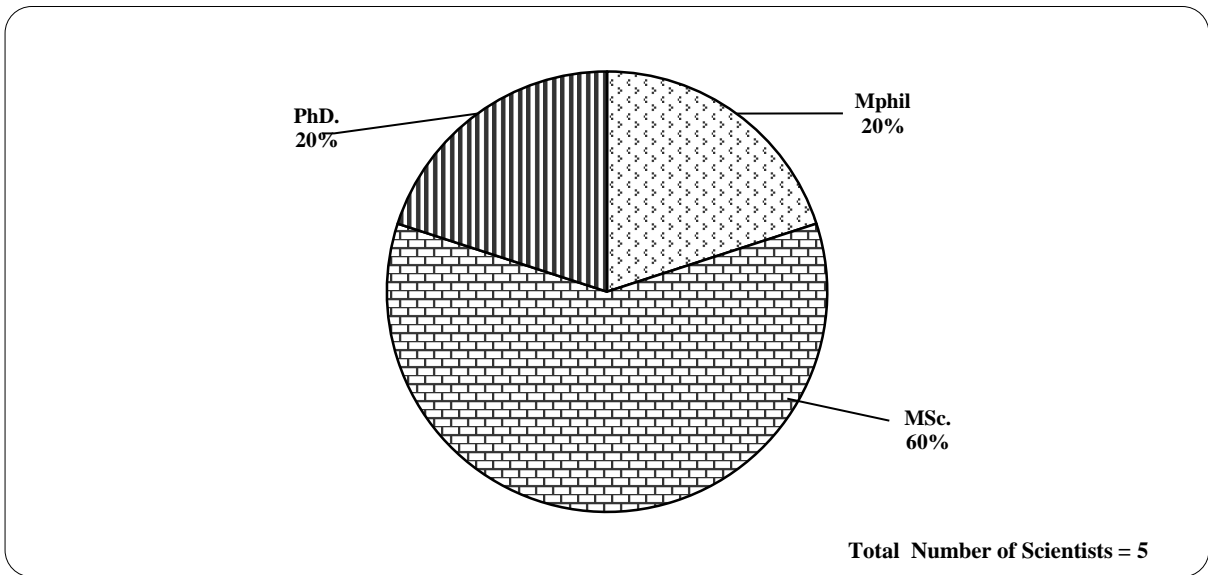


Figure 47- Numbers of Scientists (%) by Highest Academic Qualifications at DFC - 2018

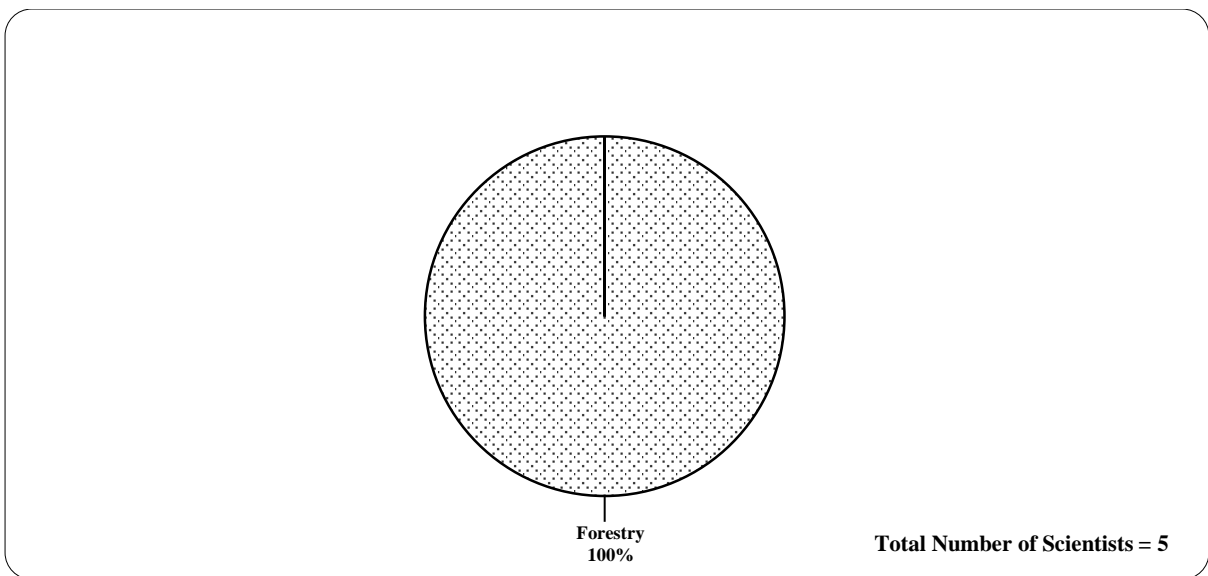


Figure 48-Numbers of Scientists (%) at DFC by Discipline - 2018

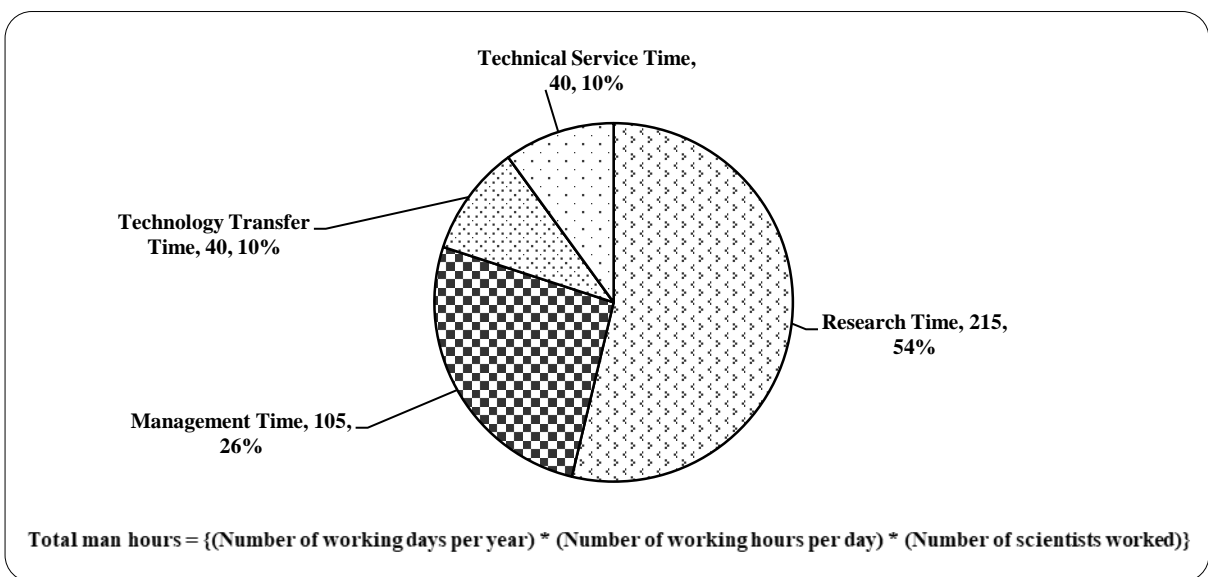


Figure 49-How Scientists Spent (%) Time at DFC - 2018

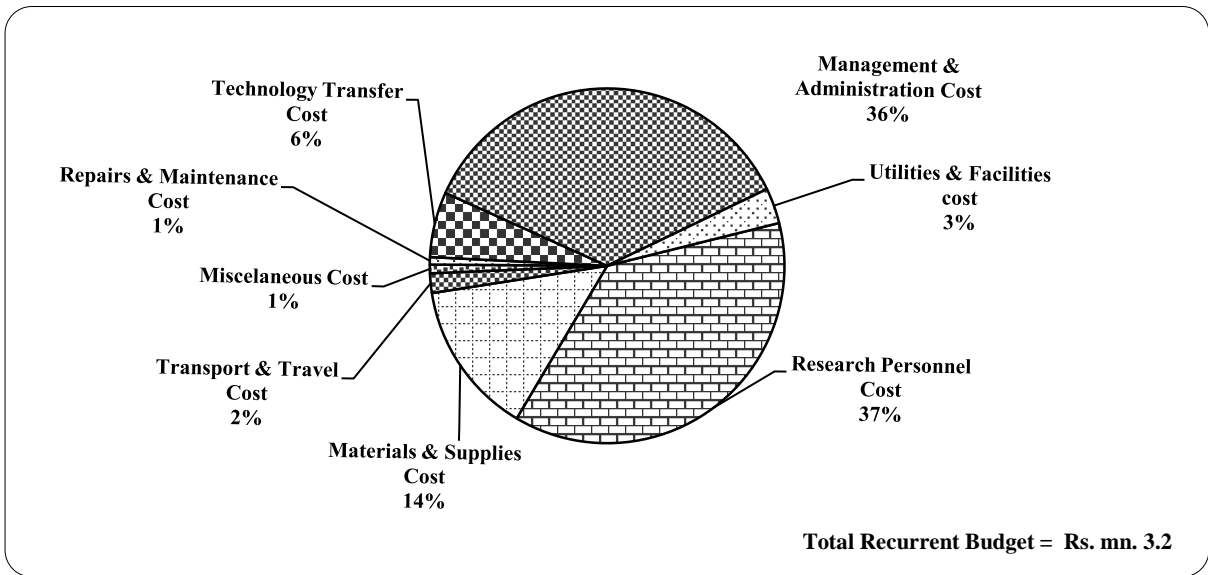


Figure 50-DNBG's Recurrent Budget (%) by Activity - 2018

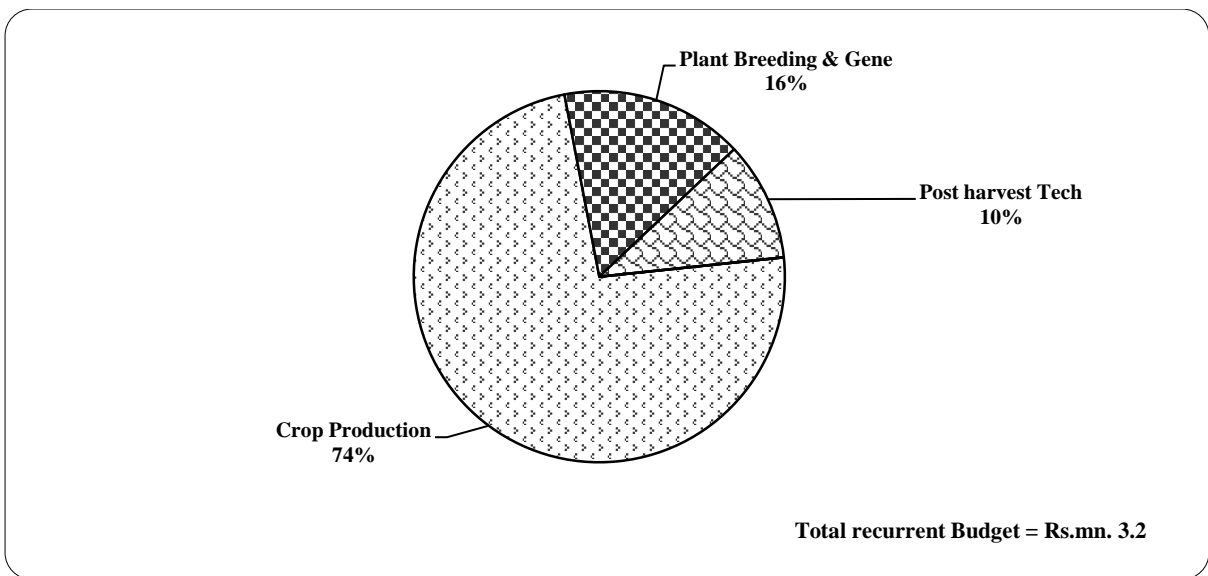


Figure 51-DNBG's Recurrent Budget (%) by Discipline - 2018

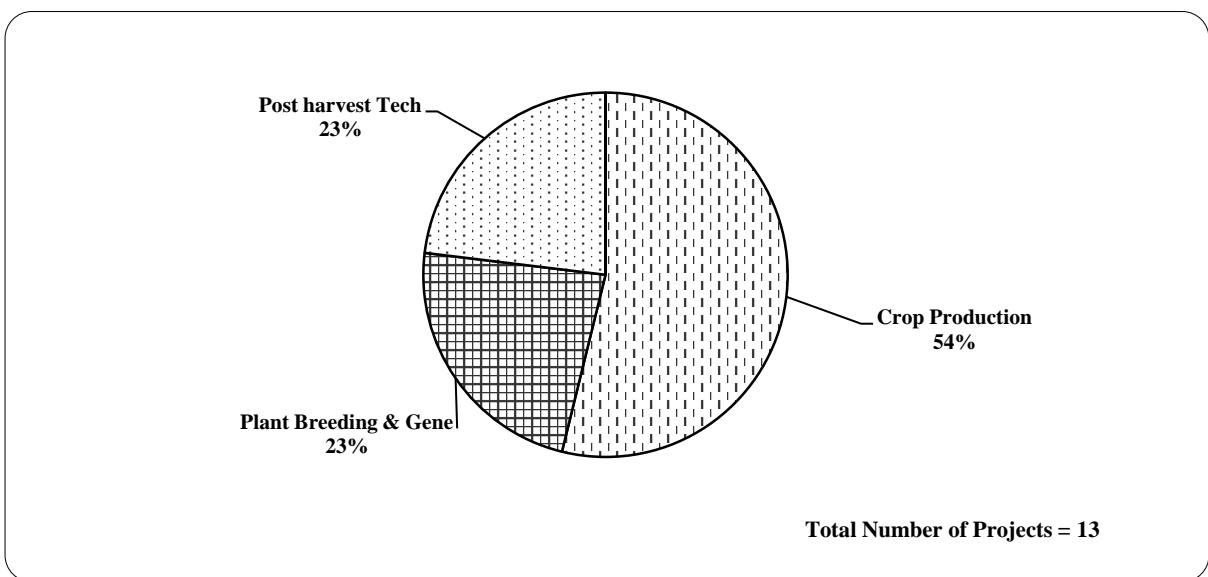


Figure 52-Number of Research Projects (%) by Discipline at DNBG - 2018

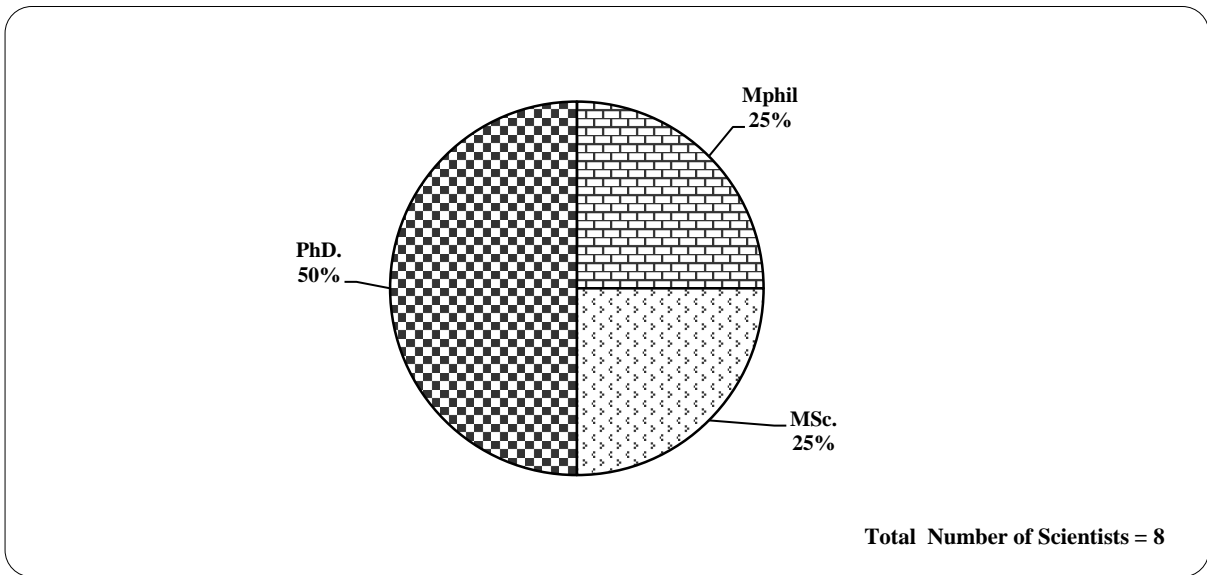


Figure 53-Numbers of Scientists (%) by Highest Academic Qualifications at DNBG - 2018

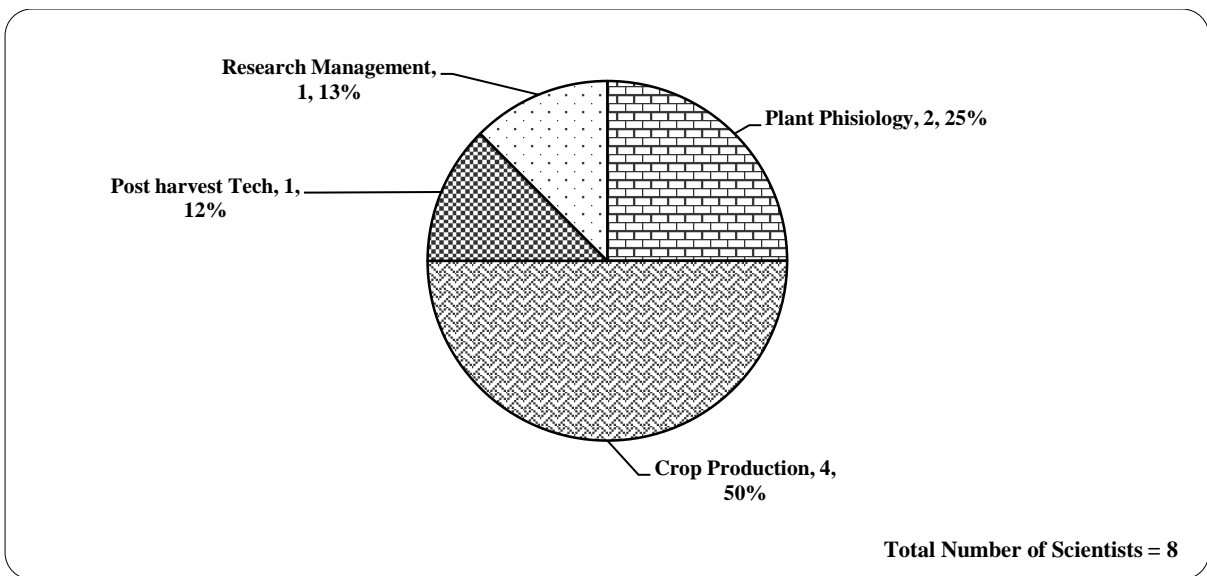


Figure 54-Numbers of Scientists (%) at DNBG by Discipline - 2018

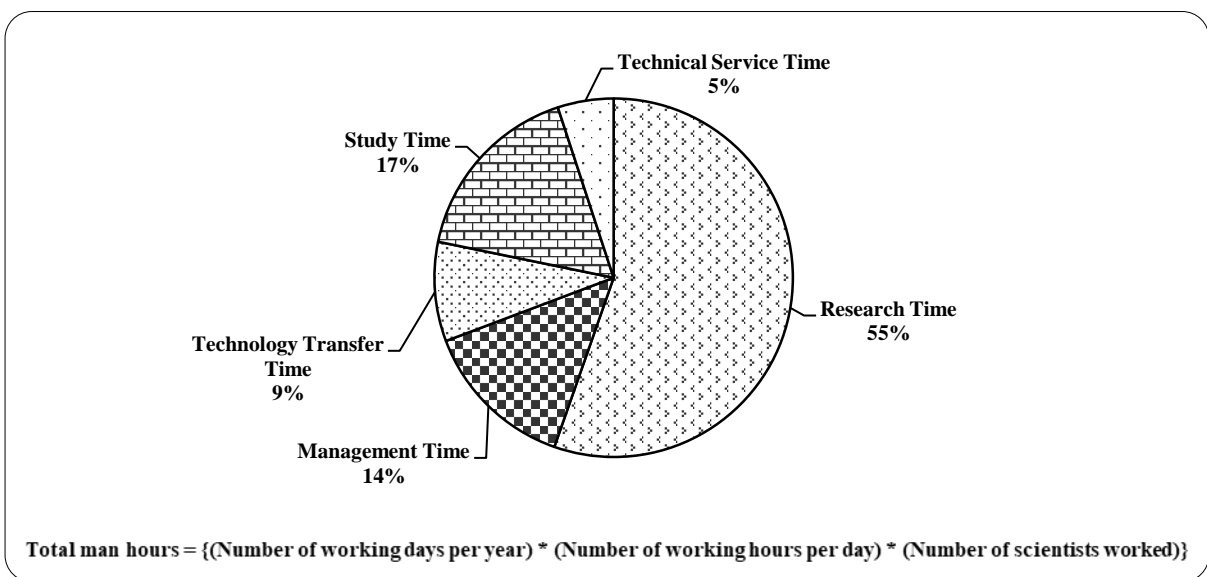


Figure 55-How Scientists Spent (%) Time at DNBG - 2018

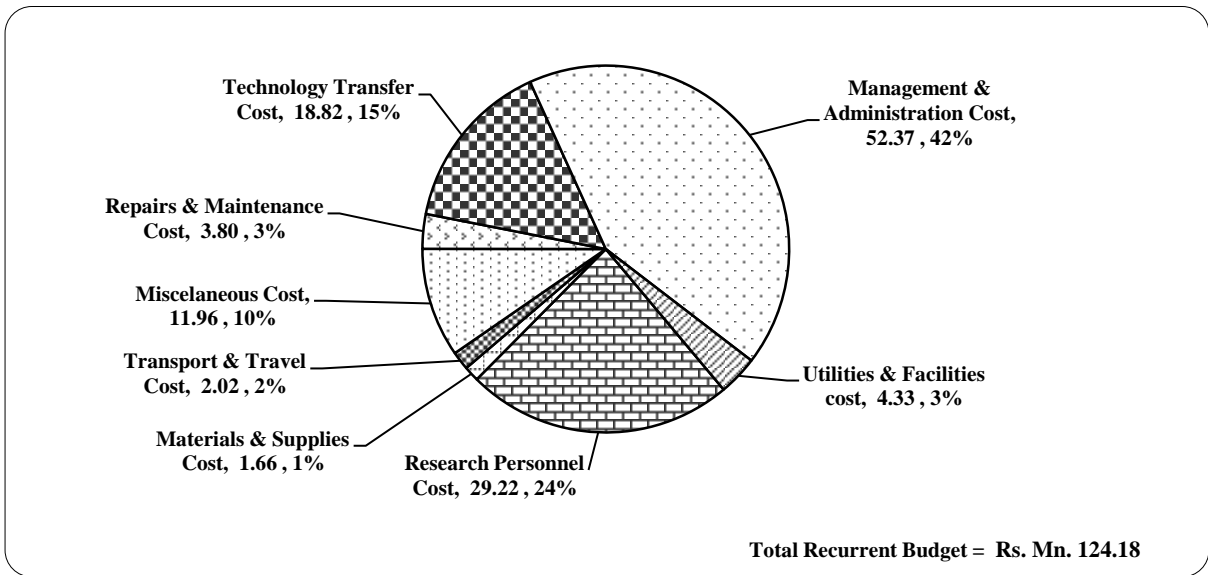


Figure 56-HARTI's Recurrent Budget (%) by Activity - 2018

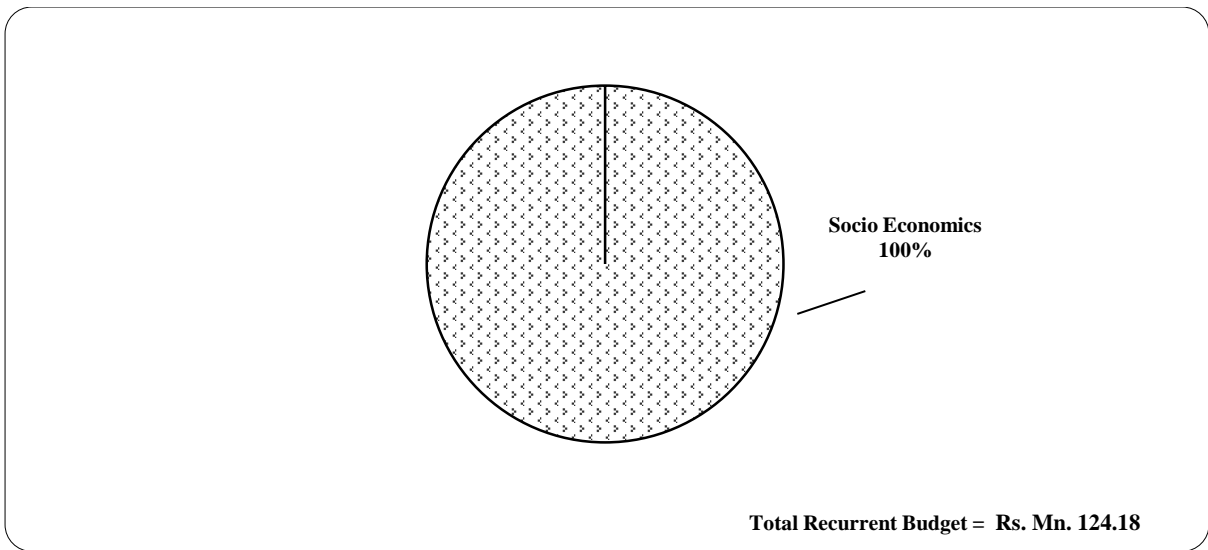


Figure 57-HARTI's Recurrent Budget (%) by Discipline - 2018

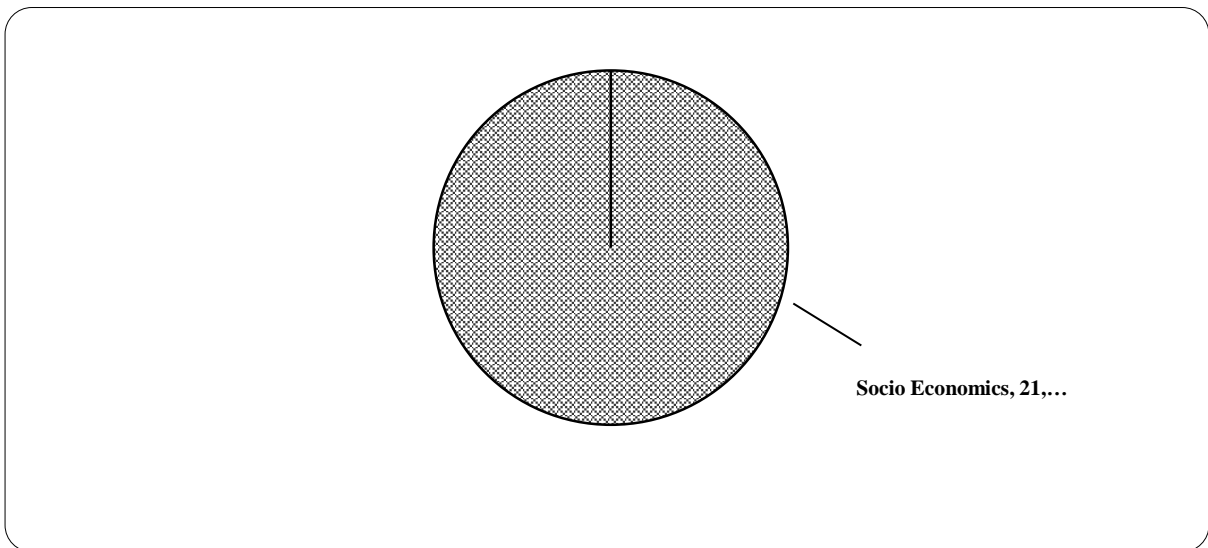


Figure 58-Number of Research Projects (%) by Discipline at HARTI - 2018

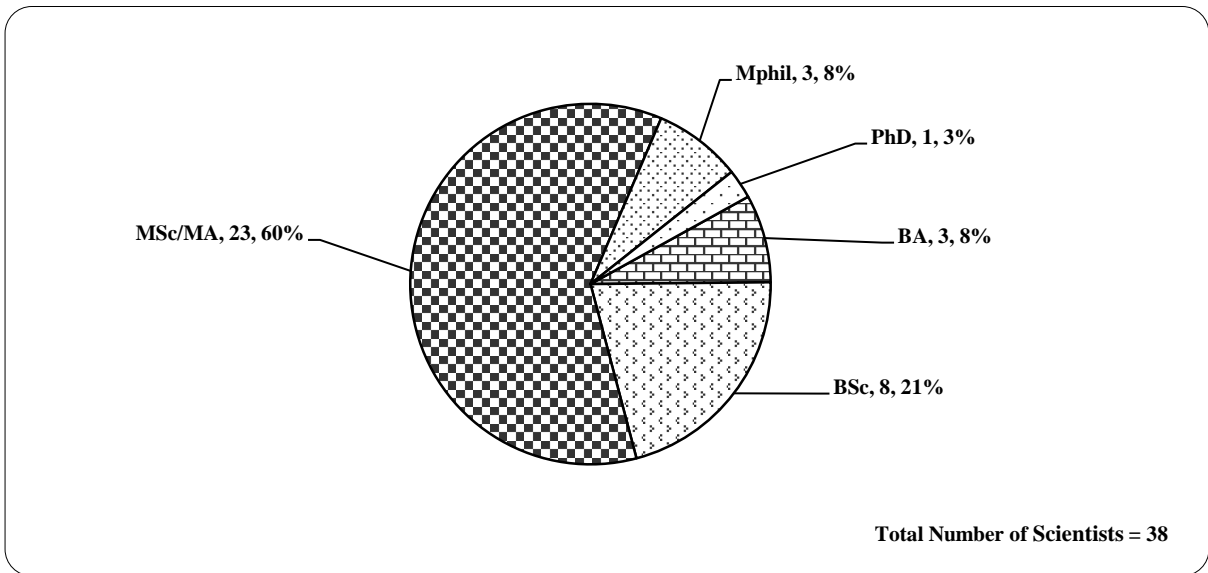


Figure 59-Numbers of Scientists (%) by Highest Academic Qualifications at HARTI - 2018

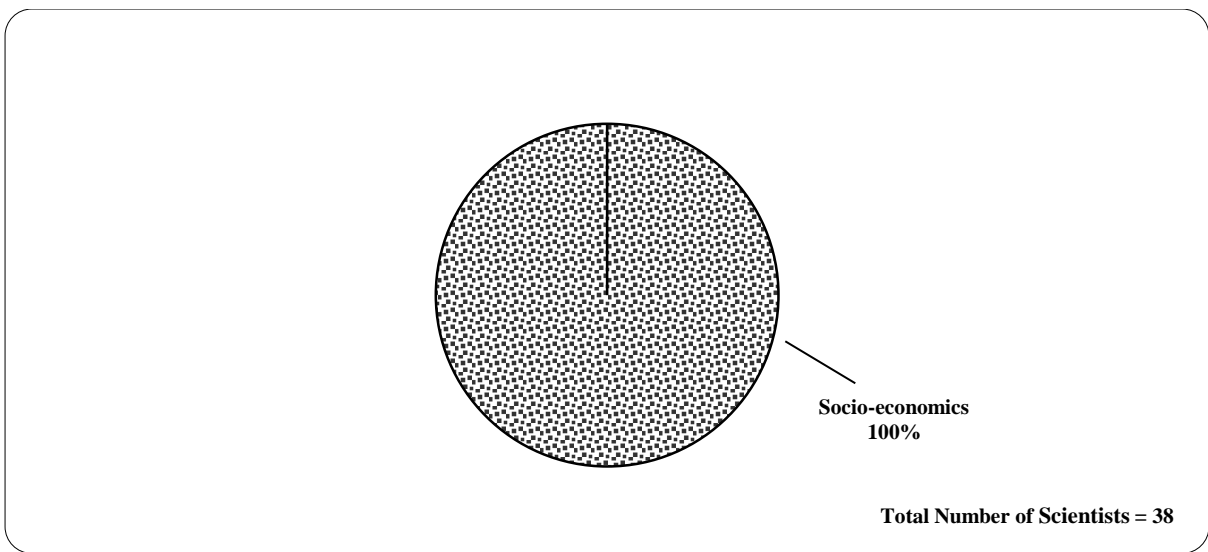


Figure 60-Numbers of Scientists (%) at HARTI by Discipline - 2018

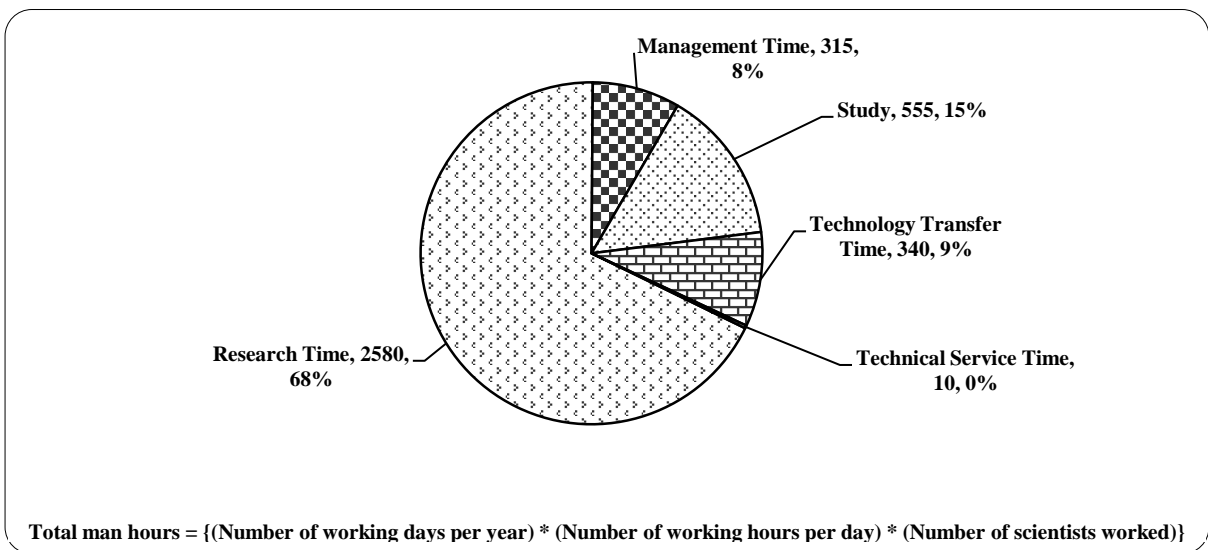


Figure 61-How Scientists Spent (%) Time at HARTI - 2018



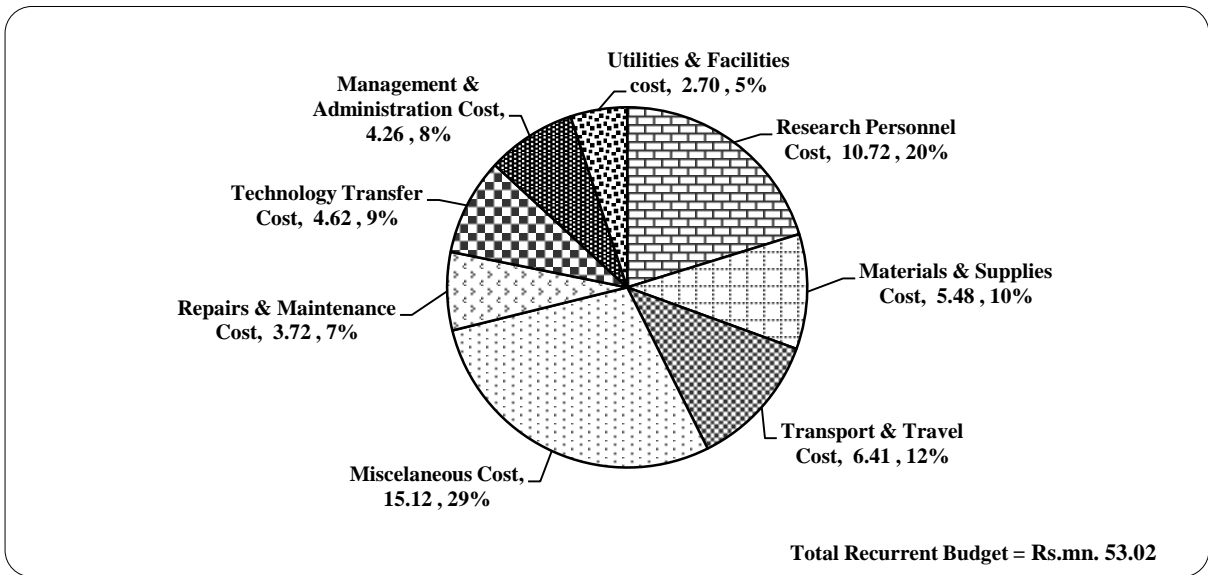


Figure 62-NIPHM's Recurrent Budget (%) by Activity - 2018

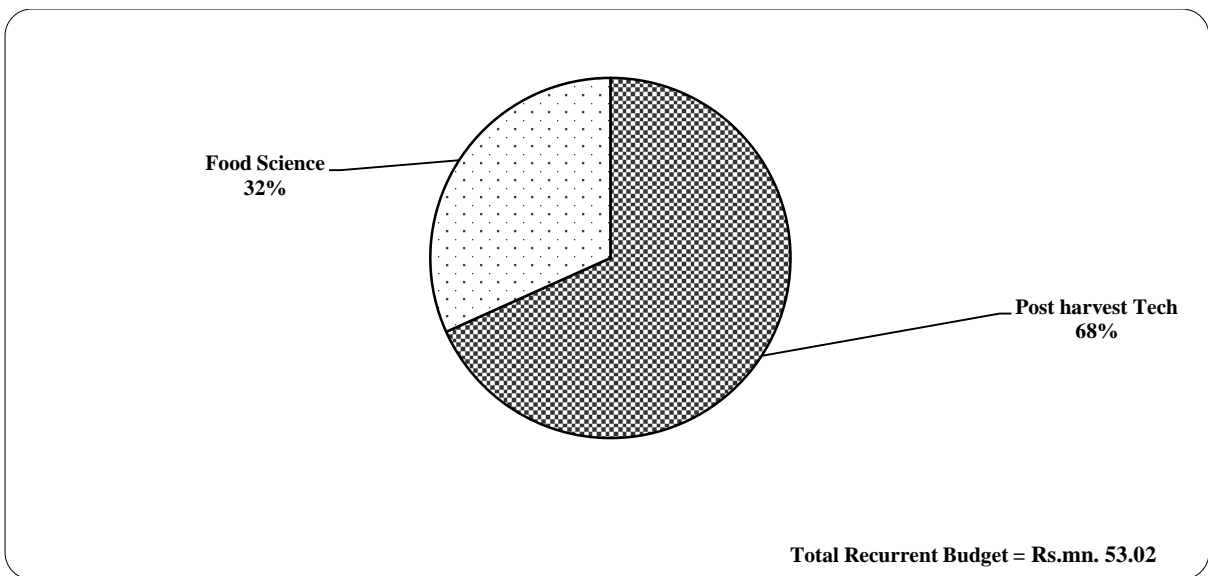


Figure 63-NIPHM's Recurrent Budget (%) by Discipline - 2018

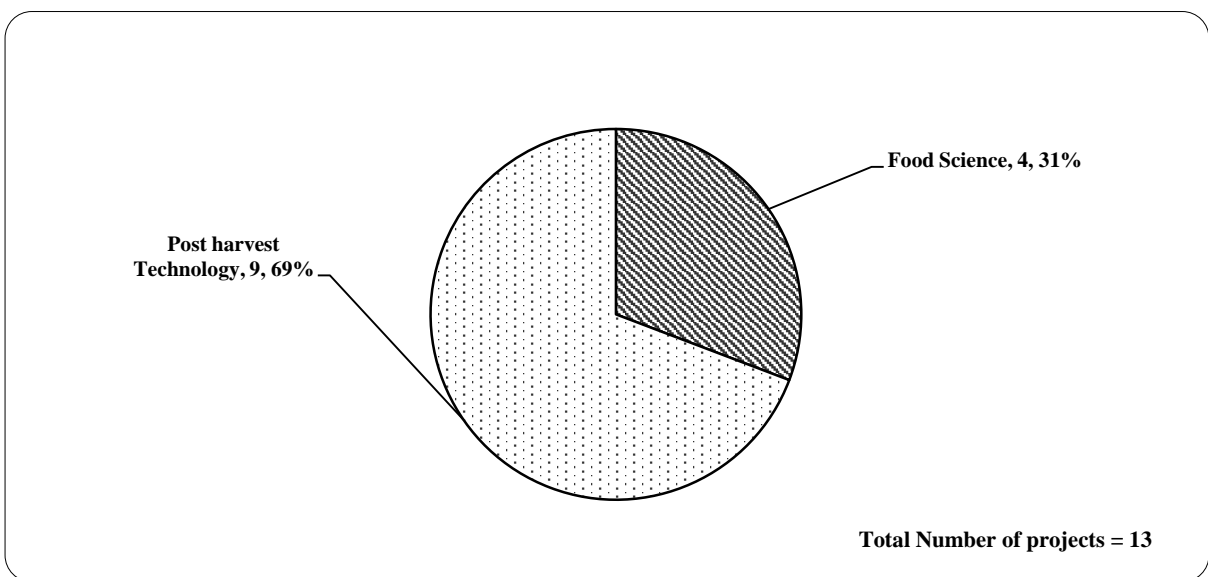
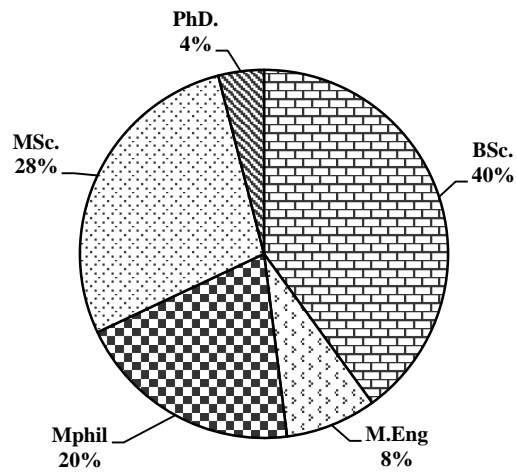
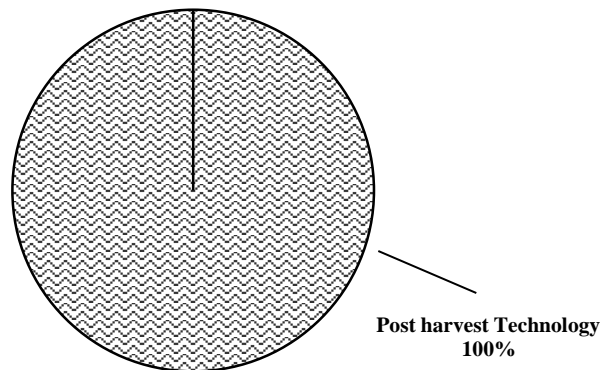


Figure 64-Number of Research Projects (%) by Discipline at NIPHM - 2018



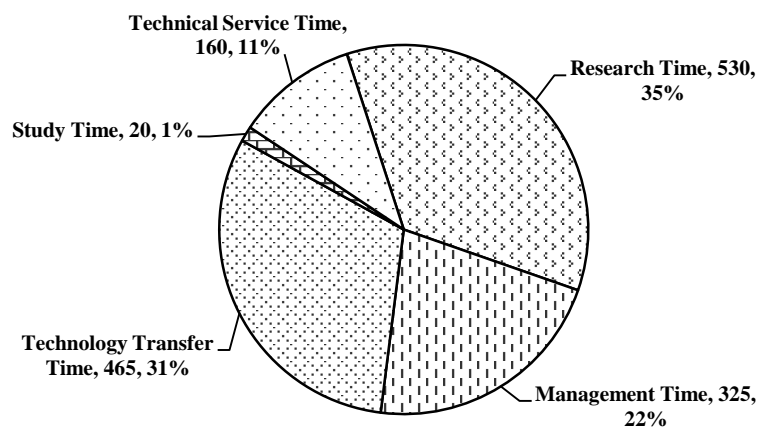
Total Number of Scientists = 25

Figure 65-Numbers of Scientists (%) by Highest Academic Qualifications at NIPHM - 2018



Total Number of Scientists = 25

Figure 66-Numbers of Scientists (%) at NIPHM by Discipline - 2018



Total man hours = {(Number of working days per year) \* (Number of working hours per day) \* (Number of scientists

Figure 67-How Scientists Spent (%) Time at NIPHM - 2018

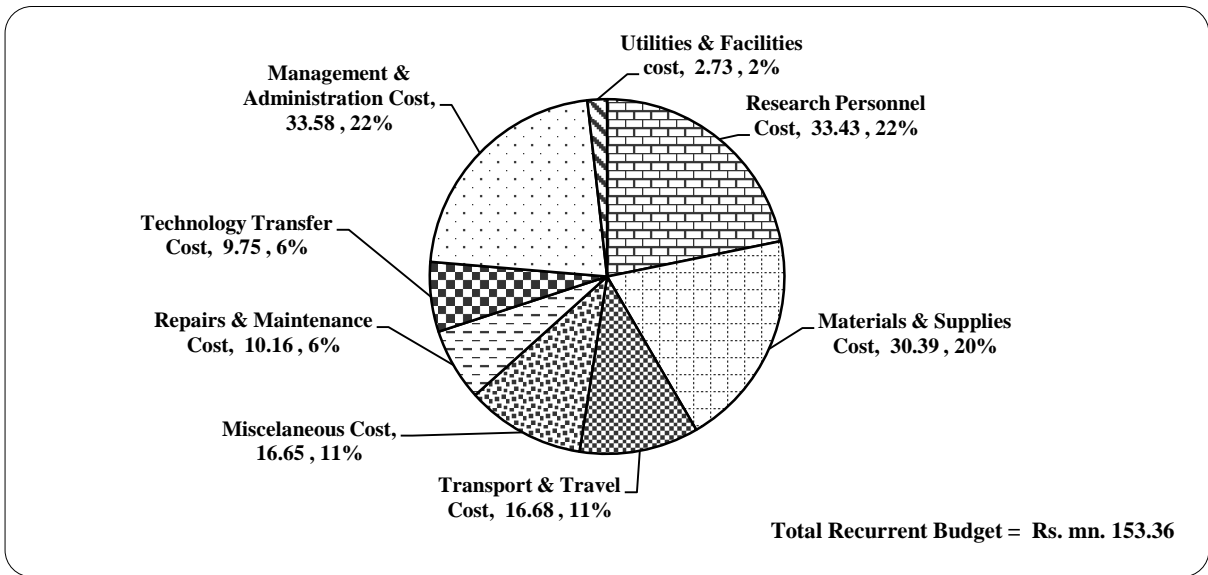


Figure 68-NARA's Recurrent Budget (%) by Activity - 2018

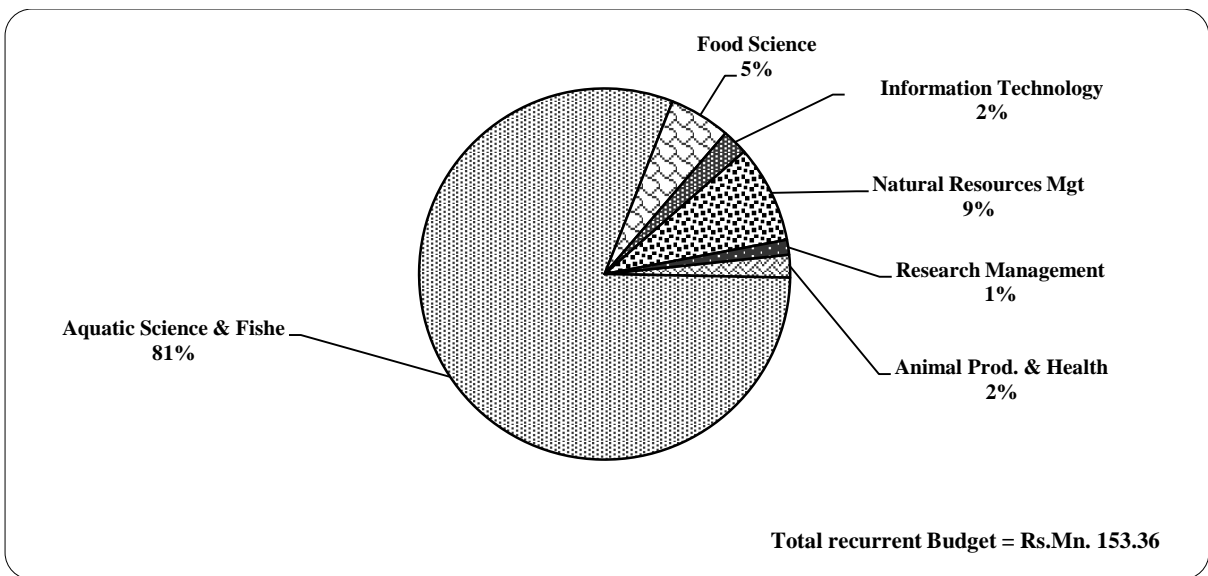


Figure 69-NARA's Recurrent Budget (%) by Discipline - 2018

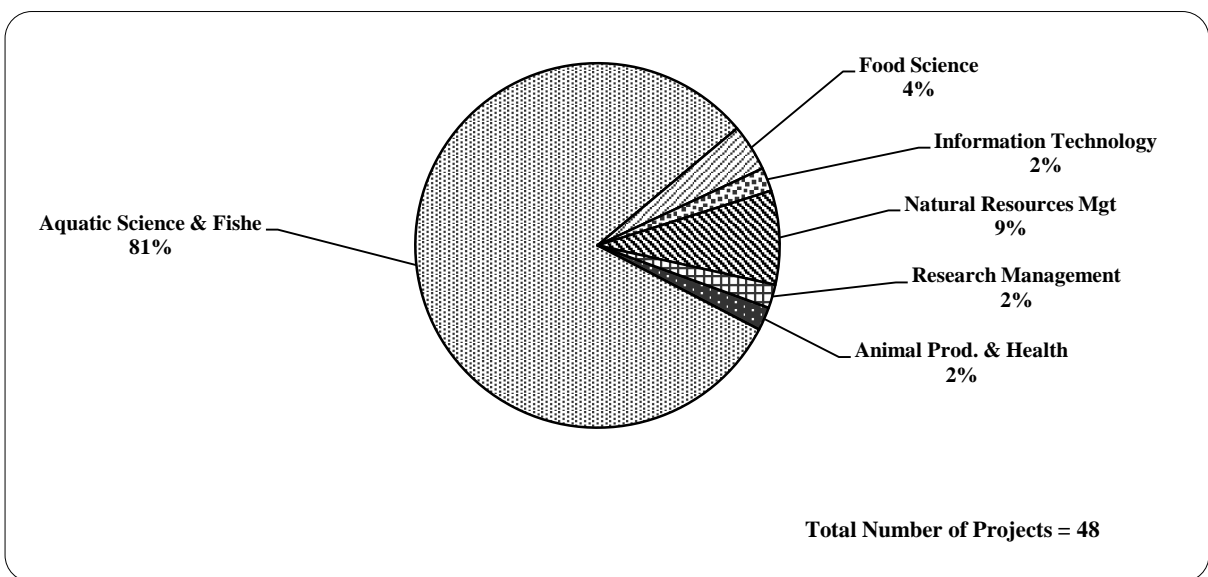


Figure 70-Number of Research Projects (%) by Discipline at NARA - 2018

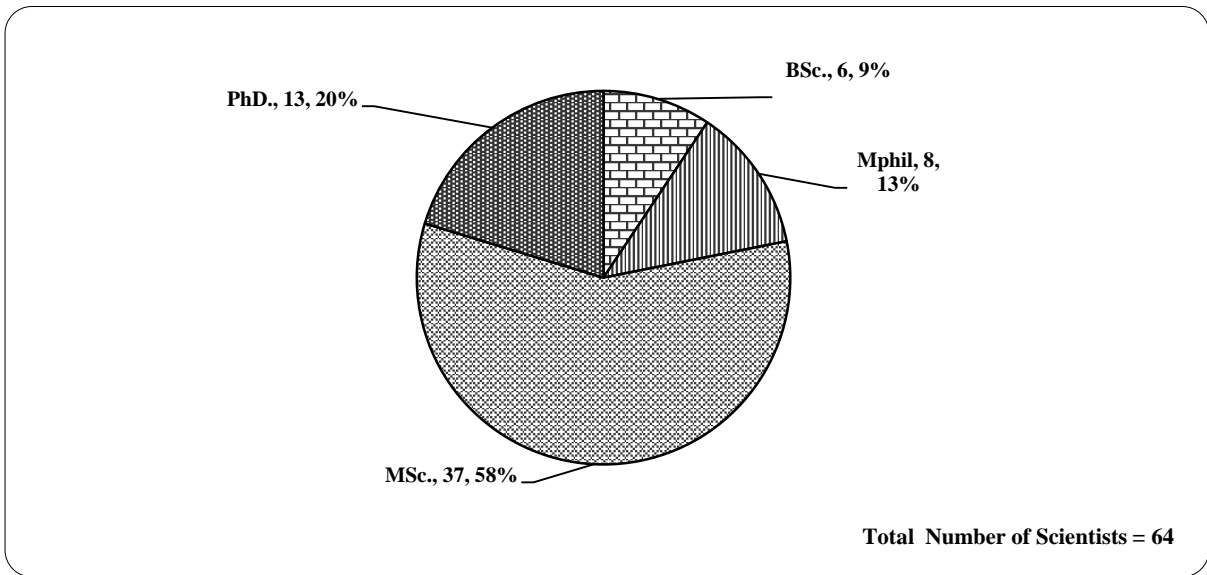


Figure 71-Numbers of Scientists (%) by Highest Academic Qualifications at NARA - 2018

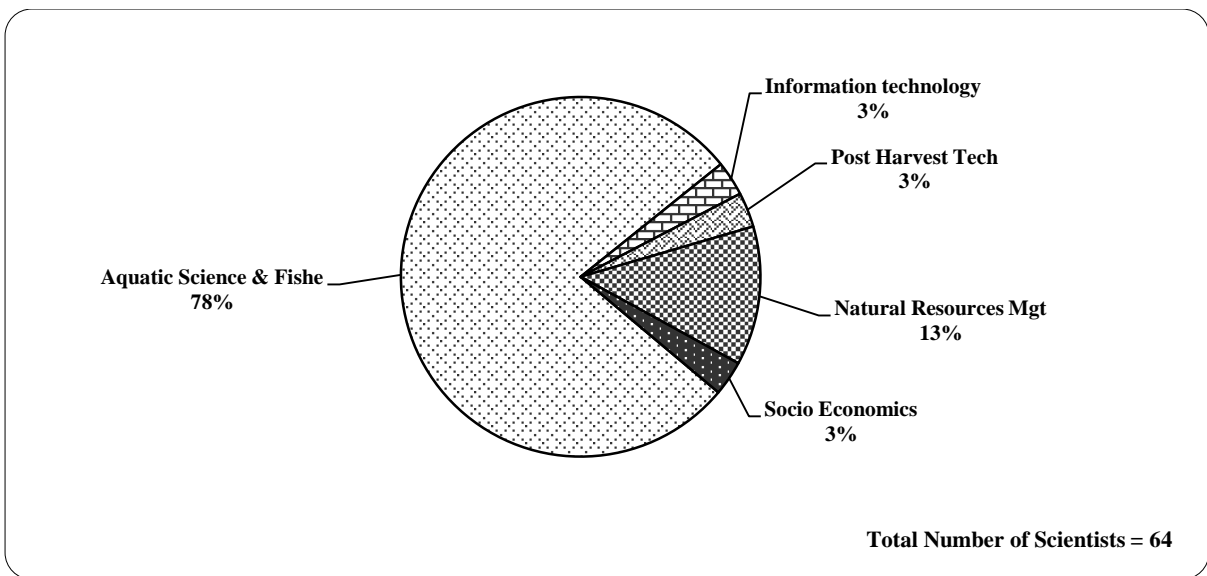


Figure 72-Numbers of Scientists (%) at NARA by Discipline - 2018

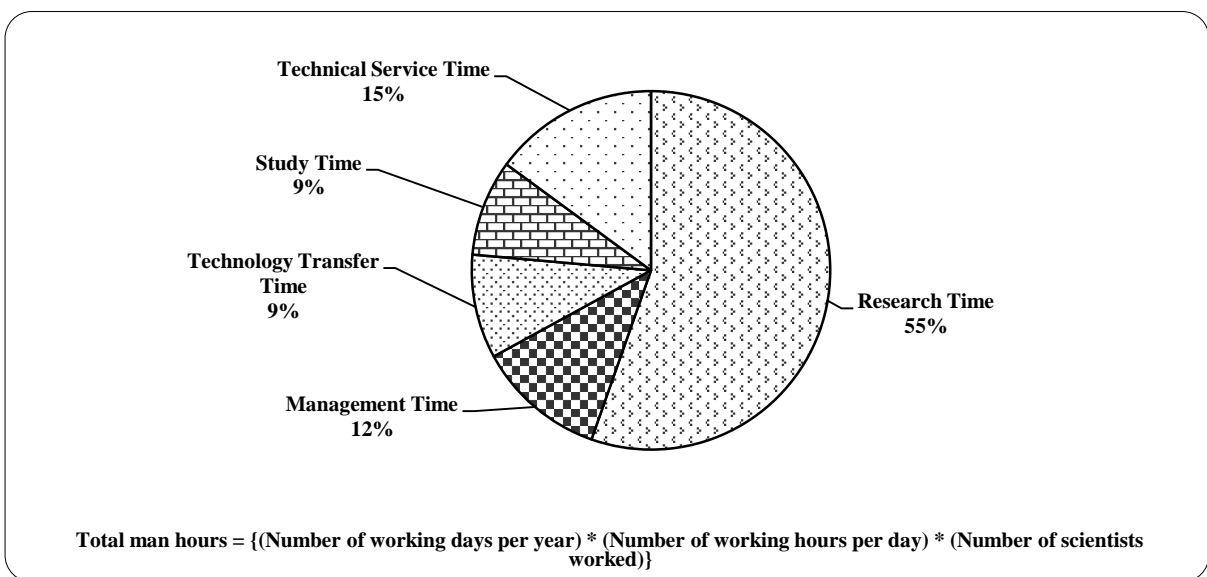
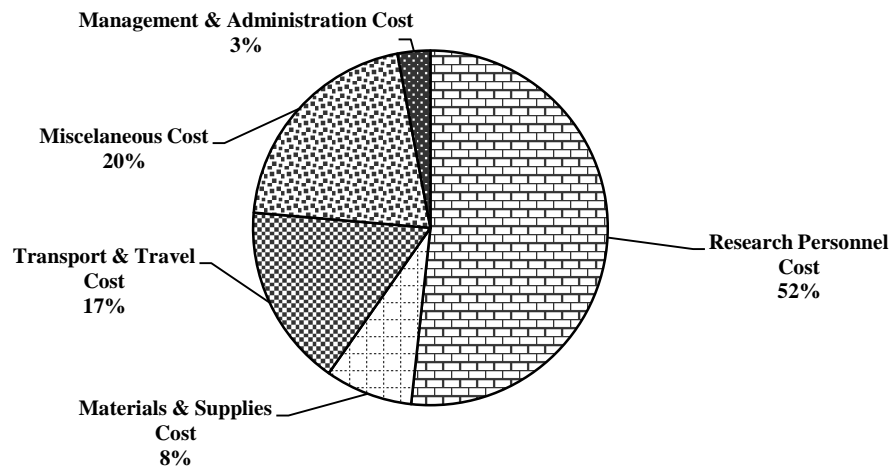
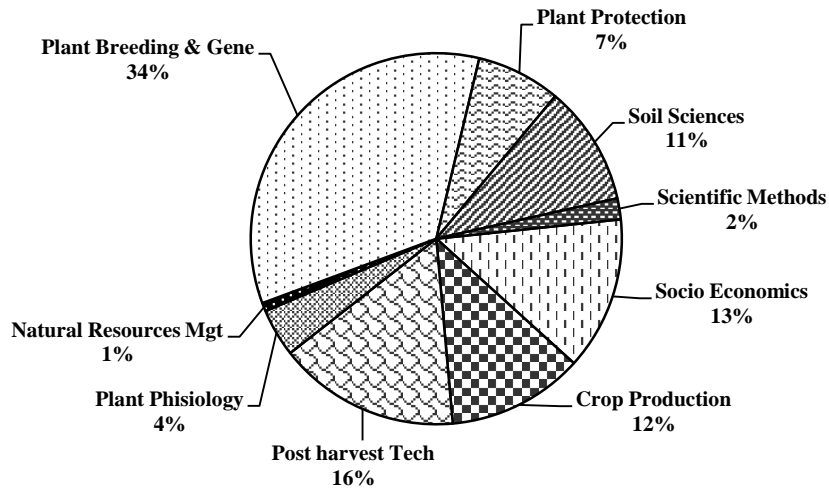


Figure 73-How Scientists Spent (%) Time at NARA - 2018



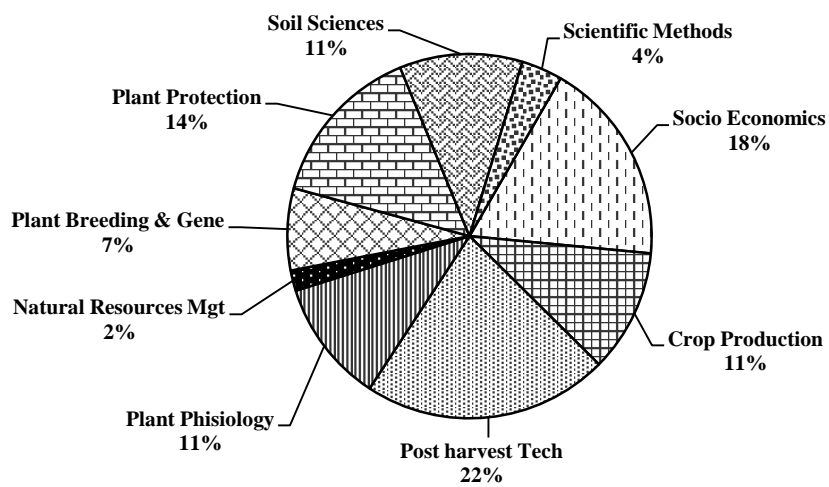
Total Recurrent Budget = Rs. mn. 136.19

Figure 74-RRI's Recurrent Budget (%) by Activity - 2018



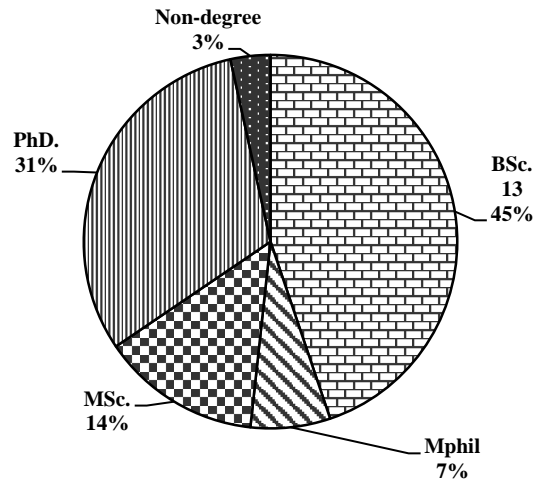
Total recurrent Budget = Rs.mn. 136.19

Figure 75-RRI's Recurrent Budget (%) by Discipline - 2018



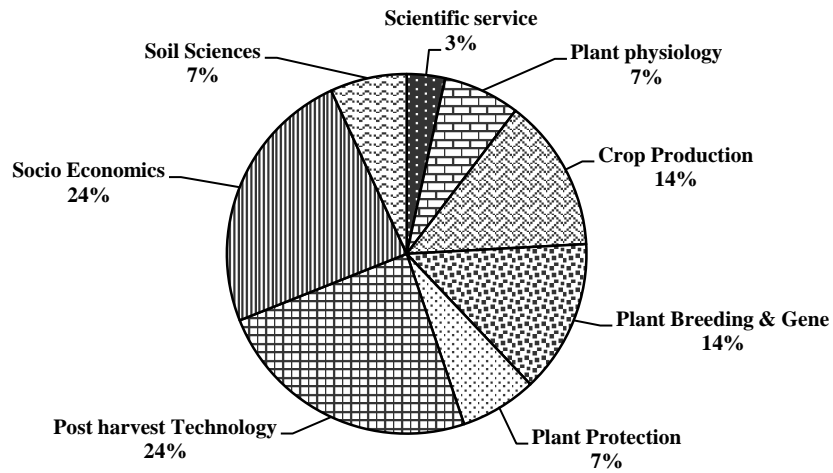
Total Number of Projects = 55

Figure 76-Number of Research Projects (%) by Discipline at RRI - 2018



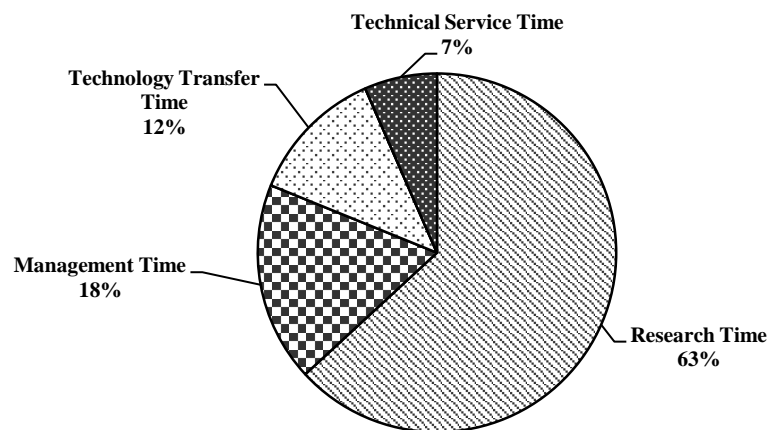
Total Number of Scientists = 29

Figure 77-Numbers of Scientists (%) by Highest Academic Qualifications at RRI - 2018



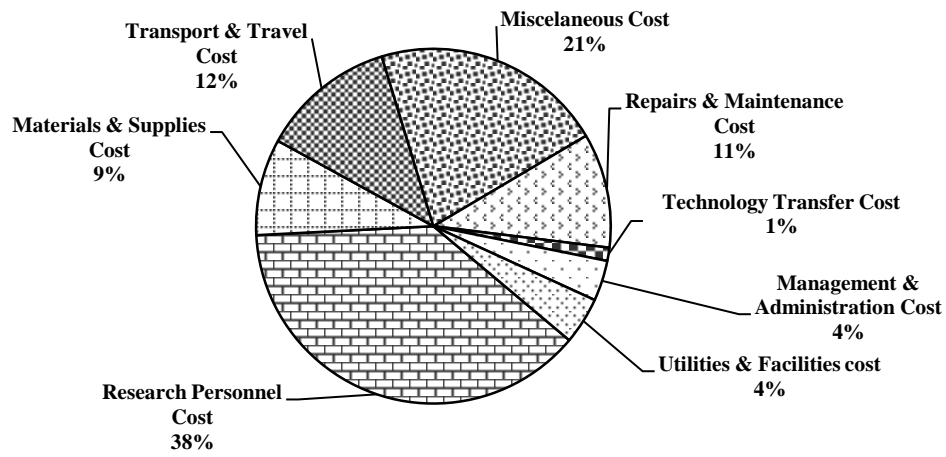
Total Number of Scientists = 29

Figure 78-Numbers of Scientists (%) at RRI by Discipline - 2018



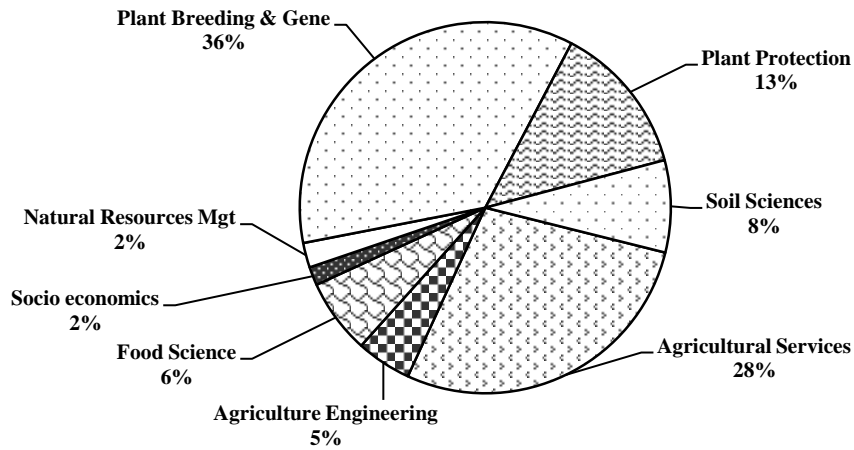
Total man hours = {(Number of working days per year) \* (Number of working hours per day) \* (Number of scientists worked)}

Figure 79-How Scientists Spent (%) Time at RRI - 2018



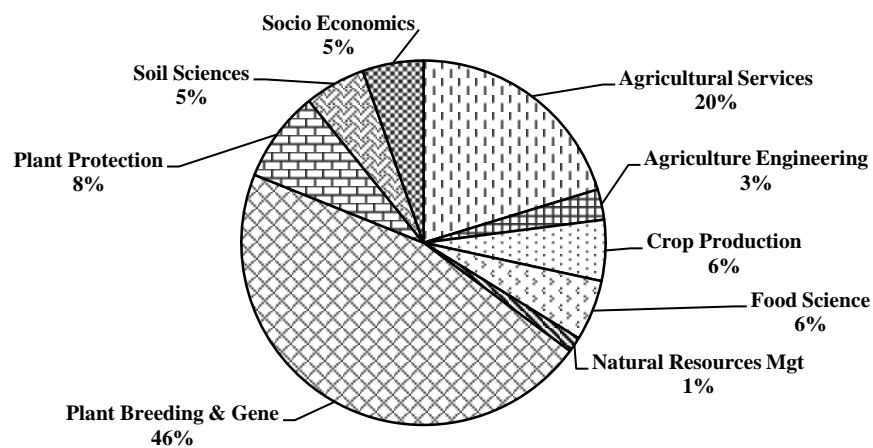
Total Recurrent Budget = Rs.mn.. 116.4

Figure 80-SRI's Recurrent Budget (%) by Activity - 2018



Total recurrent Budget = Rs.mn - 116.4

Figure 81-SRI's Recurrent Budget (%) by Discipline - 2018



Total Number of Projects = 74

Figure 82-Number of Research Projects (%) by Discipline at SRI - 2018

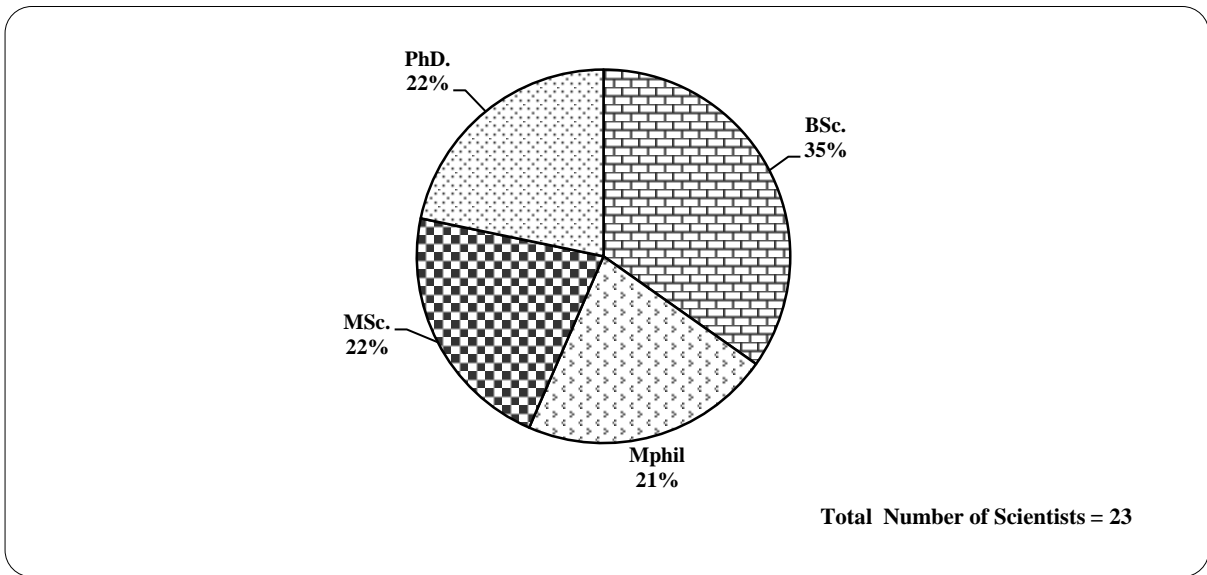


Figure 83-Numbers of Scientists (%) by Highest Academic Qualifications at SRI - 2018

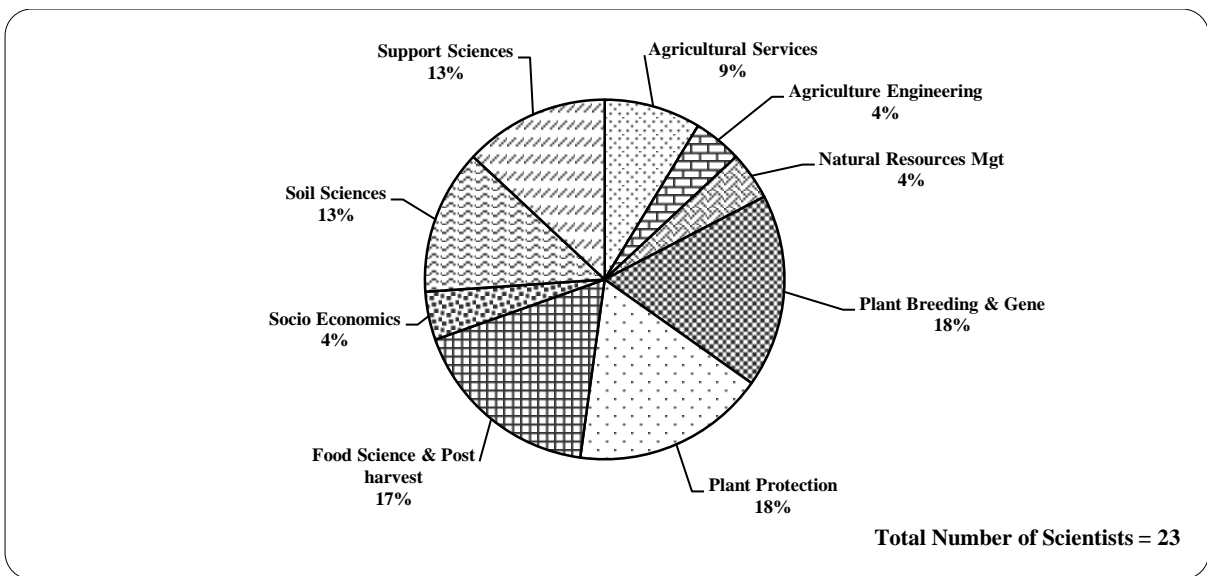


Figure 84-Numbers of Scientists (%) at SRI by Discipline - 2018

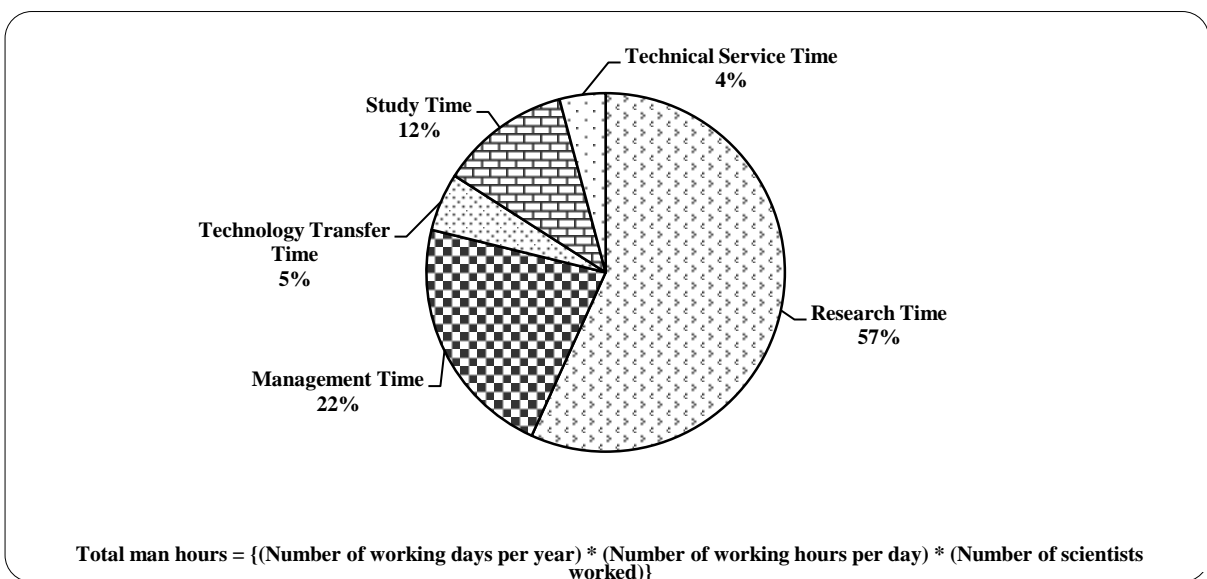


Figure 85-How Scientists Spent (%) Time at SRI - 2018



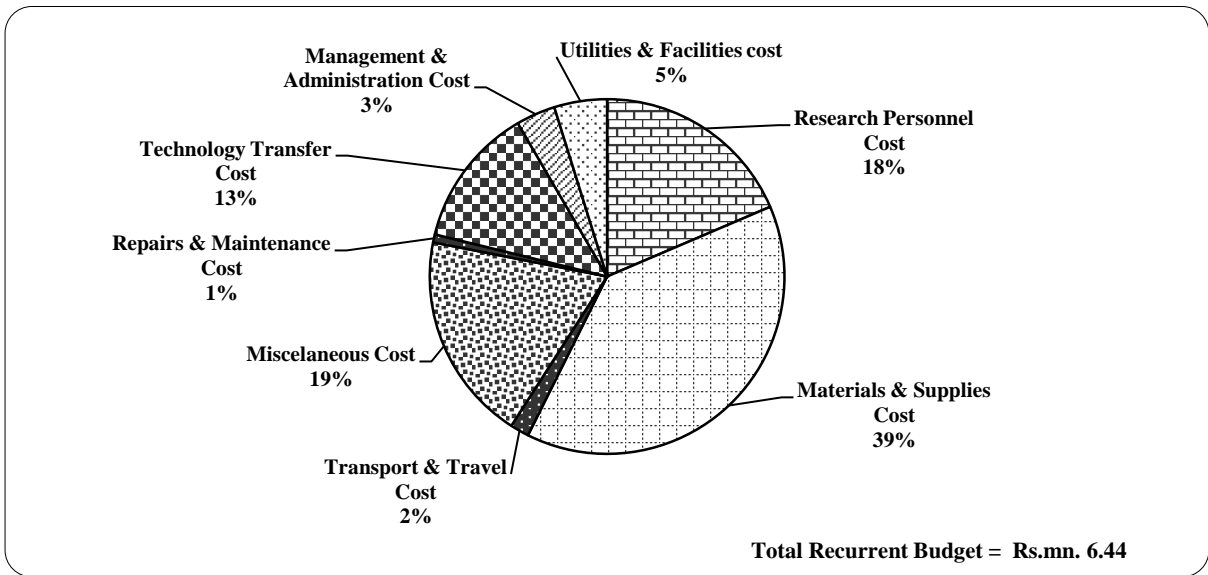


Figure 86-PRI's Recurrent Budget (%) by Activity - 2018

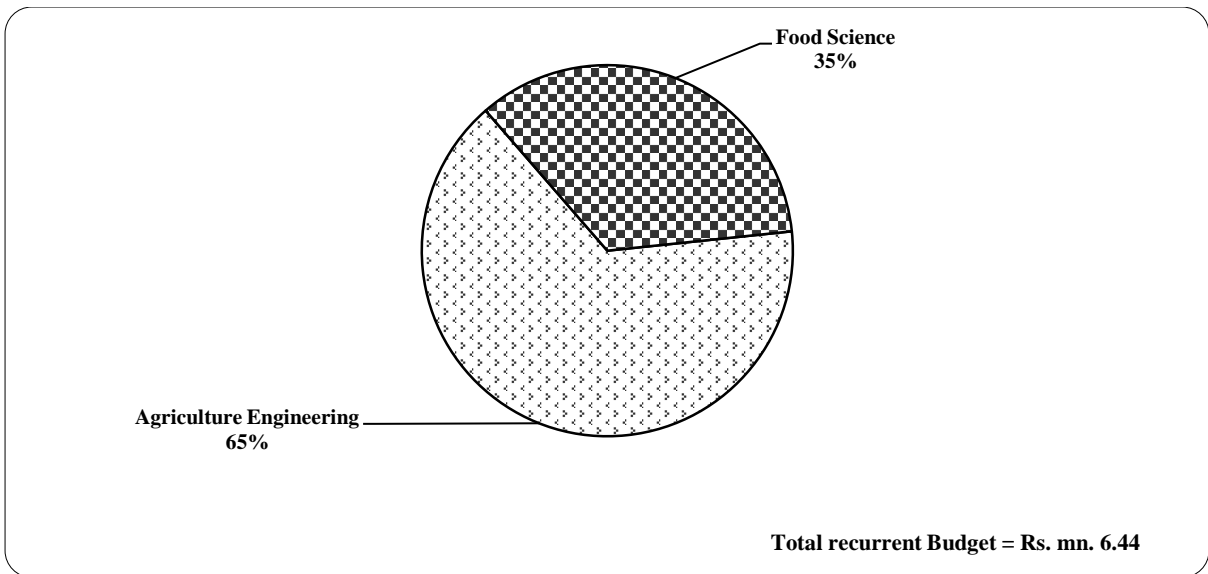


Figure 87-PRI's Recurrent Budget (%) by Discipline - 2018

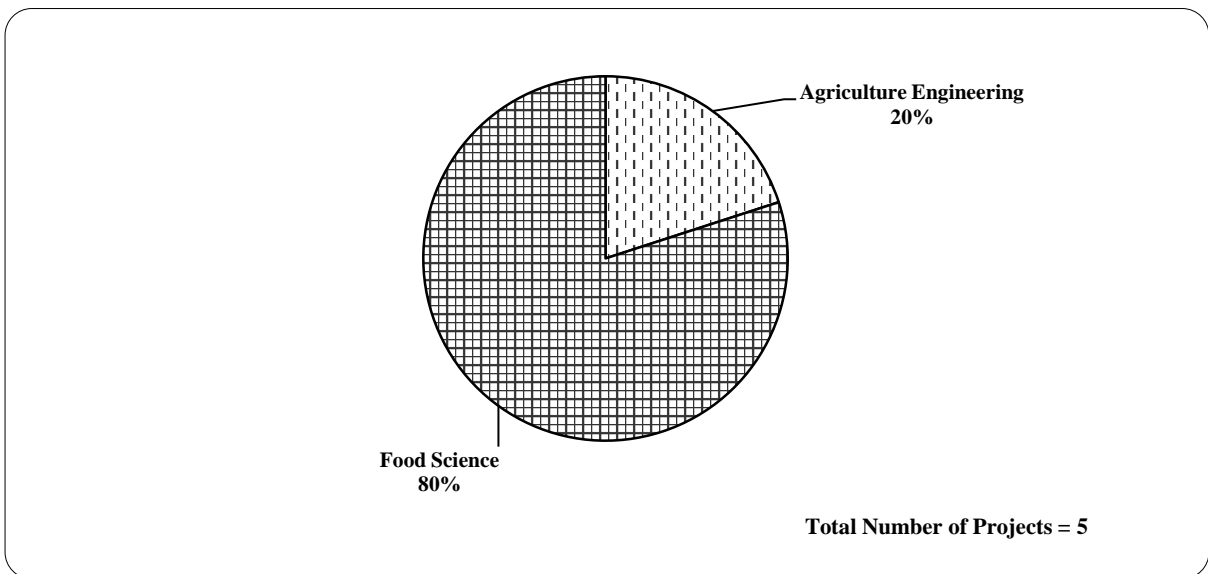
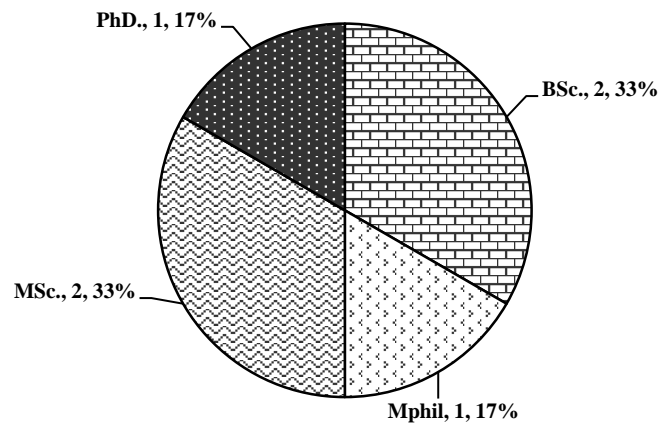
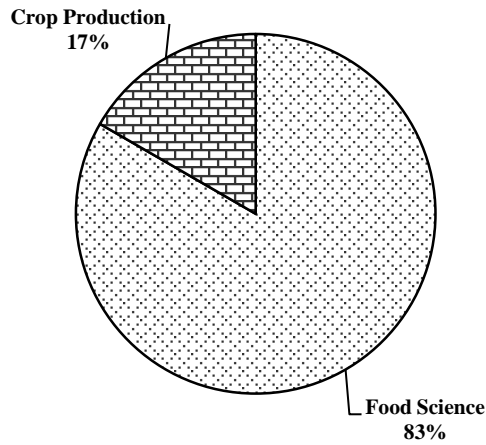


Figure 88-Number of Research Projects (%) by Discipline at PRI - 2018



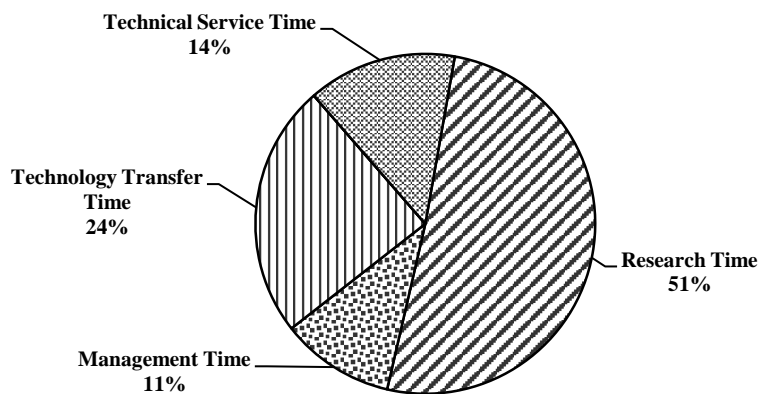
Total Number of Scientists = 6

Figure 89-Numbers of Scientists (%) by Highest Academic Qualifications at PRI - 2018



Total Number of Scientists = 6

Figure 90-Numbers of Scientists (%) at PRI by Discipline - 2018



Total man hours = {(Number of working days per year) \* (Number of working hours per day) \* (Number of scientists worked)}

Figure 91-How Scientists Spent (%) Time at PRI - 2018

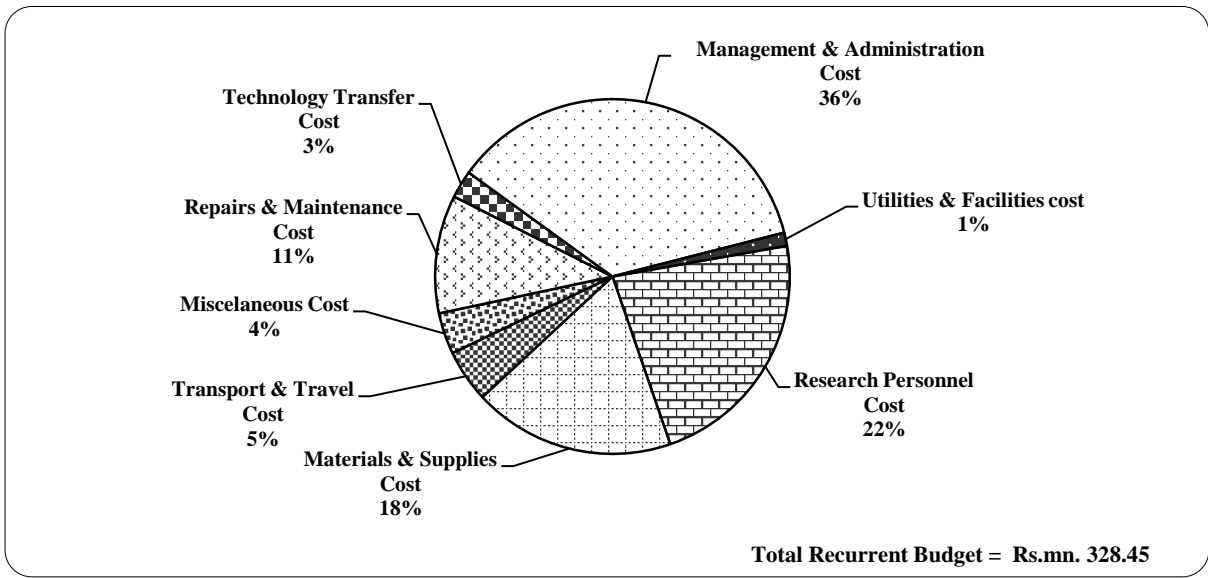


Figure 92-TRI's Recurrent Budget (%) by Activity - 2018

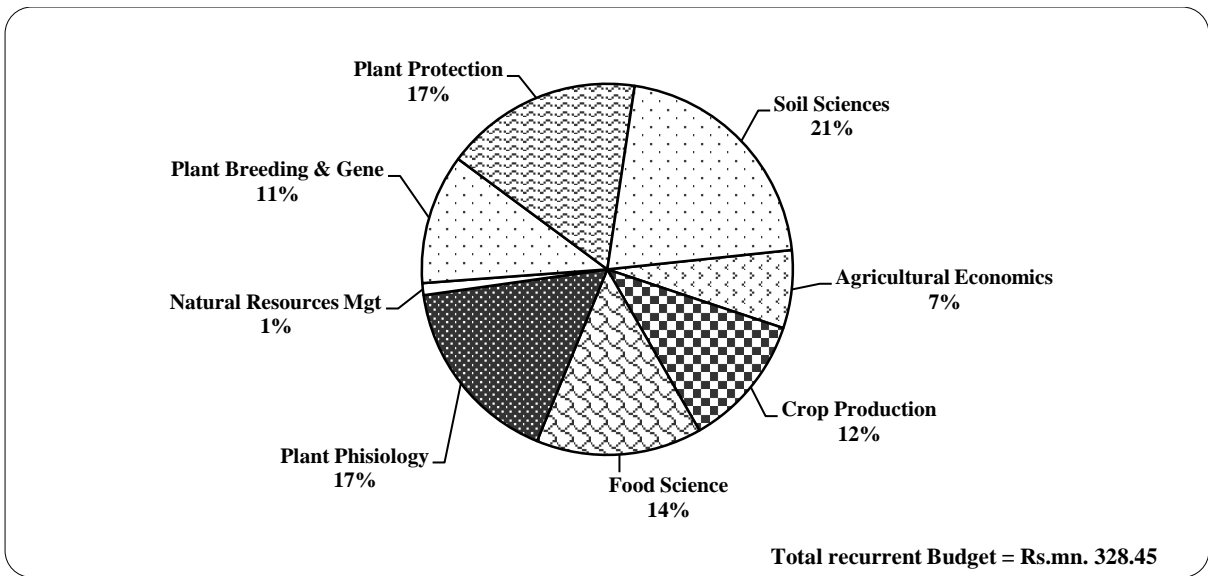


Figure 93-TRI's Recurrent Budget (%) by Discipline - 2018

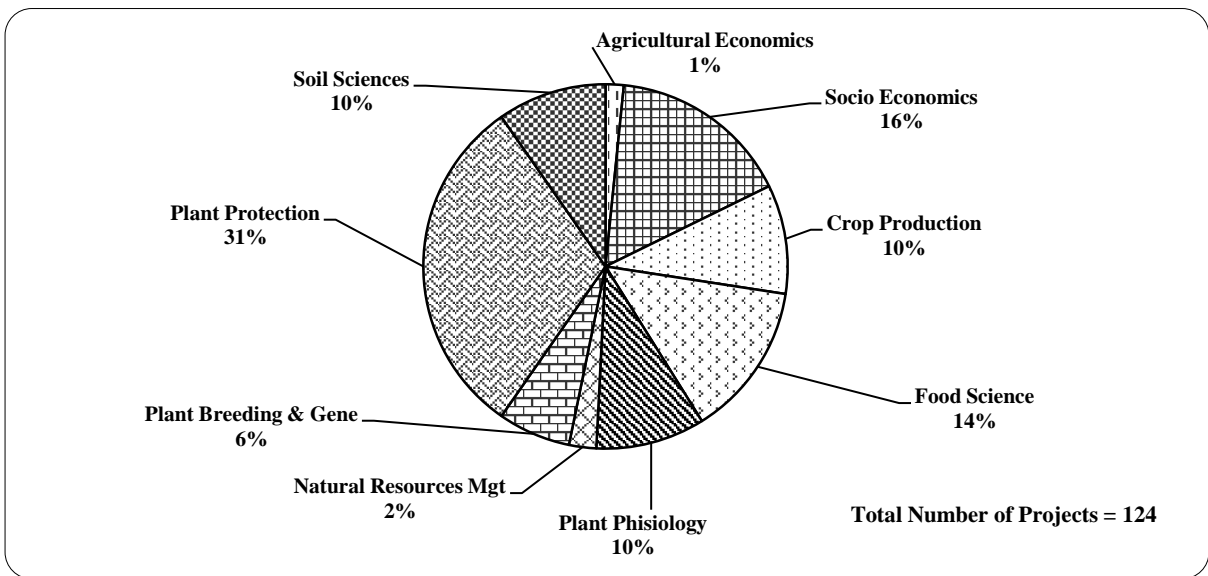


Figure 94-Number of Research Projects (%) by Discipline at TRI - 2018

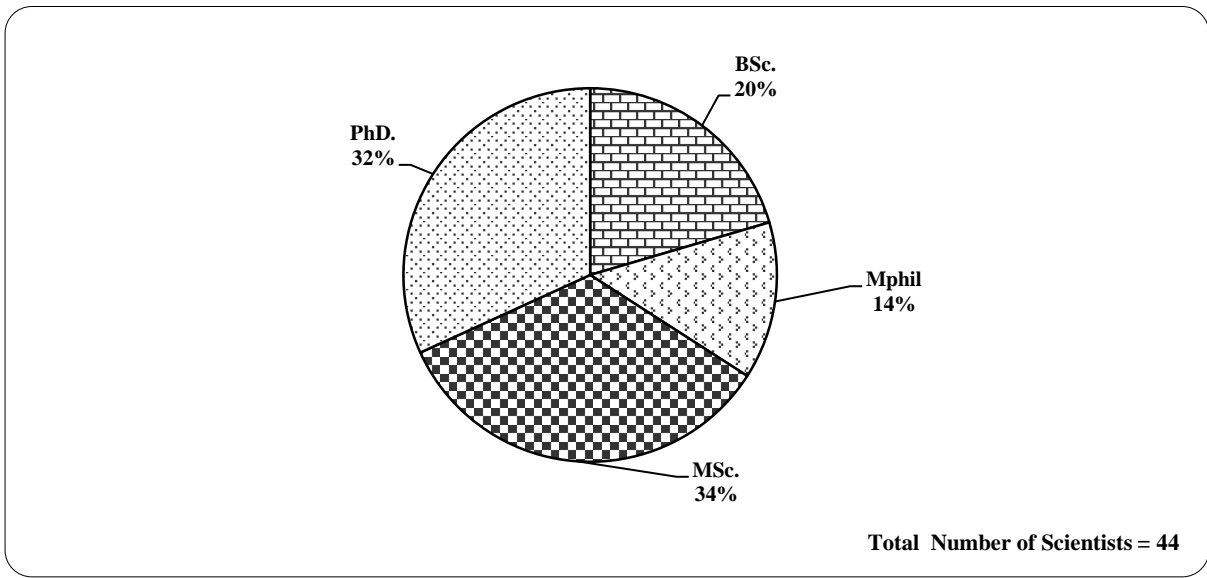


Figure 95-Numbers of Scientists (%) by Highest Academic Qualifications at TRI - 2018

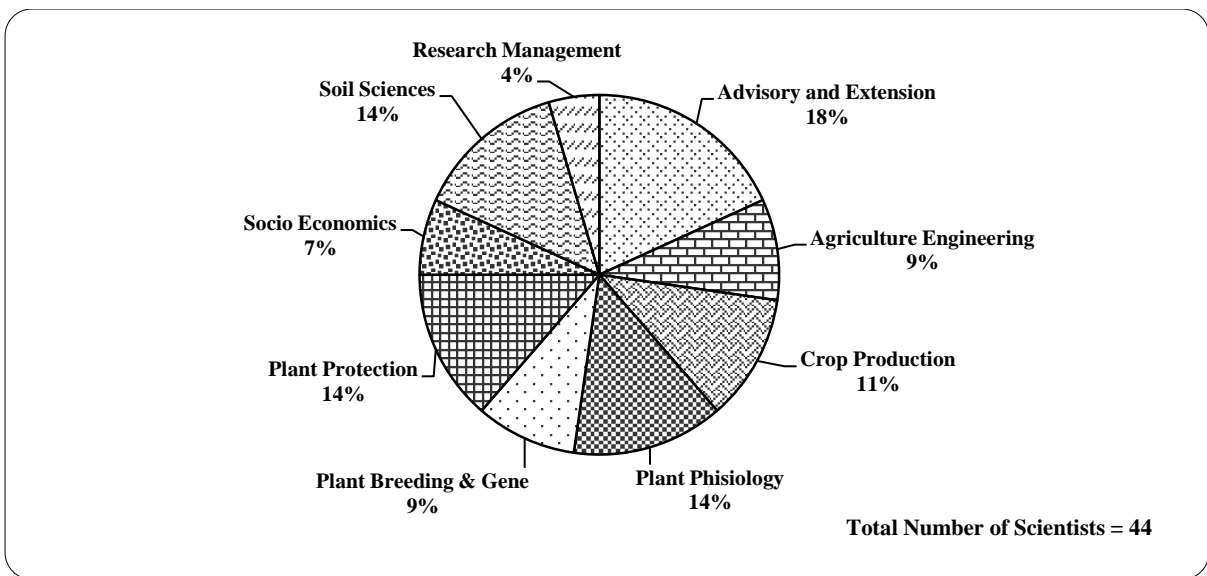


Figure 96-Numbers of Scientists (%) at TRI by Discipline - 2018

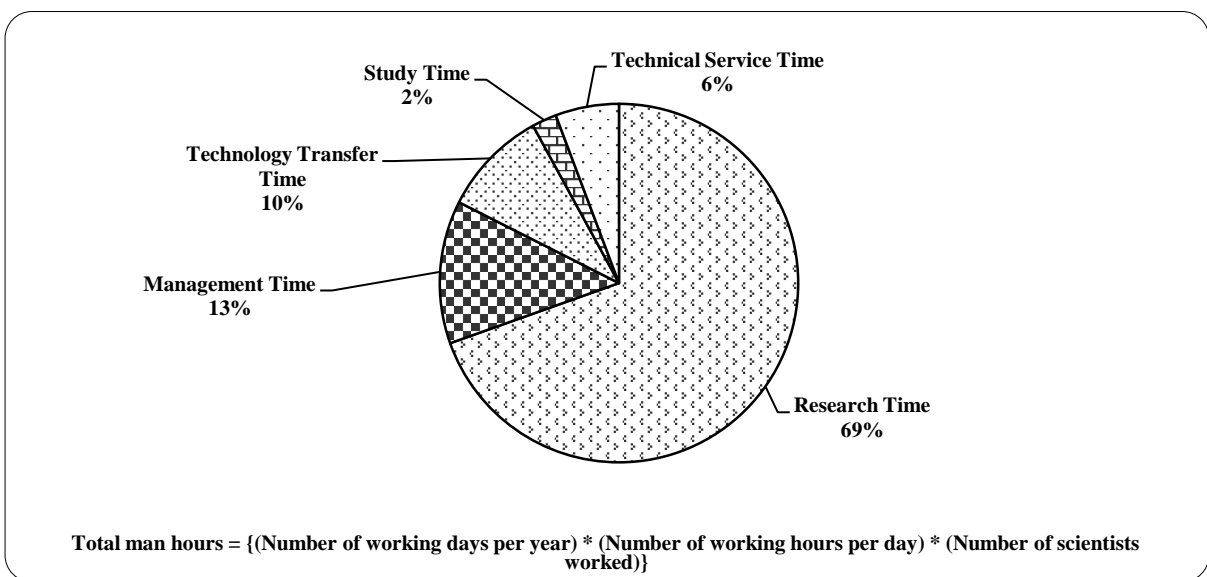


Figure 97-How Scientists Spent (%) Time at TRI - 2018

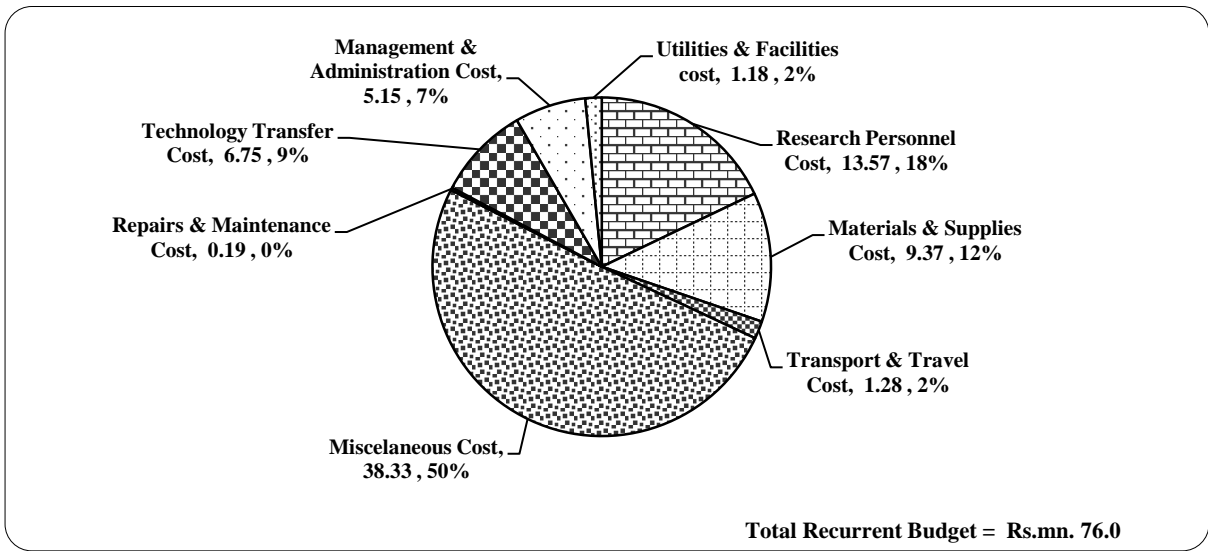


Figure 98-VRI's Recurrent Budget (%) by Activity - 2018

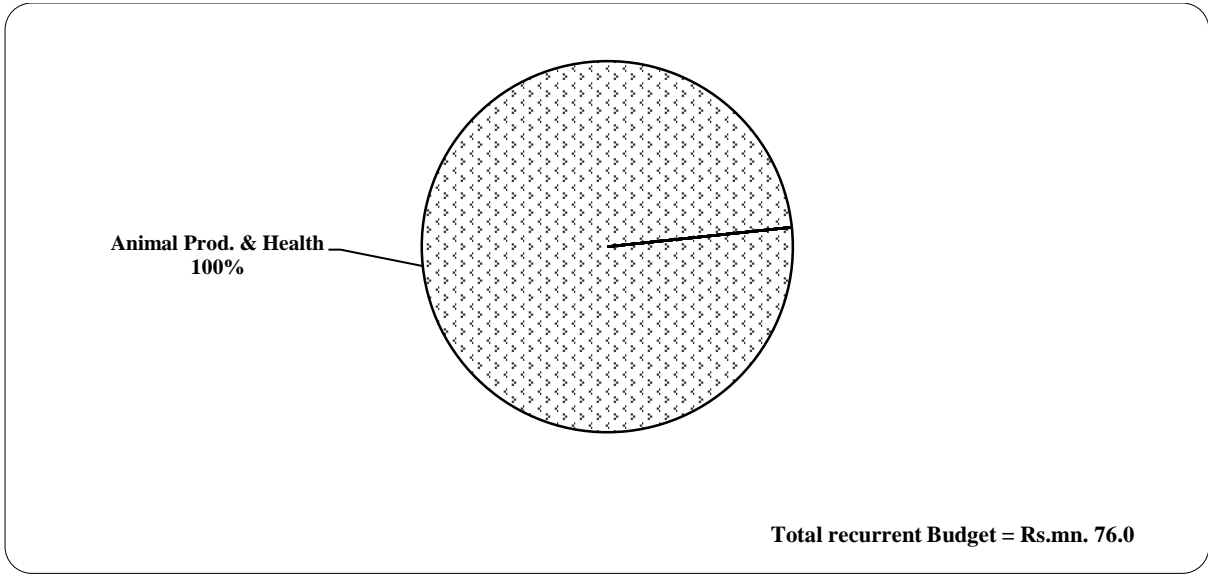


Figure 99-VRI's Recurrent Budget (%) by Discipline - 2018

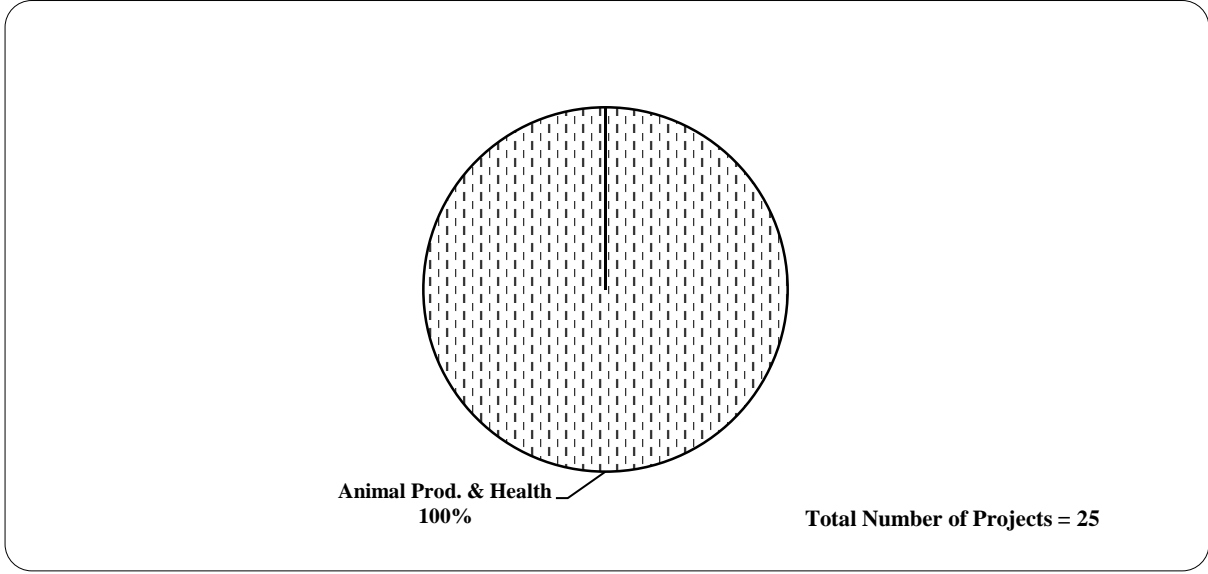


Figure 100-Number of Research Projects (%) by Discipline at VRI - 2018

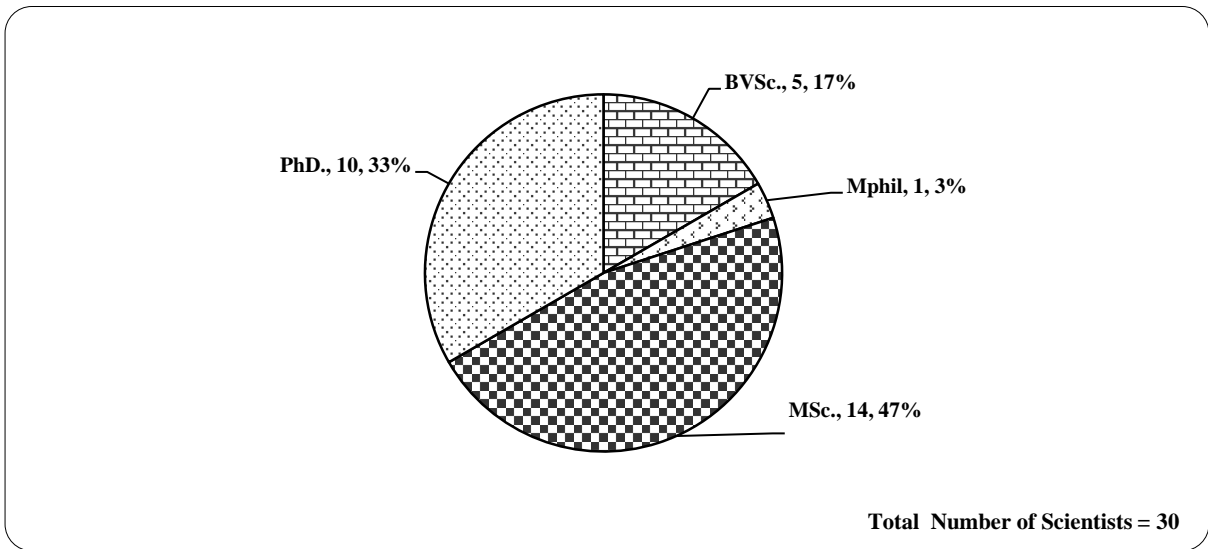


Figure 101-Numbers of Scientists (%) by Highest Academic Qualifications at VRI - 2018

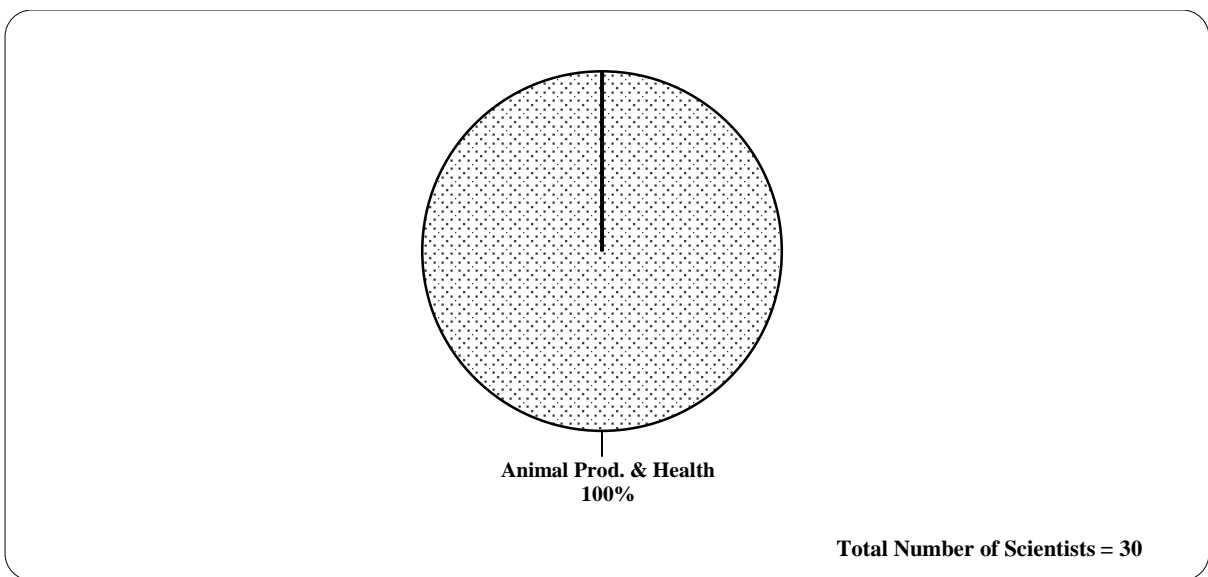


Figure 102-Numbers of Scientists (%) at VRI by Discipline - 2018

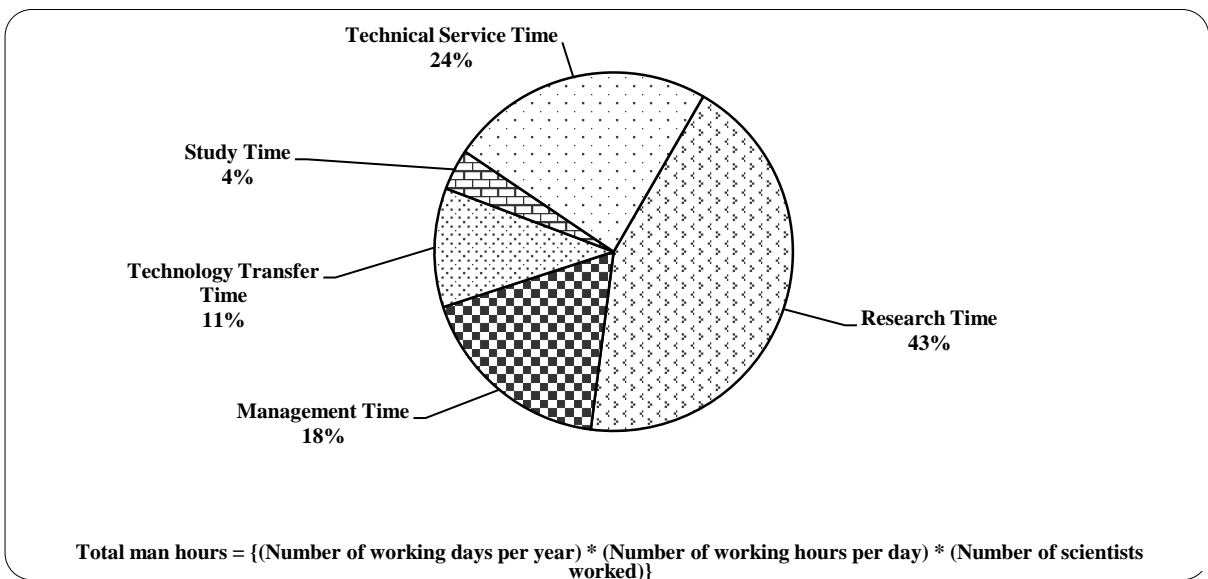


Figure 103-How Scientists Spent (%) Time at VRI - 2011

**Part 3**

**Directory of Research Projects  
2018**





## Coconut Research Institute

Title	Principal Investigator
<b>Agri. Eco. &amp; Policies</b>	
Identification of the contributing factors for coconut prices and developing the price forecasting model	Abeysekara M.G.D
Assessing the impact of external shocks to the coconut market, tariffs on edible oil imports by an Equilibrium Displacement Model approach	Pathiraja P.M.E.K
Assessment of international organic fertilizer standards and related crop export regulations on the use of local organic fertilizer sources to organic coconut industry in Sri Lanka	Jayalath K.V.N.N
Value chain analysis of sap based products of coconut industry in Sri Lanka	Pathiraja P.M.E.K
Assessing the occurrence of the Tapering Disorder among CRIC 60 (TxT) palms	Pathiraja P.M.E.K
An analysis of the impact of diverse nature of the economic transitions on Sri Lankan coconut sector	Idirisinghe I.M.S.K
Development of mixed cropping models to increase coconut production in the dry zone by changing micro-climatic conditions	Udumann S.S
Dynamics of household coconut and edible oil consumption of Sri Lankan consumers	Abeysekara M.G.D
<b>Agricultural Engineering</b>	
Performance evaluation of a flash dryer to dry	Fernando J.A.K.M
Improvement of the Ceylon drum system for extraction of bristle fiber	Fernando J.A.K.M
Development of a technology for coconut coir retting using consortium of microorganisms	Fernando J.A.K.M
Improvement of a cushion / mattress using coir fiber	Fernando J.A.K.M
<b>Crop Production</b>	
Development of a sustainable moisture conservation method by using carbonized plant material for mature coconut Plantations	Raveendra S.A.S.T
Development of a sustainable moisture conservation method by using carbonized plant material (bio-char) for coconut seedlings	Raveendra S.A.S.T
Evaluation of new herbicides (Continuous)	Raveendra S.A.S.T
Evaluation of growth performance of CO3 fodder grass under different management conditions in coconut plantations	Raveendra S.A.S.T
Optimizing experimental designs in coconut research	Waidyarathne K.P
Evaluation of growth performance of Fodder Sorghum under different management conditions in coconut plantations	Raveendra S.A.S.T
Evaluation of different buffalo grazing systems under coconut	Raveendra S.A.S.T

## **Plant Biotechnology**

Induction of somatic embryogenesis and plant regeneration in ovary derived callus	Vidhanarachchi V R M
Investigation of gene expression on somatic embryogenesis	Vidhanarachchi V R M
Identification of new explants for vegetative propagation of coconut	Vidhanarachchi V R M

## **Plant Breeding**

Evaluation of hybrid vigour of brown dwarf crosses for yield and tolerance to moisture stress in different Agro ecological zones	Ruwan Kumara S.W.G.C
Evaluation of hybrid vigor of Sri Lankan Tall and Sri Lankan Dwarf crossed with exotic varieties	Meegahakumbura M.G.M.K
Evaluation of intra-varietal dwarf coconut hybrids for home gardens and beverage purposes	Meegahakumbura M.G.M.K
Estimation of genetic diversity, nut water and oil quality of indigenous king coconut population in Sri Lanka and release new king coconut cultivars for beverage/cosmetic industry	Meegahakumbura M.G.M.K
Collection and conservation of local and exotic germplasm and utilization in breeding programmes	Meegahakumbura M.G.M.K
Evaluation of drought tolerant Sri Lankan tall accession Ambakelle special in different agro climatic zones	Ruwan Kumara S.W.G.C
Screening of coconut varieties/ hybrids tolerant to Weligama Coconut Leaf Wilt Disease	Dissanayake H.D.M.A.C
Development of new cultivars tolerant/ resistant to Weligama Coconut Leaf Wilt Disease	Dissanayake H.D.M.A.C

## **Plant Physiology**

A preliminary study on the effects of anti-transpirant on coconut seedlings under water stressed conditions	Chandratilake T.H
Realization of the maximum benefits of Coconut – Gliricidia bio energy system	Nainanayake N.A.D.P
Screening coconut varieties for temperature tolerance	Nainanayake N.A.D.P
Determination of the effect of pollen type on hybrid fruit setting (Pilot Field Testing)	Nainanayake N.A.D.P
Evaluation of the success of coconut replanting programs of Sri Lanka	Waidyarathne K.P

## **Plant Protection**

Assessment of prevalence of Plesispa beetle, black beetle, red weevil and Aceria mite	Aratchige N.S
Development of coconut cultivars resistance to coconut mite using morphological parameters	Dissanayake H.D.M.A.C
Study the correlation between intensity of mite damage and biochemical compounds in different coconut varieties	Aratchige N.S
Conducting surveys to assess the impact of release of predator mites to control Aceria mite	Jayalath K.V.N.N
Formulation and testing of different semiochemicals / volatiles and essential oils on coconut pests	Kumara A.D.N.T
Testing non-chemical methods for controlling of black beetle	Aratchige N.S

Testing IPM methods for controlling black beetle	Suwandarathne N.I
Testing different fungicides for their efficacy in managing bud rot, leaf spot, stem bleeding	Wijesekara H.T.R
Investigation on the effect of plant extracts as natural fungicides	De Silva P.H.P.R
Improvement of WCLWD phytoplasma detection methods	Wijesekara H.T.R

### **Post-harvest Technology**

Improvement of Extra VCO production	Yalegama L.L.W.C
Evaluation of effect of varietal differences, maturity stages and extraction methods for the quality of coconut oil	Yalegama L.L.W.C
Development of coconut butter	Yalegama L.L.W.C
Determination of the effect of fresh creamed coconut to reduce domestic wastage and study on health benefits of creamed coconut	Yalegama L.L.W.C
Determination of the effect of temperature and brown testa for dry processing of VCO	Yalegama L.L.W.C
Development and improvement of value added products from coconut water	Yalegama L.L.W.C
Nutritional studies of coconut sap based sugar	Yalegama L.L.W.C
Improvement to the quality of coconut sap and its products	Yalegama L.L.W.C
Investigation of physical and chemical changes during deep frying of coconut oil	Yalegama L.L.W.C

### **Soil Science**

Assessment of risks, removal of polycyclic Hydrocarbons and study the behavior of trace metals in biochar incorporated soil	Nadheesha M.K.F
Quantification of below ground carbon stock and development of an allometric model to estimate the variation in below ground carbon stock of coconut palms in different age groups	Raveendra S.A.S.T
Development of sustainable nutrient recycling system for mature coconut plantations	Raveendra S.A.S.T
Evaluation of the effect of high doses of dolomite to improve Mg levels of coconut palms	Nadheesha M.K.F
Evaluation of different fertilizer placement techniques	Nadheesha M.K.F

## Department of Export Agriculture

<b>Title</b>	<b>Principal Investigator</b>
<b>Agri. Eco. &amp; Policies</b>	
Identification of the feasibility of expanding Vanilla cultivation in central province Sri Lanka	Chathurika W.G.G.
Effectiveness of Measures taken to control Nutmeg Leaf fall disease	Disna A.P.P.
<b>Agricultural Engineering</b>	
Development of a small scale coffee roaster	Rosika A.D.D.
Development of Nutmeg manual Harvesting tool	Rosika A.D.D.
<b>Crop Production</b>	
Evaluation of plant training system effect on growth and yield of Arabica coffee (HDI) under natural shade	Raveendran A.
Comparison of black pepper yield per unit area of plants originated from orthotropic and plagiotropic branches	Ranasinghe R.A.D.R.A.
Effect of irrigation and fertilizer application on inducing flower initiation and yield of bush pepper throughout the year	Ranasinghe R.A.D.R.A.
Study the optimum shade level for producing export quality betel leaves	Ranasinghe R.A.D.R.A.
Studies on use of soil moisture conservation methods and agronomic management practices for improvement of black pepper productivity as climate change adaptation techniques	Ranasinghe R.A.D.R.A.
Study the potential use of coconut tree as a live supporting material for Pepper	Dissanayaka D.M.P.V.
Growth and yield performance of Macadamia VP plants at different spacing levels	Ranawaka R.A.A.K.
Effect of different level of shade on growth, yield and quality of Ginger	Kanakawatta J.M.R.A.B.
Effect of different level of irrigation on growth and yield of turmeric	Kanakawatta J.M.R.A.B.
Effect of different concentration of plant hormones (IBA & NAA) on rooting and growth of stem cutting of cinnamon)	Malkanathi M.D.
Studies on Productivity improvement of Cocoa under coconut in Kurunagala district of Sri Lanka	Priyadarshani K.D.N.
Effect of micro irrigation on yield performances of Areca nut, pepper system	Yatawatta V.J.
Effect of different shade levels on growth and yield of turmeric	Kanakawatta J.M.R.A.B.
Studies on growth performance of Cinnamon in coco peat as nursery pots	Pabasara P.K.D.
Identification of chemical and element composition of sandy textured cinnamon bark tissues	Weerasooriya S.N.
Evaluation of suitable fertilizer level of Department fertilizer mixture for single supporting system in Betel cultivation	Malani Chandrarathne W.
Evaluation of different irrigation techniques for pepper in different agro climatic zone	Raveendran A.

Effect of the age and grafting portion of rootstock on approach grafting of nutmeg	Yatawatta V.J.
Effect of different harvesting age of rhizomes on growth and yield of ginger	Yatawatta V.J.
Effect of fertilizer application time on growth yield and peel ability of cinnamon	Malkanathi M.D.
Effect of different pruning levels on canopy development and yield of pepper	MalaniChandrarathne W.
Investigation on use of indigenous techniques for controlling bacterial leaf blight in betel	MalaniChandrarathne W.
Effect of planting material originated from different cutting types on canopy development of black pepper	Erabudupitiya H.R.P.B.
Improvement of resource use efficiency of black pepper to increase the yield through support tree manipulation	Erabudupitiya H.R.P.B.
Home garden model of export agricultural crops at Matale	Raveendran A.
Field evaluation of grafted Nutmeg selections	Attanayake A.M.C.I.M.
Application of plant growth regulators for flowering induction of clove	Attanayake A.M.C.I.M.
Comparison of growth and yield of pepper raised from tissue cultured plants and single nodal cutting plants	Attanayake A.M.C.I.M.
Establishment of crop loss in clove due to occurrence of extreme weather events during flower bud development stage	Erabudupitiya H.R.P.B.
Study of flowering and fruiting behaviour of newly introduce piper nigrum Hybrid (Dingirala) and local selection(MB-12) IN Matale and Nillamba of Sri Lanka	Yatawatta V.J.
Rehabilitation of improved cocoa cultivars with Amelando type	Raveendran A.
Evaluation of field performance of rooted cocoa (Theobroma cocoa L.)(Matale)	Raveendran A.
Effect of stem bending on the formation of shoots of cinnamon	Pabasara P.K.D.
Multiplication and evaluation of selected hybrid cinnamon plants under recommended agronomic practices foe quality, growth, and yield performances	Weerasooriya S.N.

### **Plant Biotechnology**

Technology innovation for large-scale multiplication of Cardamom, Cinnamon, Black pepper, Ginger, Turmeric	Priyadarshani K.D.N.
In vitro Propagation of Coffee	Priyadarshani K.D.N.
In-vitro Propagation of Nutmeg	Priyadarshani K.D.N.
In-vitro Propagation of Betel	Priyadarshani K.D.N.
Synchronization of flowering and fruiting behavior of Grafted Nutmeg in the context of climate changes effect	Attanayake A.M.C.I.M.
Field Evaluation of seedling and air layering planting material originated from different sizes laterals and up right branches of high yielding Nutmeg	Attanayake A.M.C.I.M.
In vitro Propagation of Export Agricultural crops (Garcinia, wallapatta and pepper hybrid)	Attanayake A.M.C.I.M.
Identification of visible indicators of Cinnamon to monitor major soil nutrients	Tharanga K.H.G.M.

Comparison of growth and yield of pepper raised from orthotropic (Terminal) plagiotropic and rooted cuttings of local selections	Attanayake A.M.C.I.M.
Collection and investigation for growth yield and chemical properties of different Garcinia selection in Sri Lanka	Attanayake A.M.C.I.M.

### **Plant Breeding**

A comparative study of growth, yield and quality of half sib progenies of Sri Gemunu and Sri Vijaya	Ranawaka R.A.A.K.
Evaluation of different plant raising method for the production of betel planting materials under shade nursery	Shantha K.G.P.
Evaluation of ginger germplasm under coconut	Silva S.I.C.
Exploration of Goraka accessions based on chemical properties and establishment of a field gene bank	Dissanayake D.G.H.M.K.
Hybridization of selected black pepper cultivars for low country intermediate zone	Silva S.I.C.
Collection establishment and evaluation of turmeric germplasm under coconut	Silva S.I.C.
Collection, establishment evaluation and conservation of betel germplasm in Sri Lanka	Silva S.I.C.
Comparison of different potting/nursery media used with coconut husk and coir dust for betel cutting production	Shantha K.G.P.
Evaluation of growth performance of Piper Nigrum L in Ampara district, Sri Lanka, A field trial on selected P.Nigrum hybrids and local selection	Dissanayake D.G.H.M.K.
Determination of QTL molecular markers for quantitative characters black pepper	Munasinghe M.S.S.
Evaluation of the performance of selected coffee cultivars under coconut in low country intermediate zone	Silva S.I.C.
Evaluation of selected Cocoa lines for intercropping with coconut in low-country intermediate zone	Silva S.I.C.
Evaluation and comparison of superior quality characteristics of Pieris cinnamon with selected cinnamon accessions (Sri Gamunu& Sri Wijaya)	Weerasooriya S.N.
Multifaceted pepper Development program	Senevirathne J.M.
GI Fixing of Black Pepper	Senevirathne J.M.
Evaluation of catimor coffee	Senevirathne J.M.
Developing new crops patchouli	Senevirathne J.M.
GI Fixing of Coffee	Senevirathne J.M.
Cocoa seed garden establishment	Senevirathne J.M.
Field Evaluation of Cocoa	Senevirathne J.M.
Characterization of available cocoa lines and establishment of a clonal garden	Rajapaksha I.G.M.
Collection and in-situ evaluation of local pepper selections	Rajapaksha I.G.M.
Collection, characterization, conservation utilization of piper Spp. Exist in Sri Lanka	Senevirathne J.M.

## Plant Protection

Study the effect of seawater for management of pest and disease in cinnamon nurseries.	Jayasingha G.G.
Investigation of etiology, disease development and management of rough bark disease of cinnamon	Jayasingha G.G.
Study on canker formation in cinnamon.	Maddegoda C
Evaluation of new hybrid black pepper varieties against insect pests damages	Samarasinghe M.K.S.R.D.
Identification of pests of Betel ( <i>Piper betel</i> L.) cultivation and appropriate management practices to maintain the export quality of the leaves	MalaniChandrarathne W.
Establishment and evaluation of ultra-sonic sound systems to manage vertebrate pests in cinnamon	Maddegoda C
Evaluation of collected goraka cultivars for the resistance against the oyster scale insects	Widanapathirana C.U.
The awareness and use of pesticide usage of farmers on EACs	Widanapathirana C.U.
Management of black pepper quick wilt disease through enhancing rhizosphere antagonistic micro flora	Kodithuwakku R.D.
Study the ecology (seasonal abundance, locality of spread and peak swarming period etc.) of cinnamon wood borer	Jayasingha G.G.
Identification and studying the biology, ecology and management of cinnamon thrips	Jayasingha G.G.
Use of beaveria brassiana for the control of coffee berry borer	Samarasinghe M.A.M.K.S.
Investigation of biological control against of coffee berry borer	Samarasinghe M.K.S.R.D.
Effect of Rhizome scales on germination and subsequent yield of Ginger	Samarasinghe M.K.S.R.D.
Screening of different accessions of Cardamom against thrips.	Samarasinghe M.K.S.R.D.
Designing a trap for Coffee berry borer.	Samarasinghe M.K.S.R.D.
Occurrence of insect pest and disease incidences in three commonly cultivated Black pepper ( <i>piper nigrum</i> L.) cultivars grown under different shade levels and climatic conditions	Widanapathirana C.U.
Management of leaf fall (Die-back of branches) disease of mature clove trees in clove growing areas	Wijekoon W.M.R.W.B.
Management of nutmeg leaf fall disease	Wijekoon W.M.R.W.B.
Management of major diseases of ginger ( <i>Zingiberofficinale</i> Rosc.)	Wijekoon W.M.R.W.B.
Application of biocontrol agent ( <i>Trichoderma</i> sp.) on controlling black pepper quick wilt disease	Kodithuwakku R.D.
Study the white root disease infection, its pathogenicity and ecological factors that enhance the disease in cinnamon	Jayasingha G.G.
Study the disease progress of canker incidence and yield loss of canker incidence in Cinnamon	TharaMadurangi H.M.T.
Study the effect of water stress on pest and disease incidences in Cinnamon nurseries	TharaMadurangi H.M.T.

Screening of cinnamon germplasm to select resistant lines for existing pests and diseases of cinnamon	Maddegoda C
Defining visual indicators for nematode borne slow wilt of black pepper and investigating the effect of different control methods on pepper slow wilt causing nematodes	Weerasinghe W.M.Y.K.
<b>Post-harvest Technology</b>	
Development of technology to produce value added products of Garcinia (Goraka)	Liyanage T.
Determination of caffeine content of Arabica and Robusta coffee selections.	Liyanage T.
Investigation on medical value of cinnamon base products	Liyanage T.
Development of value added products using waste betel leaves.	Dissanayaka D.M.P.V.
Anti - Fungal and Anti - Bacterial activity of true cinnamon (cinnamomum zeylanicum Blume) for skin and oral diseases in human'	Wijeweera A.A.
Comparative evaluation of Anti-diabetic activity of two introduced varieties (Sri Gemunu and Sri Vijaya ) of true cinnamon (Cinnamon zeylanicum Blume)	Wijeweera A.A.
Study the quality of cinnamon quills at three levels in value chain after primary processing in Matara District	Wijeweera A.A.
Preparation of a soup cube by using cinnamon bark oleoresin	Chandrani P.A.K.
New crops - Alovera, cultivation different cultivar collection and product development	Liyanage T.
Comparative analysis on essential oil chemical composition and proximate mineral analysis of clove bud stem and leaf	Liyanage T.
Analysis of physico - chemical properties of turmeric powder available in local market	Hettiarachchi S.S.
Determination of chemical constituents and antioxidant properties of nutmeg	Karunaratne A.I.
Determination of chemical constituents and antioxidant properties of turmeric	Karunaratne A.I.
Evaluation of yield and quality characteristics of true cinnamon in different Agro-ecological regions in Southern Province	Wijeweera A.A.
Effect of sulfur - fumigation and packaging materials on shelf life of cinnamon quills	Wijeweera A.A.
Development of market preferable turmeric powder from local turmeric cultivars and isolation of curcumin from turmeric rhizomes.	Induruwa I.V.A.D.C.
Effect of steam blanching in black pepper processing	Induruwa I.V.A.D.C.
Study on storage of fresh ginger	Induruwa I.V.A.D.C.
Design, fabrication and evaluation of greenhouse Dryer for pepper.	Induruwa I.V.A.D.C.
Identification of thin layer drying Characteristics in Nutmeg: Comparison between sun drying and mechanical drying	Induruwa I.V.A.D.C.
Study on enhancing the efficiency of cinnamon peeling	Induruwa I.V.A.D.C.
Identification of critical hazards in cinnamon primary processing and improvement of quality in cinnamon primary process by reducing hazards	Liyanage T.
Introducing an ice cream using cinnamon bark oleoresin	Chandrani P.A.K.



## Soil Science

Studies on effect of partially burnt paddy husk as an alternative nutrient source for growth and yield of betel	Dissanayaka D.M.P.V.
Phosphorous solubility improvement using mycorrhiza and commercial sulfur powder betel under coconut	Dissanayaka D.M.P.V.
Develop test and monitoring procedures and practice at site regional and national level of below ground biodiversity	Fonseka W.A.N.D.
Effect of Cinnamon leaf compost and inorganic fertilizer and their combinations on growth and yield of cinnamon	Samaraweera D.N.
Characterization of soil fertility status in betel cultivation	Dissanayaka D.M.P.V.
Effect of dolomite application on growth and yield of cinnamon grown in acid soil.	Samaraweera D.N.
Effect of growing Gliricidia and legume cover crops on growth, yield and soil fertility status in cinnamon	Samaraweera D.N.
Characterization and evaluation of soil fertility status of selected soils of major cinnamon growing areas and crop productivity relation.	Samaraweera D.N.
Effect of applied sulfur containing fertilizers on growth and yield of Cinnamon.	Samaraweera D.N.
Effect of arbuscular mycorrhizal infection on occurrence of yellowing in black pepper plants under different soil moisture levels.	Weerawardena T.E.
Sustainable methods of growing ginger in containers for household consumption and for commercial purpose	Gunarathne H.D.A.K.
Study of inorganic response and pest and disease resilience of new black pepper hybrid Dingirala variety in dry zone Sri Lanka	Idamekorala P.R.
Recycling of Pepper stalks for sustainable crop production in pepper plantations	Gunarathne H.D.A.K.
Comparison of total ecosystem benefits of pepper monocarp with intercropping and mixed cropping systems of pepper with special reference to Kandyan home gardens	Disna A.P.P.
Determination of optimum PH level for growth of Cinnamon	Tharanga K.H.G.M.
Effect of biofilm-biofertilizer on growth and yield of Cinnamon	Tharanga K.H.G.M.
Effect of type of planting materials & different rates of inorganic & organic fertilizers on growth, yield & quality of cinnamon	Ira Kalyani V.
Effect of different levels of N,P and K fertilizers on growth, yield and quality of the Cinnamon	Ira Kalyani V.
Productivity improvement of cocoa through integrated soil and plant nutrient management under rubber and coconut	Weerawardena T.E.
Investigation of effect of source of N on growth and yield of black pepper	Idamekorala P.R.
Land suitability classification for Black Pepper	Idamekorala P.R.
Strategies for organic cultivation of Arabica Coffee	Idamekorala P.R.
Development of soil conditioner using bio fertilized cocoa pod husk for reclamation of cocoa field	Weerawardena T.E.
Effect of cover crops on soil properties, growth and yield of pepper	Gunarathne H.D.A.K.

## Department of Agriculture

### Regional Agricultural Research & Development Centre – Angunakolapellessa

<b>Title</b>	<b>Principal Investigator</b>
<b>Crop Production</b>	
Development of technical package to seed viability problems associated with groundnut with groundnut seeds	Gunathilaka W.M.N.D.
The effect of seasonal weather factor extremes (Temperature, Rain fall and Relative humidity) on growth and yield of Groundnut ( <i>Arachis hypoea</i> L.) in different agro ecological zones in Hambantota and Monaragala district	Edirimanna I.C.S.
Effects of different mulches for the yield and productivity of Big Onion	Senarathyapa S.D.
Collection, establishment and evaluation of moringa diversity in Island	Senarathyapa S.D.
Evaluation of suitable Agronomy practices for moringa leaf production	Senarathyapa S.D.
<b>Biotechnology</b>	
In-vitro mutagenesis of banana for fusarium wit ( <i>Fusarium oxysporium</i> f.sp. Cubense (foc) resistance/tolerance	Gunasena M.T.
<b>Breeding</b>	
Drought screening of CYMMIT maize lines	Gunathilaka W.M.N.D.
Development of high yielding and disease tolerant Mung bean varieties for seasonal cultivation year month of Commence-2013	Nayana E.K.E.C.
Development of high yielding pest and disease tolerant varieties for catch cropping	Nayana E.K.E.C.
Selection of high yielding (large sized), short duration red onion line/lines through crossing	Nayana E.K.E.C.
Breeder seed production of Sesame variety Uma, Malee and MII	Nayana E.K.E.C.
Sesame exotic germplasm evaluation trial	Nayana E.K.E.C.
Sesame variety MI3 purification programme Commence	Nayana E.K.E.C.
Development of different maturity stages cowpea varieties by selection and hybridization	Samaranayaka B.N.
Development of high yielding Soybean varieties by Selection	Samaranayaka B.N.
Breeders seed production of ANKCP I & ANKCP 2 Cowpea & ANKK Brown Horse gram	Samaranayaka B.N.
Development of open pollinated Chili varieties	Samaranayaka B.N.
Screening of Mungbean germplasm for resistance/tolerant against major diseases	Gunasena M.T.
Screening of onion germplasm for resistance /tolerant against major disease	Gunasena M.T.
Collection, establishment and evaluation of wood apple germplasm from available zones	Wijithawarna W.A.
Collection, establishment and evaluation of Beli germplasm from available zones	Wijithawarna W.A.
Evaluation of selected banana accessions	Wijithawarna W.A.
Collection, establishment and evaluation of citrus germplasm from southern dry zones	Wijithawarna W.A.

Evaluation of local and exotic mango germplasm for variety development	Wijithawarna W.A.
Groundnut variety improvement through conventional breeding techniques	Chamila Jeewani D.G.
Development of high yielding, medium duration groundnut varieties (PYT & MYT)	Chamila Jeewani D.G.
Development of medium duration, and large seeded groundnut variety(PYT & MYT)	Chamila Jeewani D.G.
Development of small seeded, red testa color groundnut varieties(PYT & MYT)	Chamila Jeewani D.G.
Development of high yielding, short duration groundnut varieties having better farmer preference(MYT & NCVT)	Chamila Jeewani D.G.
Development of high yielding, medium duration and large seeded groundnut lines (NCVT & VAT)	Chamila Jeewani D.G.
Breeder seed production of groundnut varieties - Tissa, Indi,LankaJambo and ANKGI	Chamila Jeewani D.G.
Multiplication of groundnut varieties and promising groundnut lines	Chamila Jeewani D.G.
VAT of mustard	Chamila Jeewani D.G.
Germplasm evaluation of heat tolerant wheat accessions	Chamila Jeewani D.G.
Evaluation of breeding line on pomegranate	Senarathyapa S.D.
National coordination varietal test - Cowpea	Senarathyapa S.D.
National coordination varietal test - Chilli (OPV)	Senarathyapa S.D.
National coordination varietal test - Groundnut	Senarathyapa S.D.
National coordination varietal test - Black gram	Senarathyapa S.D.
National coordination varietal test-finger millet	Senarathyapa S.D.
National coordination varietal test-Big Onion	Senarathyapa S.D.
National coordination varietal test -Mung bean	Senarathyapa S.D.
Establishment and maintenance of parental plant stocks of recommended Thumba varieties	Weerasekara D.
Maintenance and conservation of Thumba germplasm	Weerasekara D.
Hybrid variety development programe of Thumba	Weerasekara D.
National coordinated Varietal Trial of Okra	Weerasekara D.
Major yield trial of Ela-batu	Weerasekara D.
Germplasm collection, evaluation and selection program of Drumstick	Weerasekara D.
Testing adaptability of sweet gourd to the Sri Lankan condition	Weerasekara D.
Planting material production of recommended thumba varieties	Weerasekara D.
<b>Engineering</b>	
Evaluation of desiccation techniques for machinery harvesting of OFC	Gunathilaka W.M.N.D.
Development of desiccation techniques to machinery harvesting of Sesame	Gunathilaka W.M.N.D.

### **Plant Physiology**

Evaluation of different techniques to synchronization of flowering of mung bean	Gunathilaka W.M.N.D.
Morphological characterization and flower morphology of wood apple	Wijithawarna W.A.
Study of outer canopy ball pruning of mango	Wijithawarna W.A.
Screening of vast range of dense planting of mango	Wijithawarna W.A.

### **Plant Protection**

Identification of methods to manage virus and virus like diseases in cucurbits	Gunasena M.T.
Identification of methods to manage virus and virus like diseases in Chilli	Gunasena M.T.
Identification of methods to manage papaya rings spot virus in papaya	Gunasena M.T.
Development of technological package for finger millet to enhance the productivity of rain fed cultivation focusing upgrade the farmer income	Liyange D.P.P.
Determine the ability of weed suppress by using ,multiple rows and mulching in cowpea cultivation	Liyange D.P.P.

### **Soil Science**

Identification of critical leaf N level for papaya to mitigate climate change impact	Munasinghe S.T.
Testing of imported fertilizer mixtures for Maize in DL Ib ecological region	Munasinghe S.T.
Mung bean crop improvement for strengthening of the national food production program	Munasinghe S.T.
Promotion of Conservation Agriculture for sustainable land productivity improvement and mitigating agricultural water pollution in Hambantota District	Munasinghe S.T.

## Regional Agricultural Research & Development Centre – Aralaganwila

<b>Title</b>	<b>Principal Investigator</b>
<b>Breeding</b>	
National Coordinated Varietal Trial mung bean	Wijithawarna W.A.
Characterization & varietal release of onion ( <i>Alliums cepa</i> L.)	Wijithawarna W.A.
Major Yield Trial of quality cluster onion with high yield	Wijithawarna W.A.
National Coordinated Varietal Trial of Cluster onion (bolting)	Wijithawarna W.A.
Varietal Adaptability trial of short duration (60-75 days) Cluster onion	Wijithawarna W.A.
Evaluation of cluster onion germplasm under rain shelter & open field condition	Wijithawarna W.A.
Investigation of economical improvement of hermaphrodite Thumbakarawila hybrid variety	Wijithawarna W.A.
National Coordinated Varietal Trial of Ground nut (Short duration)	Wijithawarna W.A.
National Coordinated Varietal Trial of Ground nut (Large seeded)	Wijithawarna W.A.
National Coordinated Varietal Trial of Cowpea	Wijithawarna W.A.
National Coordinated Varietal Trial of Rice (3, 3 1/2, 4, 4 1/2 months)	Wijithawarna W.A.
National Coordinated Varietal Trial Black Gram	Wijithawarna W.A.
National Coordinated Varietal Trial of Cluster onion (Kilinochchi)	Wijithawarna W.A.
Hybridization of Cluster Onion	Wijithawarna W.A.
<b>Crop Production</b>	
Effect of shading materials on growth and yield of spine gourds	Wijithawarna W.A.
Dragon fruit vine training and pruning method for higher fruit yield	Wijithawarna W.A.
Effect of mulching materials on performances of thibbatu	Wijithawarna W.A.
Effect of paddy husk bio-charcoal on growth and yield of red onion in cluster onion	Wijithawarna W.A.
Effect of different shade levels on growth and yield of dragon fruit cultivation under dry zone condition	Wijithawarna W.A.
<b>Plant Protection</b>	
Evaluation of low cost establishment method for efficient weed management in rice and its economic impact	Wijithawarna W.A.
<b>Soil Science</b>	
Application of super moisture absorbent to reduce the water applications	Wijithawarna W.A.
Impacts of Climate Change on Maize Production in Sri Lanka	Wijithawarna W.A.
Long term application of chemical fertilizer and organic matter	Wijithawarna W.A.
Effect of bio-charcoal in paddy production in Non-calico brown soil	Wijithawarna W.A.

## Regional Agricultural Research & Development Centre – Bandarawela

Title	Principal Investigator
<b>Breeding</b>	
Development of F1 HYBRID & Open pollinated varieties and seed production - fruit crops (Strawberry)	Jayamanna JMDDE
development of tomato hybrids for UCIZ	Gamage G.G.S.U
Development of bacterial wilt tolerant tomato variety	Gamage G.G.S.U
development of heat and drought tolerant tomato varieties	Gamage G.G.S.U
development of local bell pepper hybrid	Gamage G.G.S.U
National co-ordinated varietal trial-tomato	Gamage G.G.S.U
commercial variety evaluation tomato and bell pepper	Gamage G.G.S.U
Development of rust resistance bean varieties through conventional and molecular breeding techniques	Dissanayake RMN
Development of high yielding better quality bean varieties	Dissanayake RMN
Development of heat tolerant bean varieties	Dissanayake RMN
Bush bean variety improvement	Dissanayake RMN
Hybridization of pole bean (Development of short age bean varieties)	Dissanayake RMN
Development of open pollinated/hybrid varieties (capsicum crop improvement program)	Pavithrani YLB
Development of open pollinated/hybrid varieties (pear crop improvement program)	Pavithrani YLB
Development of capsicum inbred lines by using local germplasms	Pavithrani YLB
Development of F1 HYBRID & Open vegetable varieties and seed production (Carrot)	Jayamanna JMDDE
<b>Crop Production</b>	
Evaluation of pruning and trellising to reduce low moisture stress in dry spell on bean	Jayamanna JMDDE
Evaluation of application of salicylic acid to reduce low moisture stress on bean	Jayamanna JMDDE
Evaluation of different irrigation levels on different bean varieties to minimize the economic loss from low moisture stress in dry spell	Jayamanna JMDDE
Evaluation of different intercropping systems to reduce tuber quality disorders of potato due to heat stress	Jayamanna JMDDE
Development of local Gerbera varieties through conventional breeding techniques	Dissanayaka NBU
evaluation of different seeding methods of carrot	Jayamanna JMDDE
Evaluation of different low moisture stress minimizing strategies through altering the root zone environment	Jayamanna JMDDE
Evaluation of different methods of reducing night temperature in seed potato production in SNFT	Jayamanna JMDDE
Evaluation of different aeration methods on hydroponic	Jayamanna JMDDE
Evaluation of different trellising methods on bean	Jayamanna JMDDE
Evaluation the performances of roses in three growing systems(poly tunnel, rain shelter and open field)	Somachandra KP

Practice stem and flower pruning to increase rose flower quality and quantity	Somachandra KP
Test different fertilizer practices to improve the flower production	Somachandra KP
Investigate the pest /disease problems in three growing systems (poly-tunnel, rain shelter and open field)	Somachandra KP
Technological Interventions to improve production and Productivity of Selected Fruit Crops ( Citrus)	Jayamanna JMDDE

### **Plant Protection**

Evaluation of different insecticides against larvae stage of tuta absoluta in tomato grown in open field	Hadji TKAI
influence of sodium silicate in induction of resistance to insect pests in cabbage	Hadji TKAI
Improvement of agrochemical usage pattern of farmers in welimada for a safe and economically viable crop production	Hadji TKAI
Influence of sodium silicate in induction of resistance to insect pests in pole bean	Hadji TKAI
performance of two types of insect screens as a physical barrier against insect pest of cabbage	Hadji TKAI
Identification of resistant /moderately resistant breeding lines fusarium oxysporum and fusarium solani	Somachandra KP
Effect of fungicides on growth of fusarium oxysporum on bean in-vitro	Jayasekara EAESS
Assessment of different plant species for Bio-fumigation of soil to manage damping off in nurseries	Jayasekara EAESS
assessment of different plant species for Bio-fumigation of soil to manage fusarium wilt in bean	Jayasekara EAESS
Identification of disease incidence and severity of bean root and fusarium wilt(Bean yellowing)	Jayasekara EAESS
Determination of soil physical and chemical properties in surveyed bean field	Jayasekara EAESS
Assessment of mulching and removal of leaves to control tomato early blight	Jayasekara EAESS
Crop rotation programme to minimize fungal bean yellowing	Jayasekara EAESS

### **Soil Science**

Effects of low P application and split application on crop yields and soil accumulation	Jayamanna JMDDE
Field validation of rapid method for calculating the lime requirement in soil of the UCIZ	Jayamanna JMDDE
Development of site specific fertilizer management systems for sustainable crop production	Jayamanna JMDDE
Effect of bio char on soil heath and crop yield of up country vegetable	Jayamanna JMDDE
Effect of micro nutrients on up country vegetables and soils (long term)	Jayamanna JMDDE
Nursery application of phosphorus on seedling for up country vegetable crops	Jayamanna JMDDE

## Regional Agricultural Research & Development Centre – Bombuwala

Title	Principal Investigator
<b>Breeding</b>	
Climatic Research Project	Weerasinghe WDP
Improvement of rice varieties through conventional breeding technique	Weerasinghe WDP
International Rain fed rice observational Nursery (INGER)	Weerasinghe WDP
Seed production (Breeder Seeds & other seed multiplication)	Weerasinghe WDP
Seed production of traditional rice varieties	Weerasinghe WDP
Phenotypic & Genotypic trait analysis for BLB	Weerasinghe WDP
<b>Crop Production</b>	
VAT Programme	Sandamali TGI
Evaluation of anaerobic germination trait incorporated rice lines for water seeding	Dissanayake I
Testing the nitrogen response of promising rice lines	Dissanayake I
NCRVT Programme	Sandamali TGI
Screening of rice lines for submerged tolerance(Climatic Resilience project)	Rupasinghe MGN
Development of a reliable screening technique for Fe toxicity tolerance in Rice	Dissanayake I
testing of different rice varieties for uplands(sorjan beds)	Rupasinghe MGN
Effect of seeding density & seedling age on grain yield of machinery transplanted rice in LCWZ	Dissanayake I
Anaerobic germination	Sandamali TGI
Improvement of rice varieties for salinity & submergence tolerance	Sandamali TGI
Identification of suitable Bw rice varieties for machinery transplanting	Dissanayake I
Submerged tolerant lines -Screening	Rupasinghe MGN
Screening of rice lines for water seeding - Climatic Resilience project	Dissanayake I
Screening of rice lines for water seeding CLIMATIC RESILIENCE PROJECT	Dissanayake I
Screening of rice lines/varieties for rain fed uplands	Weerasinghe WDP
Evaluation of different rice germplasm for upland cultivation	Rupasinghe MGN
<b>Plant Protection</b>	
shelf life of sterile rice forage for the growth of beneficial bacteria	Sandamali TGI
To identify suitable weed control methods for upland rice	Dissanayake I
Study on parasitization of stem borer and leaf folder	Fernando HNS
screening of CRVT lines against Brown Plant Hoppers- Nilarparvata lugens	Fernando HNS
screening of NCRVT lines against Gall midge Orseolia oryzae	Fernando HNS
Screening of breeding lines & seeds against BPH	Fernando HNS
Screening of traditional rice varieties for rice sheath mite	Fernando HNS
Screening for BLB resistance	Fernando HNS
Screening for blast resistant rice lines	Fernando HNS
Development of fungicide application schedule to control brown spot disease	Fernando HNS



Evaluation time of power weeder application for weed control in machinery transplanted rice in LCWZ	Dissanayake I
National coordinated herbicide screening test (NCHST)	Dissanayake I
Evaluation weed density and weed controlling efficiency of machinery transplanted rice with seeding rates in nurseries	Dissanayake I

### Soil Science

Nutrient uptake of different rice varieties for half bog soil	Rupasinghe MGN
Identification of impact of weedicides on soil micro organisms	Sandamali TGI
Effect of Zn application methods on grain yield and grain Zn content in LCWZ	Rupasinghe MGN
Calibration studies on soil Phosphorus & soil potassium	Rupasinghe MGN
Evaluation of soil & plant test kit fertilizer recommendations	Rupasinghe MGN
Evaluation of different fertilizer products for rice -Field Experiment	Rupasinghe MGN
Response of rice plant to applied sulfur & Magnesium	Rupasinghe MGN
Fertilizer recommendation for ultra shortage rice varieties	Rupasinghe MGN
To identify low cost growth media for mass multiplication of bacteria	Sandamali TGI
Development of foliar fertilizer from straw extract for rice cultivation	Rupasinghe MGN
Evaluation of different fertilizer products for rice (Pot experiment)	Rupasinghe MGN
Identification of micro nutrients status of paddy growing landings in kaluthra district.(Fe & Zn)	Rupasinghe MGN
The effect of long term application of Organic and inorganic fertilizer rice grown in LCWZ.	Rupasinghe MGN

### Regional Agricultural Research & Development Centre – Kilinochchi

Title	Principal Investigator
<b>Seed Production</b>	
TVM6 True Seeds Production Honey Bee Aided	Arasakesary SJ
<b>Plant Protection</b>	
Management of MI Green chili thrips through the application of 3G Solution	Rajeshkanna S
Management of Cabbage Caterpillar complex through the application of 3G Solution	Rajeshkanna S
Management of Chilli leaf curl complex through the Application of Calcium Phosphate	Rajeshkanna S

### Regional Agricultural Research & Development Centre – Makandura

Title	Principal Investigator
<b>Breeding</b>	
Backcross breeding programme to increase genetic diversity of luffa	Kumari SASM
Development of shortage pumpkin variety	Balasooriya BANK
Development of new purple sweet potato varieties	Premawardhane KAJC
Anthurium improvement programme	Weerasinghe WMSK
Development of new sweet potato varieties	Premawardhane KAJC

Variety screening of okra lines for viruses	Weerawarna SBA
Exotic variety evaluation programme of luffa	Kumari SASM
Development of YVMV resistant/tolerant okra lines	Kumari SASM
Development of high yielding luffa varieties to cultivate under dry and intermediate zone	Kumari SASM
Cultivation of exotic mushroom varieties suitable for low temperature environment	Rajapaksha P
Conduct VAT for ganadoma mushroom and conduct adaptive research in farmer fields and introduce medicinal products to the Sri Lanka market	Rajapaksha P
Cassava varietal evaluation of climatic change	Weerawarna SBA
Development of flat pumkin variety	Balasooriya BANK
Usage of corn (maize) cob as an alternative substrate for oyster mushroom (peurotus ostreatus) growing media	RAJAPAKSHA P
NCVT trials (Chilli hybrids,Mea,Okra)	Weerawarna SBA
Exotic variety evaluation programme- okra	Kumari SASM
Evaluation of exotic pumkin hybrids	Balasooriya BANK
Varietal adaptability trial for pumpkin	Balasooriya BANK
National coordinated varietal trial okra	Kumari SASM
Study on new cultivation method for paddy straw mushroom	Rajapaksha P
Identification of luffa lines for heat & drought stress resistance	Kumari SASM
Okra breeding programme	Kumari SASM

### **Plant Protection**

Use of pheromones for sweet potato weevil	Premawardhane KAJC
Study of the effectiveness of induce resistance (ISR/SAR) for controlling viral diseases of pumkin	Weerasinghe WMSK
Development of alternative control measures against powdery mildew of pumpkin	Weerasinghe WMSK
Management of root knot nematode(RKN) on guava	Weerawarna SBA
Collection of germplasm of naturally growing mushroom in Sri Lanka and development of artificial cultivation methods for selected 3 mushroom varieties	Rajapaksha P
Fungicide screening against cercospora leaf spot of okra	Weerasinghe WMSK
Development of screening procedure to estimate the varietal resistance of elite breeding lines and exotic varieties against powdery mildew of pumpkin	Weerasinghe WMSK
Control of blister beetle in okra	Premawardhane KAJC
Study the effectiveness of induce resistance (ISR/SAR) on controlling YVMV disease	Weerasinghe WMSK
Control of Aulacophora spp in pumpkin	Premawardhane KAJC
Development of alternative control measures for controlling cercospora leaf spot disease of okra	Weerasinghe WMSK
Development of screening procedure to estimate the varietal resistance of elite breeding lines and exotic varieties against cercospora leaf spot of okra	Weerasinghe WMSK

## Soil Science

The study of ground water quality and soil fertility level with cultivation practices adapted by farmers in kalpitiya	Kumuduni HK
The study of different level of N & K on growth and yield of hydrid brinjal	Kumuduni HK

## Farm Machinery Research Centre

Title	Principal Investigator
<b>Agricultural Engineering</b>	
Design and Development of 4W Tractor Attached Vacuum Seeder	Balasoorya B.M.C.P.
Design and Development of Pulse Processing Machine	Wijethunga G.A.M.A.
Design and Development of Cowpea thresher	Herath H.M.A.P.
Design and Development of Groundnut Thresher for Removing Pods	Hemachandra M.H.J.J.

## Field Crop Research and Development Institute –Mahailuppallama

Title	Principal Investigator
<b>Breeding</b>	
Hybridization and selection of Soybean	Chithrapala N H M S
Preliminary yield trial of grain soybean	Chithrapala N H M S
National Coordinated Varietal Test of soybean	Chithrapala N H M S
Improvement of qualitative and quantitative traits in Soybean through gamma irradiation	Chithrapala N H M S
Breeder seed production of Pb 01	Chithrapala N H M S
Seed multiplication of germplasm	Chithrapala N H M S
Hybridization and selection of Cowpea	Chithrapala N H M S
Preliminary yield trial of Cowpea	Chithrapala N H M S
Breeder seed production of Bombay	Chithrapala N H M S
Breeder seed production of Dhawala	Chithrapala N H M S
Breeder seed production of Waruni	Chithrapala N H M S
Breeder seed production of MICP 01	Chithrapala N H M S
Evaluation of developed finger millet lines for yield and other agronomic characteristics	Wijewardana D C M S I
Evaluation of new maize crosses developed using locally developed inbred lines	Wijewardana D C M S I
Evaluation of biomass of developed sweet sorghum lines	Wijewardana D C M S I
Development of maize inbred lines from induced mutated promising inbred lines	Wijewardana D C M S I
Seed production of millet and foxtail millet	Wijewardana D C M S I
Population improvement of popcorn	Wijewardana D C M S I
Development of maize inbred lines selected from exotic populations	Wijewardana D C M S I
Nuclear mother bulb production of recommended big onion varieties	Pathirana MGSP

Breeder seed production of recommended big onion variety MIBO 1	Pathirana MGSP
Generation advancement	Pathirana MGSP
Diversity evaluation of local big onion accessions	Pathirana MGSP
Evaluation of exotic big onion genotypes	Pathirana MGSP
NCVT – Big Onion	Pathirana MGSP
Production of cluster onion mother bulbs – MICLO 09-01	Pathirana MGSP
Germplasm Evaluation of cluster onion accessions	Pathirana MGSP
Maintenance of onion germplasm, lines, accessions	Pathirana MGSP
Evaluation of male sterility of MICLO-BUMS-2015	Pathirana MGSP
NCVT - cluster onion	Pathirana MGSP
Evaluation of new maize single crosses developed from CIMMYT inbred lines and locally developed inbred lines	Kumari WMR
Development of new maize single crosses hybrids from parent lines combination	Kumari WMR
Evaluation of five drought tolerant maize hybrids received from CIMMYT, Indian VAT at different locations	Kumari WMR
Evaluation promising locally developed maize hybrids and promising hybrids received from in NCVT at 3 locations	Kumari WMR
Evaluation of elite maize hybrids from CIMMYT, India	Kumari WMR
Development of maize inbred lines	Kumari WMR
Maintenance of inbred lines	Kumari WMR
Evaluation of promising maize hybrids in VAT in Vavuniya, Hambantota, Jaffna	Kumari WMR
Evaluation of Exotic maize hybrids	Kumari WMR
Breeder seed production OPV ,Ruwan and Bhadra	Kumari WMR
Breeder seed production of Parental lines (CML 161, CML 194, CML51 and CLO2450)	Kumari WMR
F1 seed production of MI Maize Hybrid 01 and MI Maize hybrid 02	Kumari WMR
Screening of local finger millet accessions for blast disease - Ph.D research	Kumari WMR
Development of chili hybrids using recombinant inbred lines	Herath HMSN
Development of inbred lines through generation advancement of exotic chili hybrids and inter-specific chili hybrids	Herath HMSN
Transferring of Genetic Male Sterile character (GMS) to the promising chili breeding lines and selected varieties	Herath HMSN
Evaluation of exotic chili hybrids	Herath HMSN
F1 seed production of locally developed chili hybrids MICH HY 1, MICH HY 2 and parent lines	Herath HMSN
Hybridization of mungbean	Kumararathna M J M P
Generation advancement & selection of mungbean	Kumararathna M J M P
Preliminary Yield Trial of mungbean	Kumararathna M J M P
National Coordinated Varietal Trial of ground nut	Deshabandu KHST
Seed multiplication of promising confectionary type groundnut	Deshabandu KHST

National Coordinated Varietal Trial- Evaluation of high yielding Sesame lines	Deshabandu KHST
Anther culture techniques for haploid / double haploid plant production of Chilli	Dammika WAR
Screening Mungbean Lines/varieties for Bruchid Resistance Gene (Br1 ) and MAS for Mungbean Breeding against Bruchid resistance	Dammika WAR
Diversity analysis of selected Big onion lines/accessions	Dammika WAR
Preliminary Yield trial of promising QPM incorporated maize lines	Dammika WAR
Development of pathogen derived resistance for chili leaf curl virus resistance	Dammika WAR
Development of quality protein incorporated maize line/variety	Dammika WAR
National Coordinated Varietal Trial of mungbean	Kumararathna M J M P
Variety Adaptability Trial of mungbean	Kumararathna M J M P
Development of new mungbean variety through gamma irradiation	Kumararathna M J M P
Hybridization of blackgram	Kumararathna M J M P
Breeder seed production of mungbean varieties Ari, MI6, MI5	Kumararathna M J M P
Generation advancement & selection of blackgram	Kumararathna M J M P
Breeder seed production of blackgram varieties Anuradha , MI1	Kumararathna M J M P
National Coordinated Varietal Trial of Okra	Kumararathna M J M P
National Coordinated Varietal Trial of Brinjal	Kumararathna M J M P
National Coordinated Varietal Trial of Tomato	Kumararathna M J M P
Breeder seed production of vegetable varieties Tomato-KC 1	Kumararathna M J M P
Breeder seed production of vegetable varieties snake gourd –MI short	Kumararathna M J M P
Preliminary Yield Trial of black gram	Kumararathna M J M P
National Coordinated Varietal trial - black gram	Kumararathna M J M P
Creation of genetic variability through conventional breeding techniques	Hettiarachchi BI
Evaluation of collected germplasm of big onion and cluster onion	Hettiarachchi BI
Study the effectiveness of low temperature on phase changes of life cycle in onion variety Dambulla selection	Hettiarachchi BI
Impact of Calcium application on performance of onion plant	Hettiarachchi BI

### **Crop Production**

Alternative nursery management techniques for chili	H.M.P.T.K.Hettigedara
Screening of other field crops- Chilli, Mungbean, Maize , Onion to water stress tolerance	Deshabandu KHST
Validation of the leaf colour chart for chili variety MI-green	Hettigedara HMPTK
Organic formulations to improve the growth and yield of mung bean	Hettigedara HMPTK
Organic formulations to improve the growth and yield of chili	Hettigedara HMPTK
Foliar spray of urea and NAA to improve the growth and yield of mung bean	Hettigedara HMPTK
Effects of anti-transpirants on growth & yield of mung bean	Malaviarachchi MAPWK
Integrated effect of plant growth regulators and nutrients on growth & yield of chili	Malaviarachchi MAPWK

An investigation to improve the hybrid seed production technology on maize	Malaviarachchi MAPWK
Optimizing crop management practices for sweet sorghum as a bio-energy crop in marginal lands	Malaviarachchi MAPWK
Effect of foliar nutrition on growth and yield of soybean ( <i>Glycine max</i> )	SENANAYAKE R L
Effect of foliar nutrition on growth and yield of cowpea ( <i>Vigna unguiculata</i> )	SENANAYAKE R L
Study the enhancement of drought stress tolerance in soybean crop by rhizobium inoculum	Senanayake R L
Dioscorea germplasm evaluation	Senanayake R L
Monitoring canopy temperature changes for temperature stress and moisture stress environment	Silva LC
NCRVT trials	Silva LC
Evalauation of soybean lines for pest damages	Mandanayake MARA
Identification of diversity and distribution of predaceous lady bird beetles ( <i>Coleoptera: Coccinellidae</i> ) in Legumes	Mandanayake MARA

### **Crop Production**

Evaluation of large seeded , medium duration groundnut lines	Deshabandu KHST
Screening of other field crops- Chilli, Mungbean, Onion, Maize to high temperature tolerance	Deshabandu KHST

### **Plant Protection**

Germplasm evaluation of black gram for mosaic virus, Anthracnose and powdery mildew disease	Fernando WMK
Screening of cowpea promising lines for major diseases	Fernando WMK
Efficacy testing of fungicides for Anthracnose and purple blotch of onion	Fernando WMK
Efficacy testing of fungicides for Anthracnose of chili	Fernando WMK
Bio-efficacy of fungicides for re-registration	Fernando WMK
Identification of onion black mold complex and its biological control using <i>Trichoderma</i> spp.	Fernando WMK
Development of a weather based disease forecasting model for onion Anthracnose	Fernando WMK
Screening of finger millet accessions for finger millet blast disease	Fernando WMK
Cultural management practices to control the weeds in maize fields	Hettigedara HMPTK
Herbicide efficacy trial for maize	Hettigedara HMPTK
Screening of promising NCVT local chili hybrids for chili leaf curl virus (CLCV)	Fernando WMK
Screening of chili OPV for CLCV	Fernando WMK
Evaluation of onion lines for Anthracnose	Fernando WMK
Screening of mutated chili lines( <i>Galkiriyagama</i> selection) for CLCV	Fernando WMK
Evaluation of mung bean lines for major pests	Mandanayake MARA
Evalauation of black gram lines for pest damages	Mandanayake MARA
Evalauation of cowpea lines for pest damages	Mandanayake MARA
Germplasm evaluation of mung bean for YMV, Anthracnose and powdery mildew disease	Deshabandu KHST

Identification of suitable flowering plants to enhance natural enemies in legumes	Mandanayake MARA
Study of Bionomics of pod borer complex in mung bean	Mandanayake MARA
testing of insecticides to control chili leaf curl complex	Gunawardena KNC
Evaluation of different open pollinated chili varieties for major pests	Gunawardena KNC
Evaluation of silicon containing products as plant resistance inducers for thrips in chili	Gunawardena KNC
Screening of local chili hybrids for major pests	Gunawardena KNC
testing the effect of different shapes of yellow sticky traps in controlling thrips in chili	Gunawardena KNC
Studies on population dynamics of maize stem borer	Gunawardena KNC
Evaluation of red onion varieties for pest resistance	Gunawardena KNC

### **Soil Science and Water management**

Nutrient management package for sustainable production of green gram	Nijamudeen MS
Effect of different rate of Urea and micro nutrients with different application time on growth and yield of big onion	Nijamudeen MS
Testing commercial fertilizer products under the fertilizer testing program	Nijamudeen MS
Developing climate change resilient village-tank farming system model	Nijamudeen MS
Development of the best management packages for enhancement of crop productivity of chili and onion under drip irrigation systems - Field verification trials (2 trials)	Perera RACJ
Development of the best management packages for enhancement of crop productivity of chili and mung bean under sprinkler irrigation systems - Field verification trials (2 trials)	Perera RACJ
Spacious-temporal characterization of soil sampling in an irrigated cropping system in the dry zone of Sri Lanka using proximal soil sensing	Perera RACJ
Response of maize in relation to application of 'HERP' and 'ESSP'	Perera RACJ

### **Food Research Unit - Gannoruwa**

<b>Title</b>	<b>Principal Investigator</b>
<b>Food Science</b>	
Effect of different carbon sources on ripening, postharvest quality and shelf life of tomato	Fernando HRP
Effect of Maltodextrine on Physical Properties of Spray Dried Fruit Pulp Powder of Annona muricata and Annona reticulata	Fernando HRP
Effect of Osmotic Dehydration on Quality of Air Dried Green Chili Powder	Fernando HRP
Production of durian (Durio zibethinus) powder by spray drying techniques	Fernando HRP
Comparison of fresh and processed bee honey from Uva province of Sri Lanka	Senarathne SMACU
Natural Wax coating to extend the shelf life of Papaya	Senarathne SMACU
Low sugar Mango RTS can be successfully packed in PET bottles	Senarathne SMACU
Identification of a method for minimal processing of Waraka	Senarathne SMACU
Production of vegetable based fruit drinks	Senarathne SMACU

Development of processed food products for Mango variety- Tom JC, Karthakolomban and Villard using Vacuum dehydration technology.	Hettiarachchi DN
Development of processed food products for vegetables	Hettiarachchi DN
Development of processed food products for under-utilized fruits and vegetables using vacuum dehydration technology and other technologies.	Hettiarachchi DN
Development of processed food products for fruits and vegetables using vacuum dehydration technology and other technologies.	Hettiarachchi DN
Value addition on mushrooms and identification of suitable types of mushrooms	Rebeira S.P.
Sensory acceptability, physicochemical and nutritional qualities of Tofu produced using Cowpea and Soy	Rebeira S.P.
Evaluation of change of antioxidant properties during cooking in popular traditional rice cultivars and improved varieties.	Rebeira S.P.

### **Fruit Research and Development Institute –Horana**

<b>Title</b>	<b>Principal Investigator</b>
<b>Breeding</b>	
Germplasm collection, characterization and evaluation of jak fruit	Mangala AGKMN
Genetic improvement and varietal development of Mandarin through hybridization	Lesly WD
Selection of high yielding and good quality Mango varieties from existing Germplasm	Mangala AGKMN
Development of High yielding good quality hybrid Pineapple	Kalubowila I
Development of F1 hybrids of durian	Lesly WD
Development of new citrus (mandarin) varieties through mutation breeding	Lesly WD
Development of yellow passion fruit varieties through hybridization and selection	Kalubowila I
Hybrid seed production of Papaya	Kalubowila I
Development of high yielding good quality papaya varieties	Kalubowila I
Characterization of flowering behavior and floral biology of Beli, wax apple, Ceylon olive, soursop, sapodilla for improvement of productivity and quality	Mangala AGKMN
Increase availability of quality planting material (production of Horana Gold Passion fruit	Kalubowila I
Increase availability of quality seed and planting materials (Hybrid seed production of Horana papaya Hybrid-1)	Kalubowila I
<b>Crop Production</b>	
Effect of different crown size on quality of Murisi Pineapple	Baddegama ST
Development of Annona varieties with high yield & good quality	Warusawitharana AJ
Development of different spacing, yield and fruit quality of Anona	Warusawitharana AJ
Canopy management and pruning of Anona	Warusawitharana AJ
Initiatives for commercial bread fruit	Edirimanna ERSP
Regulation of fruit set and postharvest life and investigation of variability bio active compound	Bulathkandage M



Effect of different spacing of Guava on yield and quality	Warusawitharana AJ
Germplasm conservation of rambutan	Mangala AGKMN
germplasm conservation of Goraka & Uguressa	Mangala AGKMN
Effect of bending and pruning on yield of Guava	Warusawitharana AJ
Effect of time and rate of application of Ca on yellow sap disorder and translucent disorder	Renuka K.A.
Identification of nutrient management practices for improve quality and productivity of water melon	Renuka K.A.
<b>Food Science</b>	
Identification of harvesting indices of Anona muricata	Bulathkandage M
Increase shelf life of passion fruit using modified atmospheric storage	Bulathkandage M
Effect of different spacing on fruit quality of Pineapple	Baddegama ST
Identification of bio active compound of selected underutilize fruit crops	Baddegama ST
<b>Plant Protection</b>	
Management of Guava wilt through biological control agents	Kuruppu M
Studies on biological and management of root knot nematodes in Guava	Pushpakumari AS
management of white waxy scale in Mango on integrated approach	Pushpakumari AS
Identification of pest of bread fruit	Pushpakumari AS
In-vitro application of selected safe compound to control anthracnose disease & stem end rot disease of Anona & Avocado	Kuruppu M
In-vitro application of selected safe compound to control anthracnose disease in Mango	Kuruppu M
Studies of different essential oil & waxy application methods to minimize post-harvest disease of Mango	Kuruppu M
Studies of non-fungicidal methods to control sigatoka disease in high density plantation of Banana	Kuruppu M
Identification, Management of shot hole borer in fruit crops (Anona, Mango, Rambutan)	Pushpakumari AS
Development of control measures of commonly found post-harvest fruit rot disease of avocado and anona	Kuruppu M
Fruit fly management programme	Pushpakumari AS
studies of non-chemical methods to control crown rot disease of Banana	Kuruppu M
<b>Soil Science</b>	
Studying inheritance of self-compatibility and passion fruit mottle virus resistance in Passion fruit	Kalubowila I
identification of green technological soil fertility management package for Pineapple	Renuka K.A.
Nutrient status of the soil in research fields FRDI	Renuka K.A.
Identification of critical leaf N level for Papaya to mitigate climatic change impact	Renuka K.A.

## Horticultural crop Research and Development Institute - Gannoruwa

Title	Principal Investigator
<b>Plant Breeding</b>	
Evaluation of Cassava Germplasm	Sunil Shantha P.G.
Maintenance of fruit biodiversity garden at Girandurukotte and Mango germplasm Evaluation	Sunil Shantha P.G.
Up Country vegetable (Carrot and cabbage) crop Improvement programme	Abeythilakarathna P.D.
Potato Crop improvement programme	Abeythilakarathna P.D.
Development open pollinated snake gourd varieties (high yielding medium and long type with CGMMv resistant)	Nanayakkara N.L.A.T.S.
"Elabatu" crop improvement program	Niran H.M.L.
Okra crop improvement Program	Niran H.M.L.
Screening tomato accession for heat tolerance	Niran H.M.L.
Development of high yielding short age varieties tolerant for biotic and a biotic stresses due to climatic changes	Nanayakkara N.L.A.T.S.
Development of novel floriculture varieties through physical mutagenesis	Karunananda D.P.
Quality seed production of recommended bitter gourd, cucumber, pumpkin varieties and hybrid parental lines	Kumari HMPS
Development of OP and hybrid cucumber varieties	Kumari HMPS
Development of hybrid and OP bitter gourd varieties	Kumari HMPS
Crop Improvement - yard long bean	Malaty P.
Development of hybrid/OP varieties of Luffa	Malaty P.
Development of Hybrid/OP varieties of Okra	Malaty P.
Crop improvement of bean OP varietal development program	Malaty P.
Seed production of released varieties	Malaty P.
Varietal development of Brinjal	Welegama H.M.V.T.
Exotic varietal evaluation of brinjal	Welegama H.M.V.T.
Seed Production of Parental lines and released varieties of brinjal	Welegama H.M.V.T.
Varietal development of Tomato	Welegama H.M.V.T.
Exotic varietal evaluation for tomato	Welegama H.M.V.T.
Seed production of Parental lines and released varieties of tomato	Welegama H.M.V.T.
Development of high yielding high quality innala variety/lies for Sri Lanka	Shyamalee H.A.P.A.
Development of high yielding Basal Rot tolerant polon mae variety	Shyamalee H.A.P.A.
Development of F1 hybrid lenairi type brinjal variety/ies with found and pod shape	Shyamalee H.A.P.A.
Stabilization of BW II fruit characters through mutate breeding and hybridization	Shyamalee H.A.P.A.
Varietal evaluation of Bean	Anura W.A.
Development of High yielding consumer demanding short duration cassava varieties	Ruwanpathirana K.H.
Development of a short duration consumer demanding sweet potato varieties	Ruwanpathirana K.H.
Improvement of marketing quality of cassava variety "kirikawadi"	Ruwanpathirana K.H.

## **Crop Production**

Emergence and growth of tomato, brinjal and capsicum seedlings raised under different color polythene shades and their performances at the field.	Kahadawa arachchi K.A.D.S.D.
Plant priming and training for seed quality and seed yield improvement in capsicum	Kahadawa arachchi K.A.D.S.D.
Evaluation of existing tomato varieties for protected houses	Kahadawa arachchi K.A.D.S.D.
Effects of different pruning methods and support to change the plant architecture of selected egg plant	Kahadawa arachchi K.A.D.S.D.
Identification of best spacing for locally released bean varieties	Kahadawa arachchi K.A.D.S.D.
Improvement of native or wild plants as new horticultural products	Karunananda D.P.
Evaluation of live mulch for weed management and water conservation of vegetables	Karunananda D.P.
Evaluation of varieties and fertilizers for sweet potato bag culture	Karunananda D.P.
Study morphology anatomy, growth and rooting behavior of different brinjal lines under limited water availability	Karunananda D.P.
Testing the effect of applied different levels of root inducing hormone at the planting time of quantity and quality (physical) of the yield	Senavirathne Y.G
Improvement of technology for making available good quality planting material of cassava through-out the year	Senavirathne Y.G
evaluate new technique to reduce cracking on micro tubers	Abeythilakarathna P.D.
Development of a grass media (JUNCAO) for American oyster	Welgama W.A.R.D.
Development of a new mushroom variety (monkey head)	Welgama W.A.R.D.
Impact of Stem cutting harvesting interval on crop yield of sweet potato.	Weerasuriya M.B.
Development of a farmer friendly method for easy harvesting of katu ala	Ruwanpathirana K.H.

## **Plant Biotechnology**

Development of biotechnological tool to use in vegetable breeding (beans, bitter gourd)	Kumari HMPS
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## **Plant Protection**

Epidemiological Studies on powdery scab of potato	Ranasinghe C.
Testing of Disease forecasting model for potato late blight	Ranasinghe C.
Identification of different strains of potato late blight pathogen and their distribution in Sri Lanka	Ranasinghe C.
Identification of Causal agent and development of control measures for leeks short root disorder	Ranasinghe C.
Fungicide screening against cabbage ring rot	Ranasinghe C.
fungicide screening against purple blotch of leeks	Ranasinghe C.
Screening of commercial potato varieties against potato late blight	Ranasinghe C.
Testing of soil sample of government seed potato forms for bacterial wilt pathogen	Ranasinghe C.

Potential use of plant antiviral to manage virus disease in papaya, chili and bitter gourd	Ranasinghe C.
Potential use of antagonistic bacteria to manage panama disease in banana	Ranasinghe C.
Assessments of yield loss due to sucking pests (Aphids, Thrips and whiteflies) on potato	Hettiarachchi H.A.S.N.
Influence of climatic factors on population dynamics of sucking pests (Aphids, Thrips and whiteflies) on potato	Hettiarachchi H.A.S.N.
Bio-intensive integrated disease management (BIPM) programme for soil borne disease of horticultural crops in SL	Weerathne W.A.P.G.
Bio-Efficacy testing of fungicides against brown leaf spot disease of leafy vegetables	Weerathne W.A.P.G.
Exotic seed evaluation for bacterial wilt(Routing work)	Weerathne W.A.P.G.
Seed potato health testing for quarantine disease	Weerathne W.A.P.G.
Screening of exotic hybrid of vegetables (Cucurbits) for seed borne viruses	Weerathne W.A.P.G.
Screening of exotic hybrid of vegetables for major disease under field condition	Weerathne W.A.P.G.
Identification of casual pathogens of bacterial wilt of cucurbits	Sunil Shantha P.G.
Diversity of R.solanacearum species complex causing bacterial wilt in solanaceous crops in Sri Lanka	Weerathne W.A.P.G.
Development of Molecular techniques for diagnosis of fusarium spp, colletotrichum spp, and alternaria spp	Fernando M.S.W.
Bio-efficacy of new fungicide against powdery mildew of cucurbits	Fernando M.S.W.
improvement and field validation of integrated pest management(IPM) package of tomato virus diseases management	Fernando M.S.W.
Bio-Efficacy of new fungicides against downey mildew of cucurbits (variety - Luffa (NAGA)	Fernando M.S.W.
Bio-efficacy of new fungicides against collar rot of long yard beans	Fernando M.S.W.
Study of the effect of colour traps on pests and other arthropods in vegetable fields	Weligamage S.S.
Exploration of local natural enemies of Fall army worm and investigate their potential use for controlling the pest	Weligamage S.S.
Evaluation and development of IPM techniques to control virus vector in bean (Horse gram yellow mosaic virus)	Ranaweera P.H.
Identification of cucurbits infesting fruit flies and their management	Ranaweera P.H.
Screening of insecticide to control shoot and fruit borer in brinjal ( For registration purpose)	Ranaweera P.H.
Isolation and Mass culturing of effective and efficient antagonistic bacteria for the control of major root knot nematode on selected vegetable crops of Sri Lanka	Nishantha KMDWR
Develop, Test and implement monitoring procedures and practices at site, regional and national level for pests predators and natural enemies	Nishantha KMDWR
Development of efficient management system for meloidogy infesting tomato in SL through elucidation at the host nematode	Nishantha KMDWR
Exploration of weedy host plants of fall army worm in Sri Lanka	Ranaweera P.H.

Effect of different botanical for cercosporc leaf spot diseases in leafy vegetable cultivation LWZ	Karunathilaka H.K.A.
identification of plant parasitic nematodes with their severity in leaf vegetable and tuber crops (innala) in Mathara district and mapping nematodes distribution pattern	Lokuge K.S.
Evaluation of recommended sweet potato varieties and lines for weevil damage	Lokuge K.S.

### **Soil Science and Water Management**

Studding the minimum tillage effects on soil physical properties and crop yield	Wijewardhana K.G.U.
Evaluation of different nutrient management practices on soil quality parameters	Sunil Shantha P.G.
Effect of changing farmyard disposal on the physical properties of the soil	Wijewardhana K.G.U.
Effect of tillage practices on infiltration and soil strength of reddish brown latosolic soil	Weerarathne W.A.P.G.
Development of yield improving nitrogen fixing microbial inoculum to enhance the growth and yield of vegetables	Nawarathna K.K.K.
Development of botanical nitrification inhibitors to improve nitrogen fertilizer use efficiency in vegetables	Nawarathna K.K.K.
Augmentation of drought resilient in tomato using plant growth promoting rhizobacteria (PGPR) inoculum	Nawarathna K.K.K.
Assessment of nitrogen supplementing ability of selected nitrogen fixing inoculums for capsicum (Field experiment)	Nawarathna K.K.K.
Determination of bioavailability of cadmium in soil from TSP fertilizer	Silva N.R.N.
Testing of the efficacy of the special fertilizer imported to country	Silva N.R.N.
effect of split application of recurrent organic fertilizer sources on vegetable under organic farming	Silva N.R.N.
Effect of different rates of the partially burned rice husk with organic manure on vegetable production	Silva N.R.N.
Development of suitable nutrient management package for quality seed production in tomato	Silva N.R.N.
Determination of effect of application of Ca(NO <sub>3</sub> ) <sub>2</sub> on growth, yield and quality of tomato under water stress condition	Silva N.R.N.
Effect of continuous application of compact on vegetable yield	Silva N.R.N.
Soil calibration studies Mg , S and Zn on vegetables	Silva N.R.N.
Determination of effect of application of silicon on growth of tomato under water stress and non-water stress condition	Silva N.R.N.
Determination of N and K response on hybrid vegetables (capsicum and brinjal)	Silva N.R.N.
Determination of pesticide residues in vegetables collected from market by using rapid bio array method	Silva N.R.N.
Determination of bioavailability of lead and cadmium in soils in major vegetable grown areas in Sri Lanka	Silva N.R.N.
Development of yield test kit for determine the phosphorous in soil	Silva N.R.N.
Commercial Fertilizer testing program-pot experiments	Abeythilakarathna P.D.
Commercial Fertilizer testing programme, field experiments	Abeythilakarathna P.D.

Effect of different fertilizer management on soil fertility and soil quality	Abeythilakarathna P.D.
Studies on soil fertility management of potato and upcountry vegetables (calibration studies)	Abeythilakarathna P.D.
Development of a new high yielding American oyster strain	Welgama W.A.R.D.
Development of Sustainable soil management package for brinjal cultivation	Anura W.A.
Development of sustainable soil management package for leafy vegetable cultivation	Anura W.A.
Estimation of lime regiment for vegetable cultivation area of matara district	Anura W.A.
Identify the possibility to introduce Raja ala and Maha angili ala as a climate resilient crop through soil moisture conservation practices	Ruwanpathirana K.H.

### **National Plant Quarantine Service**

<b>Title</b>	<b>Principal Investigator</b>
<b>Plant Protection</b>	
Identification and characterization of causal agent of soft rot in <i>Aglaonema</i> spp by biochemical and molecular means and introduction of suitable control measures	Subhashini M.A.H.D
Investigating the Presence of <i>Candidatus Liberibacter asiaticus</i> in <i>Murraya Koenigii</i> and <i>Citrus</i> Spp. from Selected Areas in Sri Lanka and it is being continued with other areas	Subhashini M.A.H.D
Investigation of presence of <i>Pantoea stewartii</i> in imported Maize	Subhashini M.A.H.D
Detection of potato viruses (PVY,PVM PVS,PLRV, and PVX) in imported seed potatoes by serological methods	Subhashini M.A.H.D
Molecular Identification of <i>Clavibacter michiganensis</i> sub sp sepe donicus associated with imported seed Potatoes	Subhashini M.A.H.D
Development of standards for VAPORMATE® and Liquid Phosphate for quarantine and non-quarantine fumigation of agriculture commodities, and storage facilities for the control of pests	Hewage L.C.

### **Natural Resources Management Centre**

<b>Title</b>	<b>Principal Investigator</b>
<b>Agri. Eco. &amp; Policies</b>	
Agricultural Research Investment and human Resource Capacity of the National Agriculture Research System of Sri Lanka	De Silva S.H.S.A.
Farmers' perceptions towards climate change effect on fruit cultivation in some districts with different agro-ecologies in Sri Lanka: Moneragala district	Sennayake S.S.
<b>Geology and Geography</b>	
Identification of Suitable paddy lands within major irrigation schemes for seasonal crop diversification (North central Province)	De Silva S.H.S.A.
Zonation of soil erosion hazard areas to implement soil conservation practices at agricultural lands in Sri Lanka: a case study in Sabaragamuwa Province	Sennayake S.S.

Distribution of Soil Organic Carbon in Sri Lanka: A GIS Based Approach	Kadupitiya H.K.
Identification of drought and high temperature prone agriculture areas and characterize spatial and seasonal agro-ecological environment for adaptive measures	Kadupitiya H.K.
Web GIS Portal for Agriculture Information Dissemination	Sennayake S.S.
Updating erosivity map of Sri Lanka with response to climate change	Chitthranayana R.D.

### **Meteorology & Climatology**

Soil and water conservation for enhancing biodiversity in farming systems and adaptation to climate change	Abesekara A.B.
Development of weather based alert system as a decision making tool for crop management	Punyawardana B.V.R.
Issuing of long-term climate forecasts at regular intervals	Abesekara A.B.
Rainfall intensity duration frequency Studies in Kandy district	Chitthranayana R.D.
Inter seasonal variability of the rainfall pattern in the Dry zone of Sri Lanka with the influence of El Nino southern oscillation	Abesekara A.B.
Assessment of extreme climate change trends of Sri Lanka	Abesekara A.B.

### **Soil Science and Water Management**

Identification of sources and transport of agro-contaminants in hilly agricultural watersheds in the declared conservation area in Sri Lanka	Chandrapala A.G.
Testing soil conservation techniques in different field situation	Jayatissa P.G.K.
Establishment of soil conservation productivity enhancement site in conservation area	Hettiarachchi N.D.G.
Implementation of Soil Conservation Act (SC Act)	Munasinghe M.A.K.
Assessment of Atmospheric Nitrogen Pollution Sources, Impacts on Environmental Sustainability, Human Health and Remedial Measures in Three Unique Pollution Regions in Sri Lanka	Chandrapala A.G.
Increasing water and soil productivity under marginalized agriculture communities living in Mahaweli River basin in Madigiriya	Wickramathunga C.K.
Development of climate resilient village tank system	Punyawardana B.V.R.
Comparative assessment of soil erosion, soil moisture and crop performance in contour soil bund system introduced as an adaptation measure to climate change impacts in Anuradhapura district with other land uses	Chandrapala A.G.
Monitoring water quality of major streams in central highlands in Sri Lanka to identify critical watersheds for conservation	Kandaragama K.M.A
Development of Isohyetal maps for rainfall seasonal onsets and lengths as an adaptation to climate change in Sri Lanka	Wickramathunga C.K.

## Plant Genetic Resources Centre

<b>Title</b>	<b>Principal Investigator</b>
<b>Plant Biotechnology</b>	
Exploration & collection of Plant Genetic Resources	Liyanage ASU
Conservation of Plant Genetic Resources	Wanigadewa S.M.S.W
Morphological Characterization of germplasm	Wasala W.M.D
Multiplication of newly received germplasm and accessions with few seeds	DUMMY
Selection and evaluation of germplasm	Wasala W.M.C.B.
Molecular Characterization of traditional rice cultivars	Samarasinghe W.L.G
Molecular characterization of Dioscorea	Edirisinghe E.S.C
Study the diversity of Capsicum spp. (Nai Miris)	Samarasinghe W.L.G
Dioscorea micro tuberization as a tool for long term conservation and planting material production	Edirisinghe E.S.C
In-vitro conservation and maintenance of Plant Genetic Resources	Edirisinghe E.S.C
Protocol development for Cryo preservation	Edirisinghe E.S.C
<b>Crop Management</b>	
Viability testing and study of storage behavior of conserved germplasm	Wanigadewa S.M.S.W
Rejuvenation of conserved accessions	Wasala W M D.
Introduction, multiplication and make available of traditional genetic resources to 3 agro eco systems for the adaptation to climate change	Wasala W.M.D
<b>Information Management</b>	
Information management of PGR	Wasala W.M.D

## Plant Virus Indexing Centre

<b>Title</b>	<b>Principal Investigator</b>
<b>Plant Biotechnology</b>	
Micro propagation of department of Agriculture recommended Banana variety.(Agra)	Nagahawatta S.M.
Introduction of effective and low cost lighting system for culture rooms.	Nagahawatta S.M.
Development of technologies for the production of Virus free planting materials through propagation techniques for selected	Basnayaka B.M.V.S.
Production of Planting material using nodal culture from selected pomegranate plants with good characters for promising lines	Samanmalee L.G.I
Development of promising pomegranate lines through in-vitro mutation induction	Samanmalee L.G.I
Production of new pineapple variety y using cross pollination and tissue culture.	Samanmalee L.G.I
Production of Apple planting material using seed culture from imported fruits.	Samanmalee L.G.I
Production of tissue cultured hybrid papaya planting material using local hybrid seeds.	Samanmalee L.G.I
Identification of low cost solidification material for tissue culture media.	Nagahawatta S.M.



## **Plant Protection**

Induced systemic resistance mottle virus in chili using <i>Pseudomonas</i> florescence	Ranasinghe C.
Control of papaya rings pot virus (PRSV) in papaya through induced systemic resistance using plant growth promoting Rhizobacteria.	Ranasinghe C.
Potential use of antagonistic bacteria for successful management of panama disease in Banana caused by <i>Fusarium xysporium cubence</i> .	Ranasinghe C.
Identification of virus diseases in Cassava by molecular methods.	Thennakoon T.M.N.D
A molecular diagnostic for tropical race of banana fusarium wilt pathogen in kolikuttu banana.	Thennakoon T.M.N.D
Identification of phyto-plasma in seeds Bitter gourd, Snake gourd, ridge gourd	Thennakoon T.M.N.D
Identification of virus diseases in passion fruit by molecular methods.	Thennakoon T.M.N.D
Potential use of Antiviral principles (AVP) to manage viral diseases in papaya, chili and bitter gourd.	Ranasinghe C.
Identification and management of virus and virus like diseases in curcubits, legumes and chili in southern dry zone region in Sri Lanka.	Ranasinghe C.
Management of pine apple wilt virus (PWV) in pine apple with different fertilizers.	Ranasinghe C.

## **Rice Research and Development Institute**

<b>Title</b>	<b>Principal Investigator</b>
<b>Plant Breeding</b>	
Development of new improved quality rice variety for export and local market	Wijesena KAK
Evaluation of new rice elite lines in preliminary yield trail	Abhayagunasekara AVC
Evaluation of new rice elite lines in major yield trail	Abhayagunasekara AVC
Multiplication and maintaining the genetic purity of promising line	Abhayagunasekara AVC
Development of early drooping rice varieties for integrated weed management	Abhayagunasekara AVC
Screening of genetically different accessions of <i>Oryza rhizomatic</i> for drought tolerant	Abhayagunasekara AVC
Development of BLB resistant lines of popular rice varieties using MABC	Kakulandara DS
Incorporation of AG1 gene into Bg 366 through MAS	Kakulandara DS
Incorporation of Sub1 gene into popular varieties (Bg 455, Bg 379-2, Bg 360, Bg 358)	Kakulandara DS
Development of Drought tolerant introgression lines of popular two varieties	Kakulandara DS
Development of drought tolerant / escape lines	Chandrasena G.D.S.N
Development of 2 1/2 months rice varieties	Wijesena KAK
Evaluation of the yield potential of newly bred promising lines against the recommended rice varieties	Wijesena KAK

Multiplication of NCRVT, VAT, LS VAT entries	Wijesena KAK
Breeder seed production	Wijesena KAK
Development of BPH resistant new rice lines as ecofriendly approach for BPH management	Wijesena KAK
Germplasm multiplication and conservation	Wijesena KAK
Purification and mortification of selected traditional rice cultivars	Wijesena KAK
Development of quality rice varieties through mutation induction	Wijesena KAK
Integration of higher temperature tolerance to mega rice varieties of Sri Lanka to develop new segregation population	Karunaratne KGPB KGPB
Seed production of Breeder seeds of recommended rice varieties	Senanayake RMNH
Development of new rice line for 4 months	Senanayake RMNH
Evaluation of yield potential of newly bred promising lines against the recommended varieties under preliminary field trail	Senanayake RMNH
purity maintenance and multiplication of elite lines	Senanayake RMNH
Seed multiplication of advanced lines and elite lines	Senanayake RMNH
Development of high yielding 3 months age rice varieties for favorable environments	Paththinige SS
Development of low moisture stress tolerant rice varieties	Paththinige SS
Breeder seed production of recommended 3 months age varieties	Paththinige SS
Multiplication and maintaining the genetic purity of remanded 3 months age rice varieties and promising line	Paththinige SS
Evaluation of promising 3 months age rice lines for yield trails (PYT & MYT)	Paththinige SS
Adaptability testing of new cultural practices for rice cultivation in Polonnarauwa Districts	Keerthisena RSK
Adaptability testing of promising rice lines (VAT)	Keerthisena RSK
Testing of promising rice lines in low county intermediate zone - (NCRVT )	Illangakon TWMIWTK
Development of rice varieties for abiotic stress submergence salinity drought escape tolerance and ion toxicity tolerance	Udawela UAKS
Development of locally adaptable CMS rice lines	Priyantha WS
Development of hybrids through heterosis breeding	Priyantha WS
Development of restorer lines through novel biotechnological method	Priyantha WS
<b>Crop Production</b>	
Testing of promising rice lines in low county intermediate zone - (NCRVT )	Illangakon TWMIWTK
Multiplication of abiotic stress tolerant lines	Illangakon TWMIWTK
Adaptation testing of promising drought tolerance lines	Illangakon TWMIWTK
Nuclear seed production of promising hybrid	Priyantha WS
Small scale seed production	Priyantha WS
<b>Plant Biotechnology</b>	
Evaluation of yield potential of newly bred promising lines against the recommended varieties under preliminary field trail	Udawela UAKS

## Plant Protection

Development of BPH and BLB resistant rice lines	Chandrasena G.D.S.N
Evaluation of rice lines received from INGER /IRRI for RGM resistance	Chandrasena G.D.S.N
Field evaluation of breeding lines for rice gall midge	Chandrasena G.D.S.N
Sturdy of population dynamics & abundance of rice thrips	Chandrasena G.D.S.N
Sturdy of population dynamics & abundance of paddy bug	Chandrasena G.D.S.N
Effect of potassium fertilizer on bacterial leaf blight disease	Paththinige SS
Investigation of phototype diversity of the bacterial leaf blight pathogen <i>Xanthomonas oryzae</i> in Sri Lanka	Gunapala KRD
Screening of rice breeding lines for the bacterial blight resistance	Gunapala KRD
Screening of rice breeding lines for blast resistance	Gunapala KRD
Evaluation of new fungicide for blast disease	Gunapala KRD
Evaluation of new fungicide for sheath blight	Gunapala KRD
Screening of new fungicide for grain discoloration	Gunapala KRD
National coordinated herbicide screening test	Bandara RMUS
Reevaluation of effectiveness of recommended herbicides for rice cultivation	Bandara RMUS
Evaluation of weed suppressive ability of new promising lines	Bandara RMUS
Farmers field validation of improved IWMP by combining weed competitive cultivars	Bandara RMUS
Farmers field validation of improved IWRMP by combining weed competitive cultivars	Bandara RMUS
Study of herbicide resistant weeds in rice field	Bandara RMUS
weed control through biological mulching of <i>salvinia molesta</i>	Bandara RMUS
weed management through soil seed bank depletion technique by alternate poly mulching	Bandara RMUS
Greenhouse evaluation of breeding lines for BPH resistance	Sarathchandra SR
Identification of major rice-field-rat species and their abundance	Sarathchandra SR
Determination of the damage levels, caused by major rice field rats	Sarathchandra SR
Assessment of usage of pesticides for paddy cultivation in Sri Lanka	Sarathchandra SR
Evaluation of pest incidence of different establishment method in paddy cultivation	Sarathchandra SR
Screening of promising rice breeding line for rice thrips	Sarathchandra SR
Field screening of insecticides against major rice pest.	Sarathchandra SR

## Soil Science and Water Management

Screening for yield performance of 44 new improved rice varieties and asses the heavy metal absorption under organic condition	Rathnayake WMUK
Effect of temporal variation of climatic condition on Irrigated rice cultivation	Rathnayake WMUK
Recommendation of inorganic and organic fertilizer based on soil analysis	Pathirana SPGS
Effect of temporal variation of climatic condition on rain fed rice cultivation	Rathnayake WMUK
Effect of the application of AWD during flowering rice	Rathnayake WMUK

Effect of soil moisture at different tension levels during vegetation period in rice cultivation	Rathnayake WMUK
Preparation of soil fertility maps for the Kurunegala, Anuradhapura and Polonnaruwa districts	Rathnayake WMUK
Evaluation of vermi compost on growth and yield of paddy cultivation under organic condition	Rathnayake WMUK
Evaluation of new fertilizer materials issued by fertilizer testing committee	Rathnayake WMUK
Evaluation of liquid fertilizers on paddy cultivation	Rathnayake WMUK
Screening for yield performance of 10 traditional rice varieties and asses the heavy metal absorption under organic condition	Rathnayake WMUK

### **Registrar of Pesticide**

<b>Title</b>	<b>Principal Investigator</b>
<b>Crop Management</b> To strengthen the eco- certification programme to facilitate access to export markets (Agricultural produce of export quality, compliance specially with the EU markets)	Lakshani P.W.Y

### **Seed Certification Service**

<b>Title</b>	<b>Principal Investigator</b>
<b>Crop Management</b> Seed Act	Priyantha MGD
Construction of Epidemiology information interchanges system for Migratory Diseases and Insect pests in Asia Region	Priyantha MGD
Seed and Planting Material Production Programme	Priyantha MGD
Development of suitable seed film coating techniques to increase the storage life of vegetable seeds	Priyantha MGD

### **Socio Economics and Planning Centre**

<b>Title</b>	<b>Principal Investigator</b>
<b>Agri. Eco. &amp; Policies</b> Analysis of the adoption of site-specific fertilizer management (SSF) practices in paddy	Walisinghe B.-R.
Price analysis of selected food crops in Sri Lanka	Walisinghe B.-R.
Technical efficiency of maize production	Galabada J.-K.
Assessment of women participation in agriculture	Galabada J.-K
Post evolution on the paddy land development programe to facilitate mechanization in Uva province	Galabada J.-K
Rice variety distribution 2017	Sudeer N,-L
Crop forecast of food crop 2018 yala & 2018/19 maha	Sudeer N,-L
Trade policy review in food crops	Sudeer N,-L

Glyphosate band to paddy farming in Sri Lanka	Sudeer N,-L
Cost of production of agricultural crops 2016-17m & 2017y	Mathagaweera S
Cost of production of agricultural crops 2017-18m & 2018y	Mathagaweera S
Cost benefit analysis of model Hi tech potato seed production facility Sithaeliya	Wijesinghe K.-G.-C.-D.-B
Ex ante evolution of mechanization of SPMDC farms seed coating technology	Wijesinghe k.-G.-C.-D
Assessment of socio economic status of Rambakenoya settlement	Sooriaarchchi A.-T
Review of existing crop mix and recommendation suitable crop combination for Anuradhapura district	Sooriaarchchi A.-T
Evaluation of women engagement in Helabojunhala production on improving livelihood outcome	Liyanage N.-P
Adoption of recommended agronomic practices and farmers preference in groundnut in major areas of Sri Lanka	Liyanage N.-P
Present status and farmer`s preference in spine gourd cultivation in southern zone of Sri Lanka	Liyanage N.-P
Assessing potentials and limitations for fruit exports in Sri Lanka	Premarathna PSR
Consumer willingness to pay for artificially ripen fruits in the market	Premarathna P.-S.-R.
Fruit village programme (2016) evaluation under NFPP	Premarathna P.-S.-R.

## Department of Forest Conservation

### Title

### Forestry

Title	Principal Investigator
Experiment of optimum pot size for forest seedlings	R.M.D.alawathugoda
Study on suitable moisture conservation methods in teak plantations	A.L.M.Zuhry
Tree improvement research	R.M.D.Alawathugoda
Climate change mitigation and adaptation studies	R.M.D.Alawathugoda
Silvicultural and forest plantation management studies	W.D.P.Gomas
Non timber forest products and wood properties of forest trees in Sri Lanka	W.D.P.Gomas
Study on the tree domestication and conservation methods in Sri Lanka	S.H.Bandumala
Study of effective weed control methods through appropriate silviculture improvement in teak establishment	R.M.D.Alawathugoda
Study of mix tree species models for degraded forest restoration.	S.H.Bandumala
Silvicultural improvement of selected local trees prices for timber production.	W.D.P.Gomas
Vegetative propagation of teak from coppice shoots	A.L.M.Zuhry
Vegetative propagation of Hulan hik	A.L.M.Zuhry
Grafting of kumbuk	A.L.M.Zuhry
Micro propagation of Teak, Walla patta and Sandalwood	A.L.M.Zuhry
Grafting of teak with plus trees from Anapallama progeny trials	A.L.M.Zuhry

## Hector Kobbekaduwa Agrarian Research and Training Institute

Title	Principal Investigator
<b>Agri. Eco. &amp; Policies</b>	
Milk Value Chain Analysis of Milk Industry in Sri Lanka	Sagarika Hitihamu
Marketing intelligence programme	Priyadarshana W.H.D.
Climate Change Vulnerability of selected crop Production System in the Dry Zone of Sri Lanka	Samarasinghe G.G.de.L.W
Status and Empowerment Needs of SITAMU Women's Farmer Organizations	Rifana Buhary
Outreach and Effectiveness of Micro – Financing for Poverty Reduction in Sri Lanka; A case of Uva Province	D.T.P.S. Darmawardena
Causality, Nature and Magnitude of Human – Wildlife Conflict (HWC) in Uva and Eastern Wildlife Regions in Sri Lanka	D.M.A.C.Dissanayake
A study on Alternatives for Polythene Shopping bags and lunch sheets in Sri Lanka	S.P. Fernando
Potential for Promoting Rainwater as Source of Safe water Consumption in North Central Province	Norika Ayomi
Baseline Study for Strengthening Value Chain for Banana, Mango, and Pineapple Crops in Selected Regions in Sri Lanka	W.H.P.Priyadarshana
Public – Private Partnership Prospects for quality seed potato Production in Sri Lanka	I.V.Kuruppu
Review of research Investments of Ministry of Agriculture	R.D.Wijesinghe
Possibilities to Minimize Pesticide Usage in Sri Lankan Paddy Cultivation ; An emphasis on Risk Management	A.K.A.Dissanayake
Vegetable Cultivation Under Projected Agriculture as Adaptive Response to climate Change in Dry Zone	Nadeesha Dias
Addressing Climate Change Impacts on Marginalized Agricultural Communities Living in Mahaweli River Basin of Sri Lanka	W.H.A.Shantha
Assess the Performance of Weather Index Insurance Schemes in Sri Lanka	Roshinie Rambukwella
Evaluation study of the present performances of the Hela Bojun hal under the Department of Agriculture	Susila Lurdu
Challenges and Prospects of the Implementation of GAP Programme to Cater Local and Export Market in Fruit and Vegetable Sector in Sri Lanka	B.A.D.S. Bamunuarachchi
පළතුරු ගොවීන්ගේ ගැටළු පිළිබඳ සමීක්ෂණය	I.P.P.Wijesinghe
Regional Strategies on sustainable and climate resilient intensification of cropping Systems	W.H.A.Shantha
Pilot Project on Improving Irrigation System Management in Minipe Irrigation Scheme in Sri Lanka Special Reference to D3 Chanel	M.A.C.S.Bandara/M. Rambodagedara
Evaluation of the Potential of Promotion of agricultural exports (bulk & value added) through improved knowledge on intellectual property rights (IPRS)	Pasdunkorale Arachchige P.A.J.

## National Aquatic Resources Research and Development Agency

Title	Principal Investigator
<b>Fisheries and Aquatic Resources</b>	
Deployment of Fish Aggregating Devices (FADs), Floating Buoy and Fish Enhancing Devices( Submerge FEDs) to enhance the fish production in coastal waters	Punyadewa NBP
Habitat enhancement for Big fin reef squid's spawners ( <i>Sepioteuthis lessoniana</i> ) at their own breeding ground and Culturing of Squid at captive condition in North and Northwestern Provinces in Sri Lanka	Punyadewa NBP
Assessment and monitoring of marine finfish fishery resources in Sri Lanka	Haputhanthri SSK
Assessment and monitoring of export oriented marine no finfish fishery resources in Sri Lanka	Jayasinghe RPPK
Bio –physical and socio economic monitoring of the impacts due to coral bleaching and anthropogenic activities at selected sites	Nirbadha KGS
Conservation of marine mammals and sea turtles	Liyanage USPK
"Sri Lanka-Norway bilateral project “to improve the management of fish resources of Sri Lanka	Jayasinghe RPPK
Introduction feed for tilapia culture	Parakrama MGIS
Evaluation of formulated feeds developed for Asian sea bass through community based seabass arming in lagoon floating net cages	Weerasinghe R
Comprehensive study on impacts of intensive shrimp farming on Mundel Lake and its surroundings	Weerasekara KAWS
Assessment of marine litter in the Southern and north western Coast of Sri Lanka	Mendis BRC
Mapping of ocean circulation and assessment of ocean dynamics(Research vessel)	Jinadasa SUP
Ocean observation and forecast	Arulananthan K
Improvement of feed development technology for ornamental fish production-panapitiya Reginol research center	Perera GSC
Oceanographic data base development	Weerakoon WRWMAP
Assessment of climate change and anthropogenic impacts on the ocean environment	Maheepala MAS
Effects of brewer's yeast ( <i>saccaromyces cervisiae</i> )and sargassum sp. On growth of Sea Cucumber ( <i>Holothuria scabra</i> ) juveniles	Kumara PADA
Use Of Chitosan nano partiles as an immuno stimulant in tiger shrimp( <i>Peneous monodon</i> 0feeds to enhance cell activity and disease resistance to resist viral diseases	Weerasinghe R
Development of marine fish breeding technology Culture of seahorse in lagoon cages & Alteration of life span of fire shrimps	Mallawarachchi MJC
Study on Production Cost of Marine Fisheries in Sri Lanka	Sandaruwan KPGL
Introduction of endemic pethia melanomaclata (Tic tac barb) to ornamental fish industry through proper technology development.	Shirantha RRRRA
Value chain analysis and development of giant fresh water prawns,Lobster,Crab and clam fisheries in Sri Lanka	De Silva DWLU
Application of Indigenous Knowledge for Fisheries Management	Maheepala MAS



Maintain of the fisheries Information Center(FIC)	Amaralal KHML
Marine museum upgrade and skeleton preparation	Nirbadha KGS
Creating Fishing Gear models and making videos on fishing gear operation in the real world	Punyadewa NBP
Biofloc Technology as an Integral approach to Enhance Production and Ecological Performance ornamental fish culture.	Epasinghe EDMS
Development of breeding techniques for selected fresh water ornamental fish using existing facilities at RRC Rekawa.	Jayanatha JS
Efficiency of hormones of spawning characteristics of selected exotic fish species in amily Cyprinidea and maintnace of existing ornamental fish breeding facility	Adikari AMAN
Biotechnological application on aquatic plants and seaweed industries	Pahalawattaarachchi V
Study of the optimum conditions for grow out farming of sea Cucumber,(Holothuria scabra)	Kumara PADA
Establishment of gene bank for kappaphycus & euchema varieties suitable for culture in Sri Lanka and Culture of other potential seaweeds	Jayanatha JS
Improving spat collection methods for commercial scale oyster farming and experimental reef restoration for enhance the spat availability	Corea ASLE
Study on the potential for commercial use of naturally abundant oyster(Crassostreasp)in Negombo estuary	Mendis BRC
Investigation of possible virus's infections in shrimps and strain variation studies of WSSV related to dissemination routes.	Pahalawattaarachchi V
Assessment of current water pollution status and accumulation of heavy metals in selected edible fish species in bolgoda lake	Weerasekara KAWS
Exploration on frequently recorded white spot disease out breaks and survey on OIE listed viral infections in Sri Lanka	Rajapakshe ADW
Study on the evaluation of effectiveness of the stocking in selected perennial reservoirs in Rathnapura, kurunagala and Puttalam districts	Perera GSC
Establishment of community based mini hatchery to produce high quality seed production at Kattakaduwa Perennial reservoir in hambanthota district	Amaraweera KWRR
Assessment and knowledge dissemination on quality of fish ,water , ice and environmental samples in boats, Central Fish market and retail places	Ganegama Arachchi GJ
Investigation of incidence of histamine forming bacteria in chilled Yellow fin tuna (Thunus allbacaes)in export fishery industry	Ginigaddarage PH
Sanitary survey and assurance of safety of edible bivalve mollusks	Ariyawansa KWS
The production of Vitamin B-12 by marine organisms	Ariyaratna DS
Value added aquatic Products	Jayasinghe PS
Evaluation of Bio- active Potential of Selected Sri Lankan Marine Algae	Ganegama Arachchi GJ
Genotoxicity screening of selected Reservoirs and Drinking Water Wells Located in the North Central Province (NCP)of Sri Lanka using Plant and Fish Based Bioassays.	Narangoda SRNK
Behavioral impact of toxic material & pollutant and development of possible methodologies and treatment technologies to improve inland water resources including river basins(Benthara river)	Amaratunga AAD
Investigation of causes for emergency incidents such as oil spills, algal blooms and fish mortalities(emergency studies)	Weerasekara KAWS

## National Institute of Post-harvest Management

Title	Principal Investigator
<b>Food Science and Post-harvest Management</b>	
Initiation of cold chain studies to reduce postharvest losses in vegetables	Wijewardene R.M.N.A.
Identification and quantification of terephthalic acid (TPA) migration from plastic bottles to edible oil using HPLC technique	Weerasinghe T.M.A.N
Process improvement for freeze preservation of vegetables (Carrots, Beans, Beet-root)	Weerasinghe T.M.A.N
Design and development of an image processing based low cost fruit maturity identification instrument.	Harischandra Y.G.
Development of a food additive to preserve food by incorporating of oil extractions of nutmeg ( <i>Myristica Sp.</i> ) and cinnamon ( <i>Cinnamom Zeylanicum</i> )	Jayarathna G.E.D.A.M.
Identification and development of strategies for enhanced quality and post-harvest life of lotus	C.P. Aluwihare W.B.W.M.R.
Design & construction of a tunnel type forced-air cooler for cooling of fresh mango	Marasinghe C.K.
Development of value added legume based granular bar boosted with antioxidant activity	Thilakarathna H.R.M.G.C.
Prebiotic potential of resistant starches and dietary fibers of Sri Lankan traditional rice varieties and its application in food industry	Hettige K.D.T.
Evaluation of the effectiveness of freeze drying and vacuum packing technology for preservation of fresh fruits(Papaya, Pineapple,Guava)	Kumara B.A.M.S.
Feasibility analysis to use geospatial tools to improve the Mango supply chain via enhancing the traceability; A case study based on omaragolla mango collector group	Samarasinghe Y.M.P.
Use of Potential Biological Control Agents in Controlling Postharvest Diseases of Mango with Special Reference to Anthracnose	Menike G.D.N.
Influence of pretreatments on post-harvest quality and shelf life extension of Mango cv. Karuthakolomban	Weerasinghe S.S.K.

## Palmyrah Research Institute

### Title

### Principal Investigator

#### Food Science

Microbiological Quality of Ice-cream Marketed in Jaffna Region	Jeno Winston Mary
Extracting pigments from palmyrah fruit pulp for the production on natural colourant for food	Balasubramanium Anuluxy
Preservation of Palmyrah hastorium, young fruit kernel and boiled tuber with lengthen shelf life consisting their native characters	Tharmaratnam Glanista
Mapping of palmyrah trees in Jaffna region using GPS, GIS and High resolution satellite images	Shanmugalingam Vinujan
Reformulation of palmyrah ready to serve drink	Jeno Winston Mary

## Rubber Research Institute

Title	Principal Investigator
<b>Agri. Eco. &amp; Policies</b>	
Analysis on Income diversification of rubber farmers	Sankalpa J.K.S
Exploring New Markets to Enhance Foreign Exchange	Sankalpa J.K.S
Poverty reduction through Rubber-based farming systems	Sankalpa JKS
Analysis on impact of plantation sector policy changes	Sankalpa JKS
Expansion of rubber cultivation to nontraditional areas	Munasingha ES
Increase the land productivity through the technology adoption	Munasingha ES
Transfer of technologies developed by RRISL to smallholders	Dissanayake DMAP
Promotion of selected technology packages	Dissanayake DMAP
Human resource development in rubber smallholder sector	Dissanayake DMAP
Socioeconomic aspects of the rubber smallholder sector	Dissanayake DMAP
Use of GIS in rubber plantation management	Sankalpa JKS
<b>Breeding</b>	
Analysis on antioxidant genes expression in tapping panel dryness (TPD) affected rubber trees and effect of exogenous application of aserobic acid on alleving TPD	Withanage SP
Establishment and maintenance of the 1981 IRRDB collection obtain from Amazon	Withanage SP
Use of molecular biology strategies to increase the production and productivity of rubber establishing in mega zones	Withanage SP
Breeding selection and evaluation of new genotypes to increase the production and productivity of rubber by establishing in mega zones	Withanage SP
<b>Biochemistry</b>	
Biochemical assessment in latex to develop stimulation based harvesting systems in mega zones	KUDALIGAMA KVVS
Improve knowledge on biochemical & physiological aspects in mega zone	KUDALIGAMA KVVS
Biochemical and physiological screening of Hevea genotypes for different agro climates to increase the production and productivity of plantations	KUDALIGAMA KVVS
Biochemical & physiological analysis of rubber wood with respect to mechanical properties to increase the production and productivity of plantations	KUDALIGAMA KVVS
Effect of climate change on biochemistry & physiology of rubber tree to facilitate the expansions of plantation crops into non-traditional areas	KUDALIGAMA KVVS
Miscellaneous experiments to increase the production and productivity of plantations	KUDALIGAMA KVVS

## **Crop Production**

Improving the knowledge base on climate change & variability for better decision making	Wijesuriya B W
Productivity Improvement through high quality planting materials	Nayanakantha NMC
Increasing the land productivity through planting techniques	Nakandala SA
Productivity improvement and securing income through intercropping in mega zones	Silva TUK
Productivity Improvement through cost effective harvesting techniques	Nayanakantha NMC
Plant Physiological studies in Mega zones	Nayanakantha NMC
Productivity improvement through infrastructure development, training, bark auditing and trouble shooting	Nayanakantha NMC

## **Plant Protection**

Screening of effective chemicals to control diseases in view of increasing the productivity	Fernando THPS
Studies on the biology and molecular biology of pests	Fernando THPS
Screening of clones for leaf and panel diseases to identify disease resistant / susceptible rubber clones	Fernando THPS
Surveillance of potential pests and disease outbreaks to avoid unwanted sudden disease epidemics	Fernando THPS
Studies on biological control of Hevea pests	Fernando THPS
Studies on beneficial microbiology to explore methods to save foreign exchange, to promote small scale cottage industries and to strengthen the microbiological testings	Fernando THPS
Studies on miscellaneous projects	Fernando THPS
Advisory visits & Training programmes to strengthening the officers and the growers	Dissanayake DMAP

## **Non Food Industries**

In-situ filler reinforced natural rubber latex	Samarasingha IHK
Nano technological approach for preservation of natural rubber latex and its properties	Somarathna YR
Quality analysis of raw rubber latex and rubber processing chemicals	Attanayake A.P
Research and development work on latex raw rubber and rubber processing chemicals	Attanayake A.P
Adaptation of simple and small scale coagulation tanks	Sudusingha YCY
Development of a Solar-bio mass hybrid dryer for drying of sheet rubber	Sudusingha YCY
Development of a Commercially Viable Manufacturing process for Low Protein Natural Rubber	Sudusingha YCY
Development of Filler Incorporated Raw Rubber Types	Sudusingha YCY
Development of NR latex sludge as a functional filler	Sudusingha YCY
Study of DMA Properties of Different Types of Natural Rubber Composites	Sudusingha YCY
Development of environmentally friendly natural fiber filled rubber composites/Development of rubber compounds with modified rubber waste or any other waste material	Edirisinghe D.G

Development of latex based compounds/dry rubber based composites for special applications Edirisinghe D.G

### **Soil Science**

Improving soil fertility to increase the production and productivity of rubber in mega zones Hettiarachchi R.P

Enhancing fertilizer use efficiency to increase the production and productivity of rubber in mega zones Hettiarachchi R.P

Issuing certification for enhancing rubber production and productivity Hettiarachchi R.P

Modification of fertilizer recommendation systems of Hevea with reference to plant soil and field parameters Hettiarachchi R.P

Slow release fertilizer application for rubber nursery plants and immature rubber Hettiarachchi R.P

Investigation of the use of organic manures as a soil amendment in red yellow podzolic soils Hettiarachchi R.P

### **Statistics**

Use of appropriate statistical methods to improve interpretability of results Wijesuriya B W

## Tea Research Institute

Title	Principal Investigator
<b>Agri. Economics and Policy</b>	
Identification of socio-economic measures to overcome a shortage of workers in the large tea plantations	Shyamalie HW
Development of alternative worker deployment models in tea plantations	Shyamalie HW
Establishment & maintenance of tea database	Shyamalie HW
Evaluation of research recommendations & micro-analyses for the tea sector	Shyamalie HW
Identification of typology and trajectories of test based peasant farming systems by modeling land cover dynamic changes in low country region	Shyamalie HW
Evaluation adaptability of Technologies	Rajasinghe JCK
Development of Para Extension aides in the corporate sector	Sidhakaran VS
Design and Production of Teaching and Extension Materials	Samansiri BAD
<b>Breeding</b>	
Development of tea cultivars for mid country semi-arid zone (Uva)	Ranatunga MAB
Development bi and poly clonal seed cultivars	Ranatunga MAB
D1 Use of in vitro techniques to supplement conventional breeding program	Ranatunga MAB
Development of tea cultivars for mid country wet zone	Ranatunga MAB
Development of tea cultivars for up country	Ranatunga MAB
Development (screening) of tea cultivars specially suitable for small growers who cannot afford to use high input or modern agricultural practices	Ranatunga MAB
Metabolite profiling of tea Germplasm of Sri Lanka	Ranatunga MAB
Development of tea cultivars for low country	Ranatunga MAB
<b>Crop Production</b>	
Screening of lines for resistance to drought for Mid Country Wet zone	Damayanthi MMN
Screening of lines for resistance to drought for Mid Country dry zone	Damayanthi MMN
Mapping of Tea Lands in Sri Lanka	Wijeratne MA
Screening lines for resistance to drought	Damayanthi MMN
valuating cultivar performances under different irrigation systems	Bandara NPSN
Evaluation of Rain water harvesting techniques	Bandara NPSN
Evaluating identified shade tree species and establishing cultural practices for them	Wijeratne TL
Grafting on high quality and productivity of tea at St.Coombs Estate	Bandara NPSN
Investigation on degradation and conservation of tea lands in the Mid & Low elevations of Sri Lanka	Bandara NPSN
Carbon budgeting for different tea growing regions	WIJERATNE T.L.
Analysis of climate change, identifying vulnerable tea growing regions & seasonal weather forecasting for different tea growing regions in Sri Lanka	Wijeratne MA
Designing of motorized tea harvesters	Wijeratne MA

An In-depth investigation on the response of physiology, growth, yield and shoot characteristics of tea ( <i>Camellia sinensis</i> ) to mechanical harvesting	Pathiranage SRW
Evaluating different media and their mixtures for tea nursery bags	Bandara NPSN
Investigation on the effect of nursery bag size on tea growth in the nursery and field	Bandara NPSN
Evaluating micro irrigation systems for tea nurseries.	Bandara NPSN
Screening synthetic herbicides and establishing residue levels and PHIs.	De Silva MSDL
Evaluating use of slow releasing fertilizers for test nurseries	Bandara NPSN

### **Food Science**

Optimization of Electrical Energy Efficiency in trough withering using a Real time Heat and Mass transfer Mathematical Model optimization of Electrical Energy Efficiency in trough withering using a Real time Heat & Mass transfer Mathematical Model	Botheju WS
Development of an effective monitoring and control system for fluidized bed drying (FBD) of Orthodox Rotor vane teas	Raveendran K
Evaluating alternative energy sources for tea processing	Koneswaramoorthy K
Investigation on combined IR and Fluid bed drying in relation to quality and cost against normal fluid bed drying	Raveendran K
Introduction of a standard system to manufacture high quality green tea at cottage level	Piyasena KGNP
Simple technique to identify adulterated Black tea in the market	Jayawardhana SADPS
Extraction of protein from spent tea	Piyasena KGNP
Development of standards for tea (Pesticide Residue Analysis)	Piyasena KGNP
Establishment of antioxidant activities of different types of Sri Lankan teas	Jayawardhana SADPS
Use of Omics approaches towards development of cultivars resistant to biotic and abiotic stresses	Piyasena KGNP
Factors influencing polyphenol content & studies on developing polyphenol enriched black tea	Fernando MSC
Removal of Stalk and/or Fiber before Drying	
Modifying tea chest Packer to suit packing long leafy teas into tea Kraft bags	Koneswaramoorthy K
Efficient hot air supply system for withering trough	Raveendran K
Designing & developing efficient soil sterilization system using RF technique	Anurudhdha TAS
Environmentally Friendly Approaches for Weed Control in Tea Plantations	
Development of a cultivar screening method for low country live wood termite based on selected biochemical parameters	Piyasena KGNP

### **Plant Physiology**

Studies on physiological responses of tea to global climate change & carbon sequestration	Wijeratne TL
Evaluating growth performances & effects of shade on tea under these new tree species	Wijeratne TL



## Plant Protection

Development of multiplex PCR kit for rapid diagnosis of root pathogens	Liyanage NHP
Screening of new & alternate acaricides/ insecticides/ termiticides/ & strengthening IPM for tea pests	Mohotti KM
Evaluating and managing pest, disease and weed incidence under sustainable, organic and low input farming systems Evaluating biological and natural pest, disease and weed management methods	Mohotti KM
Screening lines for resistance/susceptibility to SHB for Uva regions	Senanayake RDPD
Screening lines for resistance/tolerance to the root lesion and burrowing nematodes for Uva	Senanayake RDPD
Screening lines for resistance to Stem Canker	Sinniah GD
Screening lines for resistance/susceptibility to LCLWT & SHB for Low Country	Senanayake RDPD
Screening lines for resistance/tolerance to root lesion and burrowing nematodes for LC regions	Senanayake RDPD
Screening of seed cultivars for resistance/susceptibility to LCLWT and SHB for all regions	Senanayake RDPD
Screening lines for resistance/susceptibility to SHB for UC regions	Senanayake RDPD
Screening lines for resistance/tolerance to the root lesion nematode ( <i>P. loosi</i> ) for UC regions	Mohotti KM
Climate change & its effect on pest incidences	Mohotti KM
Screening lines for resistance to BB & stem canker	Sinniah GD
Evaluation of alternate chemicals as stem protectants for SHB management in nursery, immature and mature tea for all regions	Senanayake RDPD
Evaluation of bio control agents for SHB	Senanayake RDPD
Screening lines for resistance/susceptibility to SHB for MC regions	Senanayake RDPD
Development of cultural and biological measures for suppressing weeds	De Silva MSDL
Introducing user friendly alternative tea propagation & soil sterilizing techniques & protected tea nursery concepts to minimize contamination and prevent dissemination of tea nematodes through planting materials	Senanayake RDPD
Evaluating methods for managing nematodes in young & mature tea	Senanayake RDPD
Harnessing and validation of insect chemical ecological parameters in screening cultivars resistant to LCLWT	Senanayake RDPD
Screening of new wound cut dressings to protect the prune cut surfaces from LCLWT	Senanayake RDPD
Establishing GAPs (crop, soil and bush management) to reduce LCLWT infestation	Senanayake RDPD
Screening lines for resistance/tolerance to the root lesion and burrowing nematodes for MC regions	Senanayake RDPD
Refining techniques for sampling, laboratory & field experimentation, surveys and statistical designs for studying insect, mites and nematode	Senanayake RDPD
Identification and use of semi chemicals for reducing insect and mite pest damage	Senanayake RDPD
Use of plant induced resistance for controlling tea blister blight	Sinniah GD

Evaluation of alternate chemicals as stem protectants for SHB management in nursery, immature & mature tea for all regions

Development of qPCR technique for screening of blister blight resistance

### **Soil Science**

Estimating crop response to macronutrients (N, K, Mg, s& P) at AER level De Silva MSDL

Estimating crop response to micro-nutrients (Zn, B, Mn, Mo etc.) at AER level Gunaratne GP

Development of methods for formulation of bio-organic and mineral or compound fertilizers suitable for tea Gunaratne GP

Development of economically viable slow releasing compound fertilizer basically for nitrogen, phosphorous, potassium and magnesium Gunaratne GP

Introduction of micro nutrient fortified foliar formulation based on micro nutrient status in tea growing soils Gunaratne GP

Evaluation of 02 new grasses.CO-3 & lemon grass in comparison with Mana & Guatemala De Silva MSDL

Investigations on soil quality to validate the SQI Bandara NPSN

Screening lines for response to applied nutrients Gunaratne GP

Establishing dolomitic limestone requirements for better growth of mature plants in different tea growing regions at soil series level

Studying root system & architectures with nutrient acquisition using root windows to examine below & above ground relationships Gunaratne GP

The survey on possible factors of contamination of Rare Earth Elements ( REE s) in made tea in Sri Lanka Gunaratne GP

## Veterinary Research Institute

Title	Principal Investigator
<b>Veterinary Science</b>	
Evaluation of Level of Antibiotic Residues in Livestock Products and Antimicrobial Resistant Pattern of Mastitis Organisms	Fernando PS
Occurrence of Ethanol unstable milk and its relation with physico-chemical characteristics of milk	Mangalika ULP
Development of strip based methods for detection of common adulterants in milk	Mangalika ULP
Development of in-house ELISA kit for Mycoplasma gallisepticum infection in poultry	Weerasooriya KMSG
Characterization of six isolates of A.marginale found from Sri Lanka to obtain the best isolate for cell culture vaccine inoculum	Iddamaldeniya SS
Development of an A. marginale blood vaccine to control the infection at Ridiyagama farm	Iddamaldeniya SS
Introduction of oil adjuvant vaccine to control Newcastle disease in Sri Lanka.	Kothalawala H
PCR based detection of cow milk adulteration with fresh goat milk in Kandy district	Pathirana DG
Detection and characterization of MRSA, ESBL and carbapenem resistant E. coil among isolates in bovine mastitis	Priyantha MAR
Characterization of ESBL producing E.coil and fluoroquinolone resistant Salmonella species in commercial broilers	Priyantha MAR
Study on Use of Histopathological and Immuno Histochemical Techniques for Detection of Bovine Tuberculosis	Perera GIS
Immuno Histopathological Study on Porcine Reproductive and Respiratory Syndrome (PRRS) and Porcine Parvo Virus (PPV) infection	Manchanayake SMTS
Isolation, Identification and characterization of strains of contagious ecthyma (orf) virus from goats for development of vaccine	Puvanendiran S
Establishment of fatty acid profiles of animal feeds and products	Weerasinghe WMPB
Determining the prevalence of Neospora Caninum in bovines in North western, Western and Southern provinces.	Dissanayake NDS
Efficient utilization of minerals in raw materials that used for poultry feeds; Calcium & Phosphorus	Priyankarage N
Molecular detection and genetic characterization of Theileria parasites among cattle in Sri Lanka	Gunasekara NADEM
Community based activity survey of dog rabies in Karuwappenkerny Grama Niladari Division in Baticaloa District in Sri Lanka	Ubeyratne JKH
Study the present situation, potentials and constrains of Duck Weed and Azolla as animal feed substitutes for farm animals in small scale farming systems in Sri Lanka.	Leukebandara IK
Examine the efficacy of selected probiotics and Photobiotics to replace antibiotics in poultry feed	Palliyaguru MWCD
Identification of native wild life species in extinction to prevent illegal slaughtering	Kumara UGVSS

Layer performances and Egg Quality characteristics affecting the hatchability, in village chicken at CPRS ,Karandagolla	Palliyaguru MWCD
Genetic polymorphism and climate change impact among farm animals	Gunawardana GA
Molecular tools and geographical information system to develop specific control strategies for bovine mastitis	Gunawardana GA
Molecular detection methods and diversity of M. bovis , for effective control strategies	Gunawardana GA