

Study on Absorption of Agriculture Graduates and Diploma Holders into the Agricultural Sector of Sri Lanka

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FOREWORD

Agriculture knowledge system plays the role of a catalyst for agricultural development, rural transformation, food security and trigger economic growth of a country. Formal agriculture education is a key component of the agriculture knowledge system which facilitates the emergence of leadership for agricultural development. As a predominant agricultural country, in Sri Lanka's agriculture education system has a relatively long history. The national education system has paid much attention on promoting agriculture education concerning its importance to direct agricultural development of the country.

Today's agricultural sector faces much challenges such as yield stagnation, higher production costs, marketing issues, health and environmental concerns and poor socio economic conditions of the farmers. To overcome these challenges value of the agriculture education system and constructive intervention of human resources produced by agriculture education system has much recognized. Hence, maintaining of positive relationship between human resources produced by national agriculture education system and agricultural sector of the country is much imperative to enhance sustainability of the sector.

This study was executed to investigate the absorption of agriculture graduates and diploma holders into the agricultural sector of Sri Lanka. It highlights involvement of agriculture graduates and diploma holders in agricultural related activities and obstacles for retaining in agricultural sector. I believe information provided in this report would be beneficial to policymakers, researchers, academia and other interested parties in the related field.

Keerthi B. Kotagama
Director

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R.M.M.H.K. Rambodagedara
J.A.U.P. Jayasinghe

EXECUTIVE SUMMARY

The government of Sri Lanka has immensely been supported towards the agriculture education over the past decades to provide an impetus to the country's development process. Agricultural faculties of the national university system and agriculture schools attached to the Department of Agriculture are key institutes established under the national education system to provide systematic agriculture education in Sri Lanka. Meet the national demand for agricultural experts equipped with fundamentals in the related subjects and agriculture extension professionals who expertise in practical applications are among the major intentions of agriculture education system of the country.

This research study was carried out to examine the extent of absorption of agriculture graduates and diploma holders into the agricultural sector itself, their contribution towards agricultural development of the country, challenges encountered by the graduates and diploma holders in entering and retaining in the agricultural sector and identify possible strategies to enhance their absorption and contribution towards agricultural sector development of the country. The study sample consisted of agriculture graduates and diploma holders who graduated within the period of 2012 to 2015 from selected mainstream agricultue faculties of national universities and schools of agriculture. The study found that the employment rate remains remarkably high among both agriculture graduates and diploma holders particularly with comparison to the national level statistics on youth employment. Further, their participation in agriculture related occupations is at elevated level indicating their positive involvement in agriculture.

The contribution of agriculture graduates to the agricultural sector was reported to be much diverse in terms of the nature of occupation and their occupational role. Yet, available opportunities to exploit their full potential are somewhat challenging. Approximately a half of the surveyed graduates were employed as professionals, however a great majority of them belonged to teaching professionals as a result of recent recruitment to the teaching positions by the government. Many of the other graduates serve in managerial, technical and associate professions. As revealed, a key determinant factor to remain in the current employment is primarily the limited choice available for those graduates. Less favourable employment opportunities available to provide a direct contribution to agricultural development particularly in the public sector was found to be a major

challenge faced by the graduates with regard to accessibility of agriculture related employments. Lack of gender equity in the recruitment process, poor facilities available in performing duties, monotonous nature and hardships to undergo with agricultural related occupations were among the major obstacles that impede their absorption and contribution to the agricultural sector.

As far as the absorption of agriculture diploma holders into the agricultural sector is considered, agriculture extension service was the most promising path for the majority of the diploma holders to make a fruitful contribution to the agriculture development of the country. The compatibility with educational qualifications and skills were the key reasons for selecting the said occupations by the majority of the diploma holders. When looking at the progression of the career trajectory of diploma holders', there is an increasing trend of participation in agriculture related occupations in general. Despite the importance of an efficient agriculture extension service system for productivity improvement in the sector has been a must, at present extension officers are facing numerous obstacles such as unfeasible targets to be covered as their service area is quite large and poor facilities have been impediments to the effective delivery of their service to the farming community.

Strengthening the linkages with the agriculture policy, national development priorities, agriculture education system, and labour market demands of the country is imperative to absorb agriculture graduates and diploma holders into the agricultural sector in meaningful way to obtain their fruitful contribution towards agriculture development and overall growth of the national economy in the long run. Attention should also be paid on broadening the knowledge on new innovations and technical expertise to attract young agriculture graduates as well as diploma holders into the agricultural field. Further, there is a great potential for them to become agro-entrepreneurs, so that agro-entrepreneurship is one of the promising pathway to enhance their contribution towards agriculture development of the country in a more innovative way while uplifting the farming community and national economy.

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ABBREVIATIONS

AET	-	Agricultural Education and Training
Als	-	Agricultural Instructors
BSC	-	Bachelor of Science
CIMA	-	Chartered Institute of Management Accountants
DAEOs	-	District Agricultural Extension Officers
DOA	-	Department of Agriculture
GDP	-	Gross Domestic Product
HRM	-	Human Resources Management
ILO	-	International Labour Organization
INGOs	-	International Nongovernmental Organizations
ISCO	-	International Standard Classification of Occupation
KVSS	-	Krushikarma Vyapthi Sewaka
NGOs	-	Nongovernmental Organizations
NVQ	-	National Vocational Qualification
SLAES	-	Sri Lanka Education Administrative Service
SLAS	-	The Sri Lanka Administrative Service
TVEC	-	Tertiary and Vocational Education Commission

CHAPTER ONE

Introduction

1.1 Introduction

Agriculture plays an important role in promoting human well-being while contributing to the development of the country. Particularly, it has the underlying responsibility of achieving food security as a basic human need reiterating the unchallenged significance of the sector. Since time immemorial, Sri Lanka has inherited a sound agricultural base which is still the bedrock of rural economy. With the changes in the economy, agriculture can effectively perform with other key sectors to trigger the economic growth, alleviate poverty and reach towards environmental sustainability (Anik *et al.* 2017; Byerlee *et al.* 2009). Further, increasing food demand can be met through vigorous development of the agricultural sector which ensures food availability in terms of quantity and affordability.

In this context, agricultural education can play a pivotal role in bringing these advantages of agriculture on many fronts as education shapes the progress of the society. Particularly, in the context of rural development and sustainable agriculture production, agriculture education has a decisive role to play (Alam *et al.* 2009). Importance of agriculture education also links with environmental wellness that has been threatened in many ways. Development agendas of every sector have certain interconnections with agricultural development. In achieving these positive outcomes, agriculture education is vested with a vital task.

Considering the significance of agriculture education, many countries unreservedly devote their energies to develop agriculture education. Although it is exorbitant in most developing countries, a major share of funding and financial support for agricultural education is borne by the national government and other decentralized institutions (Chittoor and Mishra, 2012).

Agriculture education system of Sri Lanka has relatively a long history. Governing bodies of the country established agriculture faculties and agriculture schools many decades back extending significant patronage to uplift agriculture education with the intention of linking education and agriculture to trigger the development process of the country. At present, Agriculture faculties in the national university system and agriculture

schools of the Department of Agriculture are the main institutes that provide systematic agriculture education in Sri Lanka. According to statistics of University Grants Commission, in a year national university system produced approximately 750 agriculture graduates (bachelor degrees) spending a considerable share of the government's expenditure on education. In addition, agriculture schools functioning under the Department of Agriculture (DOA) produce around 250 agriculture diploma holders annually.

Productive use of agricultural knowledge gained by these graduates and diploma holders is associated with the development of the country in many ways. Enhancing the productivity of agricultural sector is important not only for achieving the economic development goals, but also for social development. Hence, the importance of the contribution of human resources released by agricultural education institutions in achieving the targets of agricultural policy with a broader development direction is indispensable.

Although agricultural sector contribution to the economy has been shrinking, still the agriculture labour force constitutes nearly 26 percent (Department of Census and Statistics, 2018) of the total labour force. Interestingly agriculture has direct associations with rural development since still the majority of rural population rely on farming as the primary employment. In this context, there is a discourse on the possibility of taking full advantage of human resource produced by the national agriculture education system to strengthen the agricultural sector and bridging the prevailing gaps while taken into account the noteworthy contribution of the resources towards agricultural sector development. In this context, identifying the extent of absorption and involvement of agriculture graduates and diploma holders in agricultural sector has a significant importance to address the existing gaps and enhance their direction towards the growth of the sector. Hence, this study was conducted to scrutinize the absorption of agriculture graduates and diploma holders into agricultural sector of the country and their contribution towards agriculture development.

1.2 Research Problem

In recent time, agricultural sector of Sri Lanka is experiencing diverse issues that affect the sustainability and development of the sector in many aspects. Particularly, productivity stagnation, marketing issues, food insecurity, resource degradation, health hazards, climate change

uncertainties, agrarian poverty, less product diversification and less innovativeness are among the key concerns in current discourse in the agricultural sector (Institute of Policy Studies, 2015; World bank,2007). These issues have burgeoned and become more complicated indicating the need of proper remedial measures to lessen them. Undoubtedly, agriculture graduates and diploma holders can contribute immensely to overcome these prevailing circumstances as they can play a significant role to develop and strengthen the agricultural sector.

As many developing countries, decades back the public sector of Sri Lanka used to absorb the large majority of agricultural graduates, which is no longer possible. However, the involvement of agriculture graduates and diploma holders in the agricultural sector and other development areas is yet to be recognized, even though the national education system has given a significant impetus on producing agriculture graduates and diploma holders.

1.3 Research Objectives

1.3.1 Major Objective

The overall objective of the study is to investigate the absorption of the agriculture graduates and diploma holders into the agricultural sector and their contribution to the agricultural development of the country.

1.3.2 Specific Objectives

1. To analyze the agriculture graduates' and diploma holders' employment status and key determinants in selecting current employment
2. To investigate the nature of graduates' and diploma holders' involvement in agricultural sector within their employment roles
3. To find out the constraints for agricultural graduates and diploma holders in entering and retaining in the agricultural sector
4. To make recommendations to increase absorption of agriculture graduates and diploma holders into agricultural sector and enhance their contribution towards sector development.

1.4 Research Methodology

Both primary and secondary data were used in this study. A mail and telephone survey were administrated to collect necessary information from agriculture graduates and diploma holders. In addition, key informant discussions were conducted with the responsible personnel of the agriculture education sector.

Secondary data were collected from reports, periodicals and published and unpublished data sources available in relevant institutions such as the University Grants Commission, Ministry of Higher Education, and Ministry of Agriculture, Department of Agriculture and agriculture faculties and agriculture schools.

Sri Lanka agriculture sector comprises several categories namely food crops, plantation crops, floriculture & ornamental crops, livestock, fisheries and forestry (Department of Agriculture, 2016a). In this study agricultural sector/agricultural sector related contribution is considered as any accomplishments in related to agriculture sector and any industrial and services activities connected to agriculture sector.

1.4.1 Selection of Sample

For the sample, a cohort of agriculture graduates and diploma holders were selected corresponding to the graduation years from 2012 to 2015. The margin of error considered for sample selection is five with the confidence level of 95 percent. The total output produced by selected universities and agriculture schools was considered in selecting the sample size. Accordingly, the total sample size was 598 consisting of 336 agriculture graduates and 262 diploma holders. Taking the gender, output of each university and graduation year into consideration, at the beginning it was planned to employ stratified random sampling method as the sampling technique using the available lists in the relevant agriculture faculties and DOA. However, snowball sampling method had to be used when it was difficult to follow the lists due to unavailability of updated contact details of the graduates and diploma holders from the said lists.

Agriculture graduates passed-out within the period of 2012 to 2015 from five mainstream universities namely Universities of Peradeniya, Ruhuna, Rajarata, Wayamba and the Eastern University of Sri Lanka were selected for the survey.

Agriculture Diploma holders who completed their diploma during the period of 2012 to 2015 were selected for the survey. The sample consisted of diploma holders who graduated from the four main agriculture schools in Sri Lanka (School of Agriculture-Pelwehera, School of Agriculture-Agunakolapelessa, School of Agriculture- Kundasale and School of Agriculture- Vavuniya. These agriculture schools were selected considering the consistency of the output of diploma holders during the period taken for the survey.

The following table shows the total sample and response level of the sample for both graduates and diploma holders.

Table 1.1: Sample of the Survey and Response Level

Category	Total sample	Responses (Frequency)	Respond Level (% from the total sample)
Agriculture Graduates	336	278	83
Diploma holders in agriculture	262	252	96
Total	598	530	89

1.4.2 Data Analysis

Descriptive statistics were used to analyze survey data. The questionnaire was structured by pre-coding to facilitate the data analysis process. SPSS Software (21.0) was used in data analysis.

The International Standard Classification of Occupations 2008 (ISCO-08) developed by International Labour Organization (ILO) provides a system for classifying and aggregating occupational information obtained by means of statistical censuses and surveys, as well as from administrative records (ILO, 2017). Therefore, this study used ISCO-08 for job categorization of agriculture graduates and diploma holders to analyze their occupations in a systematic way.

1.5 Limitations of the Study

Due to unavailability of updated contact lists of agriculture graduates and diploma holders, it was difficult to stratify the sample into stratum based on specialization areas of the graduates. Owing to the fact that difficulties

of contacting respondents, snowball sampling method was used whenever needed. Hence, determining the actual pattern and distribution of the population (as planned) was disrupted.

Further, this study focused recently passed out graduates and diploma holders in agriculture covering only four years of period due to time constraint and limited information to cover widespread population.

CHAPTER TWO

Literature Review

2.1 Agriculture Education

Agricultural knowledge systems play a vital role in developing and disseminating knowledge, information and technologies relevant to food security and environmental sustainability. To develop agriculture knowledge system formal education system has a pivotal responsibility (Acker, 1999). In extensive term agriculture education is a process that consists of producing specialists, agriculturalists, researchers, educators, extension staff, agri-business operators to make productive contributors for the sector. In this aspect, energetic human resources from policy maker to farmer with the fullest capacity is requisite to reach the advancement of agriculture which highlights the importance of agriculture education and training system (Anderson, 1984; Van Crowder *et.al*, 1998).

There are direct associations in agricultural education and training (AET) with food supplies and environmental stewardship. In popular term agriculture education is much synonymous with agriculture extension (Anderson, 1984). In this view, role of human resources produced from system of AET consists of ensuring sustainable food production and provision services as well as diverse opportunities to rural community. Further adaption of new technology particularly, in developing countries is important to secure in the competition. Therefore, country specific agriculture education system is much needed to face the competition and overcome emerging challenges (Csaki, 1999). In line with the productivity improvement, agriculture extension is an imperative aspect in agriculture knowledge system as a key mechanism that targets disseminating new technologies and proper adaptation of the technology of farmers with the aim of promoting increased production (Anderson, 1984).

Importance of the agriculture education system has been highlighted by many experts since, the *agriculture only model* (solely concern in agriculture) has been an outdated concept. Therefore, focus of AET system is broadly and holistically connected with diverse aspects in related to rural development, food security, sustainable natural resources management, sustainable agriculture production and reducing rural poverty (Chittorr and Mishra, 2012; Gasperini, 2000; Saleem and Raouf, 2011). The value of agriculture knowledge system has increased simultaneous to the increasing

of multifaceted challenges encountered with agricultural sector such as crop yield stagnated, climate uncertainties, health concerns, deteriorating the water resources and marketing issues. Subsequently, these issues are deemed to be worsening with the proper utilization of agriculture knowledge system. Thus, importance of shifting from traditional agriculture education system to be enabled to address emerging challenges is much emphasized (Chittorr and Mishra, 2012; Maguire, 2000; USAID, 2011; Kroma, 2003).

Although, agriculture education is an integral part of the agriculture and rural development, the training of human resources in agriculture is not much *enclosed* with the development plans of many countries. Hence, the curricula and teaching programmes have hardly addressed the production needs and agricultural sector employment demands. In general, poor institutional relationship between agriculture teaching and research and extension services are identified as more common issues. Gap of producing human resources for agriculture extension service who can effectively communicate with diverse rural groups is also a much debated issue (Chittorr and Mishra, 2012).

According to the existing literature and present context several constrains related to the agriculture education system can be identified. Diverse changes and changing employment opportunities in agriculture is one of such obstacles. As a result of exerted structural adjustments, in many countries, government spending on agriculture education has been reduced. Therefore, the pressure on agriculture education institutions has increased and at the same time employment opportunities related to agricultural sector have been reduced. In fact, in developing countries as governments have no capacity to hire all the agriculture graduates, finding employments have become an increasingly difficult task (Chittorr and Mishra, 2012). In most developing countries, the major source of funding and financial support for agricultural education is the national government and other state owned administrative bodies. (Maguire, 2000). Recent economic crisis aligned with the structural adjustments has caused to reduce agriculture expenditure further. Particularly, agriculture education is expensive, since it requires specially designed teaching aids and technical equipment both in the field level and classrooms or laboratories. The maintenance and replacement of these facilities are challenging tasks with the dwindling financial support for agriculture education (Ajayi and Fapojuwo, 2013; Chittorr and Mishra, 2012).

Narrow disciplinary approach is also identified as one of the key obstacles interrelated with higher education in agriculture. Relevance of the curriculum to the job is an important factor that determines employability (Hemmati et al., 2007; Laraya, 2009). Accordingly, it is argued that the current agriculture education system has less interrelation with global requirements and less considered about market driven conditions (Kumar and Kumar, 2014). According to some scholars, in many developing countries higher education in agriculture is experiencing serious problems that impact the quality of the education provided and bring the relevance of the programmes offered into question (Atchoarena and Holmes, 2005; Chittorr and Mishra, 2012). Further, many programmes largely focus on conventional agriculture rather than focusing on new avenues of agriculture (Acker, 1999).

However, profile of agriculture education students illustrates the changes that have happened from time to time. Accordingly, demand for agriculture degree programmes has decreased over time and sponsorship for the agriculture education by the public sector has lessened. Due to deterioration of public sector involvement, private sector has replaced the public sector by maintaining direct contacts with farmers (Maguire, 2000).

There is a need of thinking strategically about human resources required in the field of education considering the growing changes and need of the future (Acker, 1999). Innovative leadership and institutional reforms together with new strategies that align with new trends and determinants of agricultural and rural development are of crucial importance. It is often highlighted the need of stressing out the holistic or integrated agriculture system to be able to understand multi-dimensional nature of sustainable agriculture production (Chittorr and Mishra, 2012). In the overall aspect, agriculture education has incessant importance mainly due to its contribution for the food security. Further, agriculture education contributes directly and indirectly for the inclusive development of nations. However, the link of agriculture education, labour market need and contribution to the development agenda has been a much debated concept with the rapidly changing circumstances.

2.2 Agriculture Education System in Sri Lanka

2.2.1 Agriculture Schools

Agriculture education in Sri Lanka has a long history. Prior to the commencement of university education, school of agriculture played an

inventive role in producing qualified human resources in the field of agriculture (Jayaratne, 1992). In 1816 School of Tropical Agriculture was established in the Royal Botanical Garden in Sri Lanka which was a remarkable step to establishing a formal agriculture education system of the country. In 1948 another agriculture school was established for women in Kundasale. In 1958, this school was renamed as the Agriculture School of Kundasale as male students were given opportunities to enter the school. In 1966, both Agriculture School of Kundasale and School of Tropical Agriculture were merged and established a two-year diploma programme for agriculture to the youngsters to develop their career in agriculture (Department of Agriculture, 2016b). After this initiative, steps were taken to broaden the network of agriculture schools covering a wider geographical area of the country. Most of the agriculture schools were situated closer to government research farms with the aim of utilizing these resources for learning purposes (Jayaratne, 1992).

There was a close interrelationship of public extension service and agriculture schools as majority of extension officers have been produced through agriculture schools and practical farm schools. The hierarchy of public extension service at district level consisted of three levels namely; District Agricultural Extension Officers (DAEOs), Agricultural Instructors (AIs) and *Krushikarma Viyapathi Sevakas* (KVSs).¹

Agricultural Extension Officers (DAEOs) worked at district level and bore the responsibility of the overall operation of the agriculture extension programme. DAEOs were either university graduates or diploma holders who had fairly sufficient field experience. At the next level, there were headquarters AIs and certain subject matter specialists. To be an AI he/she had to complete a two-year diploma programme in Agriculture. KVSs were worked at village or ground level and they had completed a one year course at the practical farm school (Asmar, 1977).

The school of agriculture offered a two years diploma course in Agriculture. The young people in the age between 17-25 and had passes in at least six subjects at the GCE Ordinary level examination including Sinhala or Tamil language and three science subjects could have enrolled to the diploma

¹ Field level extension officer

programme. Practical farm should have offered a one-year agriculture training course for those in the age group between 17-24 with passes for six subjects at the G.C.E.O/L. Initial selection was done by the DAEOs and final selection was done by the DOA, headquarters. There were six practical farm schools for boys and two schools were for girls. Majority of KVSs had to follow this one year course and work at village level afterwards (Asmar, 1977). However, KVS system was abolished later.

Table 2:1 shows the establishment of agriculture schools in Sri Lanka throughout the period.

Table 2.1: Establishment of Agriculture Schools in Sri Lanka

Faculty	Year of establishment
School of Tropical Agriculture – Royal Botanical Garden Peradeniya *	1916
School of Agriculture for Women –Kundasale *	1948
School of Agriculture - Kundasle	1966
School of Agriculture - Agunakolapelessa	1980
School of Agriculture - Pelwehera	1981
School of Agriculture - Vavunia	1989
School of Agriculture - Karapincha	1994
School of Agriculture - Labuduuwa	1994
School of Agriculture - Bibila	1994
School of Agriculture – Palamune	2015

**These two schools were merged into one school in 1966 under name of School of Agriculture, Kundasale*

Source: Department of Agriculture, 2016b

In the late 80s allocated time and content of the subjects had altered to a certain extent. However, subject titles and number of subjects had remained the same. In 1994, topically important subjects were included in the curriculum. As a result, crop protection, food science and technology were newly introduced under the syllabus. Basic statistics was also included to the subjects of agriculture economics and farm management. In addition, course content and allocated time for the titles of the relevant subjects have been changed in 1994 (Department of Agriculture, 2016b).

In the year 2000, steps were taken to introduce major changes both in the curriculum and the course structure in the diploma programme in agriculture. Unit system was introduced for the first time to the

programme. Under the unit system, course content had separated to the subject areas and course units were identified under each subject area. This modification was introduced to the examination system as well. It was named 100 series for the first year and 200 series for the second year (Department of Agriculture, 2016b).

Considering the practical difficulties encountered when the implementation of the unit system within the systems of agriculture schools, in 2002 a new syllabus with amendments was introduced. The new syllabus consisted of 10 subjects for the first year and 12 subjects for the second year. Credit values for the subject units were given considering lecture hours (20) and practical hours (40) (Department of Agriculture, 2016b).

In 2009, under the chairmanship of the Deputy Director (Education) a steering committee was appointed to carry out amendments of the syllabus of the programme of diploma in agriculture. Further a separate committee was appointed for each subject area. As a result, internal amendments to the subject units were made by inserting updated technical information and trends. However, there were no changes in the subject areas, subject names and subject units of the existing syllabus (Department of Agriculture, 2016b).

National Vocational Qualification (NVQ) is a nationally recognized system for granting tertiary and vocational education. Therefore, the syllabus for agriculture diploma was amended in accordance with NVQ qualifications as upgrading the diploma in agriculture to NVQ level was identified as a timely requirement in 2013. The Department of Agriculture has provided financial and technical support for the new initiative to the Tertiary and Vocational Education Commission (TVEC) and development of relevant syllabus was carried out by the University of Vocational Technology. The syllabus was based on the “National Competency Standards” prepared for the Diploma in Agricultural Production Technology. For reaching the national competency standards six employability modules were included in addition to the existing subject matters. In addition, several modules were included with the intention of providing knowledge and skills on business management. In the second year elective modules have been introduced enabling the students to select specialization area - either research or marketing field — at their will (Department of Agriculture, 2016b).

Semester system was introduced through NVQ qualification. In the first year medium of instruction is Sinhala or Tamil and from the second year it is English. As crop cultivation is practiced under the *Yala* and the *Maha*

seasons, problems were arising when conducting academic activities under semester system. Therefore, amendments for the syllabus were made in 2014 internally by the Department of Agriculture subject to detrition of TEVS. Following the amendments, modules related to crop cultivation are being conducted as annual modules as practical assignments to be on par with the two main seasons of the country (Department of Agriculture, 2016b).

2.2.2 University Education System of Agriculture

In 1948 higher education system of agriculture started to create professionals for the agriculture and livestock sub sector by creating the faculty of agriculture and the veterinary science in the University of Ceylon. This was a remarkable turning point for progression of agriculture education system in Sri Lanka (Wickramasinghe, 2006).

Table 2.2: Establishment of Agriculture Faculties in Sri Lanka

Faculty	Year of establishment
Faculty of Agriculture and Veterinary science, University of Ceylon*	1948
Faculty of Agriculture, University of Peradeniya	1972
Faculty of Agriculture, University of Ruhuna	1978
Faculty of Agriculture, Eastern University	1981
Faculty of Agriculture, University of Jaffna	1990
Faculty of Agriculture, Sabaragamuwa University	1995
Faculty of Agriculture, Rajarata University	1995
Faculty of Agriculture, Wayamba University	1999
Faculty of Agriculture, Uva Wellassa University	2005

* In 1972 the faculty was separated into two faculties namely faculty of agriculture and faculty of veterinary sciences.

Adopted from: Wickramasinghe, 2006

In 1972, an expert committee was established by the Board of Governance of the University of Ceylon with the aim of accessing the requirement of higher level human resource needed for agricultural development. The recommendations made by them pointed out the need to develop the agriculture-related post graduate education system. In 1972, the faculty of agriculture and faculty of veterinary sciences were separated. Establishing a separate faculty, faculty of agriculture augmented the student enrolment remarkably (Jogarathnam, 2000; Senanayake, 2000). Creating another

landmark in the progression of higher education system in agriculture in 1975 the Post Graduate Institute of Agriculture was established in the University of Peradeniya (Wickremasinghe, 2006). The initiative is a vital step to groom agricultural professionals in Sri Lanka.

After establishing the formal system of university education, currently eight universities offer agriculture degrees under different and modernized course structures of agriculture knowledge system. Although the core concepts of agriculture are taught in all agriculture faculties in a similar manner certain universities have modified and diversified their degree programmes further more to cater the current and future needs of the sector.

2.3 Empirical Evidence

Most of the developing countries are able to develop their potentials and human resources but they have not been successful in utilizing the potentials to the best (Ingersoll, 2001). Academic institutions play an important role in leading each country to success. Therefore, it could be said that an efficient education system can provide the country with productive work force (Fresh, 1979; Joneydi, 2013).

At the global level with the aim of overcoming issues in related to graduate employment, universities have paid immense attention on graduate employability. Employability is recognized as a set of achievements, understanding and personal attributes that make an individual more likely to gain employment and be successful in their chosen occupations, which benefit themselves, the workforce, the community and the economy (Yorke and Knight, 2006). However, lack of positive connectivity between the education system and labour market could create imperfections in the labour market.

Only a limited number of studies have been carried out to investigate the agriculture education system and its relevance to the labour market. From those research many of the empirical studies related to this subject have been conducted in developed countries.

Career paths pursued by agricultural graduates from the University of Missouri were explored by Garton and Robinson (2006). According to the results derived from the study, graduates of the programme were employed in a variety of career paths. Of those employed full-time, approximately two-thirds (68%) were employed as secondary agriculture teachers, sales

representatives, or in management positions. The rest were engaged in graduate schools, industry education and training, communications, production agriculture, financial services and government agencies.

A tracer study was conducted by Anyanwu (2000) to understand the retrospective contribution of education to current work covering the arts and agriculture graduates in the University of Nigeria. According to study findings the knowledge and skills gained from studying significant fields in universities were highly relevant and applicable to their employment.

Another study was conducted on effective factors on the employment status of agricultural graduates in Iran. As found, three most effective factors of unemployment of graduates were limited employment capacity in the public sector, unsatisfactory employment conditions in the public sector and discordance of university education with dissension professions (Miraksadez and Ghiasv, 2011).

Alam *et al.* (2009) conducted a study to understand how agriculture education and training can contribute to the development of Bangladesh through acceleration of agriculture economies. It highlighted diverse issues pertaining to agriculture-related higher education. Accordingly, conventional research environment in universities and other higher education institutes in the field of agriculture creates a dissatisfying education and training system. This study highlighted the lack of practical training in diploma programmes with regard to diploma education programmes in Bangladesh.

Evidence shows in Sri Lanka, employment indicates a movement away from agriculture in general views (Gunatilaka *et al.* 2010) which affects the employment behavior of the human resources produced by the national agriculture education system in Sri Lanka. However, a knowledge on the outcome of agriculture education system and their involvement in agricultural sector is quite fragmented. However, in Sri Lanka a study was carried out to analyze the employability of agriculture graduates who entered the job market during 1998-2001. A mail survey was conducted for three consecutive years (2001, 2002 and 2003) and it was revealed that employment rate of the graduates varied in the respective years surveyed. Variation in the employment rate of the graduates was observed based on the subject areas in which they specialized. The study findings revealed that for graduates who specialized in agriculture extension, food science and technology, agriculture economics and animal science had higher demand in the labour market. The lowest demand was recorded for those who

specialized in agriculture biology, soil science and crop science (Dilrukshi and Wickramasinghe, 2006). Further, according to Jayaweera *et al.* (1992), there was not remarkable mobility in occupation level among women agriculture graduates despite the fact that educational level showed an upward mobility of them.

In addition, Ramanayake *et al.* (2013) conducted a study based on a census of graduates in the year 2012 of all the universities. It provides an overview of the determinants of employment for graduates at the university level. According to the findings half of them were employed in a field related to their discipline. From the total unemployed graduates in the respective period only three percent represented agriculture graduates showing the high level of employability among them.

Although agriculture vocational education plays a significant role in agriculture education system in Sri Lanka, very limited studies have been carried out with regard to agriculture extension service and education system of Sri Lanka. However, Asmar *et al.* (1977), conducted a study with the objectives of ascertaining educational and training needs of the agriculture extension personnel, reviewing the curricular of relevant educational institutions and training programmes provided for them targeting education and training of agricultural extension personnel in Sri Lanka. The Study findings highlighted the need for re-orientation of agricultural vocational education, considering the agrarian situation of the country, new demand for agriculture extension workers in line with the vision of achieving agriculture productivity with the approach of integrated rural development.

As evident shows, knowledge in related to employability of key human resources produced by the agriculture education system in Sri Lanka have compartmentalized and no recent study carried out regarding their absorption into agricultural sector. There is a gap to identify the absorption of the human resources produced by the agriculture education system of Sri Lanka that constitute both agriculture graduates and diploma holders in the present context.

SECTION ONE

**ABSORPTION OF AGRICULTURE GRADUATES
INTO THE AGRICULTURAL SECTOR
OF SRI LANKA**

CHAPTER THREE

Demographic and Educational Background of the Agriculture Graduates

3.1 Introduction

This subsection summarizes the demographic and educational background of the agriculture graduates surveyed. The demographic characteristics include age, gender, ethnicity, religion, marital status and the year of graduation. Under the educational qualifications the types of majoring module, educational achievements, accumulation of agriculture related trainings and other professional qualifications of the agricultural graduates are discussed.

3.2 Demographic Background of the Sample Graduates

From the total sample of graduates, 278 of agricultural graduates had successfully responded to the survey recording 83 percent of response level. The Table 3.1 shows the demographic attributes of the graduates.

From the total sample, 44 percent were males and 56 percent were females. The age of respondents was categorized into four. Accordingly, 44 percent of the respondents belonged to the age category of 28-29 years while the age category of 26-27 years accounted for 36 percent. The mean age of the respondents was recorded as 27.9 years. The age of the respondents ranged from 24 to 43 years. Graduates who entered the university in a special category with the entry qualification of diploma in agriculture represent the higher age categories. Majority of the respondents were unmarried (68 percent). The prominent ethnic group of the agricultural graduates was the Sinhalese accounting for 92 percent. Further there is a slight variation of graduation year of the respondents due to the differences in respond level of graduates who passed out in a certain year.

Table 3.1: Demographic Characteristics of the Respondents

Variable	Frequency	Percentage (%)
Gender		
Male	121	44
Female	157	56
Age		
Age =<25 years	10	4
26-27 years	100	36
28-29 years	123	44
<30 years	45	16
Marital Status		
Married	91	33
Unmarried	187	67
Ethnicity		
Sinhalese	257	92
Sri Lankan Tamil	16	6
Indian Tamil	2	1
Other	3	1
Religion		
Buddhist	252	91
Hindu	14	5
Catholic/Christian	9	3
Other	3	1
Respondents by year of graduation		
2015	78	28
2014	62	22
2013	69	25
2012	69	25

Source: Authors' Survey data, 2016/17

3.3 Educational Background

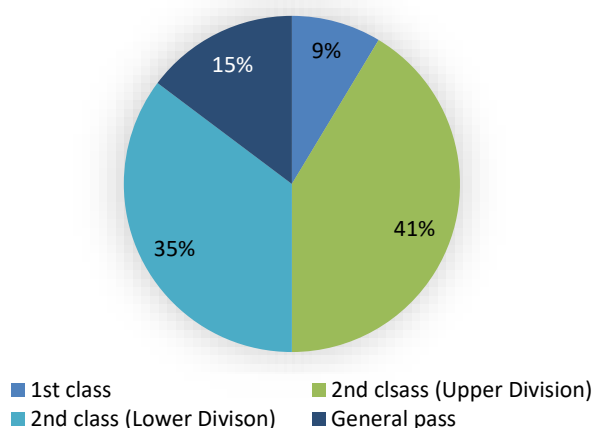
Selecting a majoring module is a fundamental decision for graduates to build their career path. Modules offered by agriculture faculties in Sri Lanka have been changed over the period with modifications to the majoring modules. Table 3.2, reveals that 25 percent of the sample graduates' field of specialization was crop science followed by food science, animal science and fisheries accounting for 24 percent.

Table 3.2: Major Specialized Areas of the Respondents

Specialized Areas	Frequency	%
1. Crop Science.	69	25
2. Food science/ Animal Science / Fisheries	68	24
3. Agricultural Economics/ Extension/Business Management	49	18
4. Plantation Management and Forestry	24	9
5. Agriculture Engineering	22	8
6. Environment, Water Resources and Soil Science	18	7
7. Agriculture and Molecular Biology, Bio Technology	11	4
8. Agribusiness Management	9	3
9. Horticulture Landscaping and Gardening	8	3
Total	278	100

Source: Authors' Survey Data, 2016/17

As shown in the Figure 3.1, 41 percent and 35 percent of sample graduates have completed their Bachelor of Science (BSc.) in Agriculture degree with a second class honors- upper division and lower division respectively. Only 9 percent of sample graduates completed their BSc. Agriculture degree with first class honors demonstrating their academic excellence.



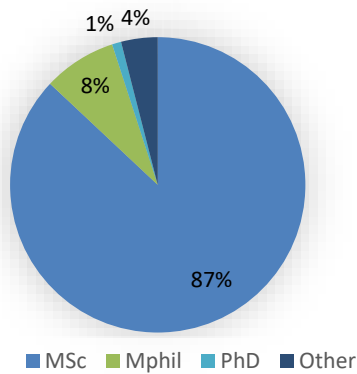
Source: Authors' Survey Data, 2016/17

Figure 3.1: Class Obtained by the Respondents for the BSc. Degree

Further, according to the study findings, of the total graduates, 32 percent have enrolled or already completed their post graduate programmes in

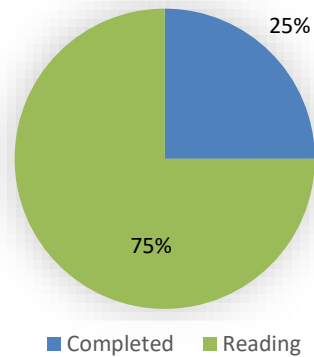
different fields. The Figure 3.2 illustrates the information on post graduate qualifications of the respondents. A great majority of the respondents (87 percent) have either enrolled or completed in MSc. programmes while 8 percent have either enrolled or completed their M.Phil. programmes. Interestingly, a greater majority of the graduates have either enrolled or completed their post graduate degrees in the fields related to agriculture.

However, as presented in Figure 3.3, only one fourth of the respondents who registered for post graduate programmes have completed their programmes while others are yet to complete.



Source: Author's Survey Data 2016/17

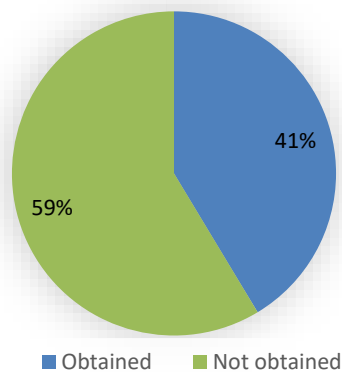
Figure 3.2: Postgraduate Programmes Enrolled /Completed by the Respondents other than BSc in Agriculture



Source: Author's Survey Data 2016/17

Figure 3.3: Status of Completion of the Postgraduate Programmes by the Respondents

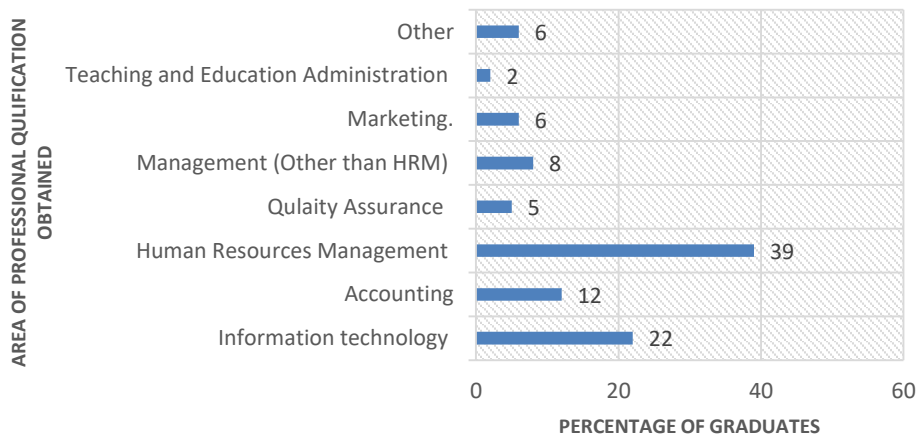
Other than the first degree and the post graduate qualifications, professional qualifications are crucial to build competencies of any career without which qualifiers are unable to make good negotiations in the labour market. This is even crucial since around 700 agriculture graduates are passing out per year which creates a higher competition in the job market for agriculture graduates. As depicted in Figure 3. 4, forty one percent of the respondents have obtained professional qualifications in diverse fields in addition to their BSc degrees in agriculture. This indicates that majority of agriculture graduates have identified the importance of having additional professional qualifications.



Source: Authors' Survey Data, 2016/17

Figure 3.4: Professional Qualification Obtained by the Graduates

Figure 3.5 further illustrates the professional qualifications they have obtained. Human Resource Management (HRM) found to be the most demanding professional qualification accumulated by the sample graduates which accounts for 39 percent.



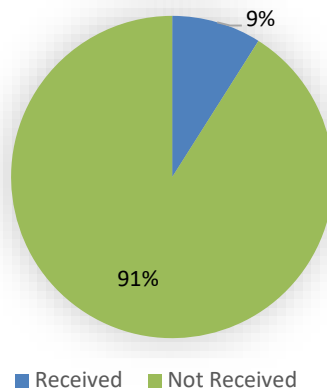
Source: Authors' Survey Data, 2016/17

Figure 3.5: Type of Professional Qualification Obtained by the Graduates

The next most widely held professional qualifications are in the field of information technology which denotes 22 percent of the sample. This was followed by accounting related professional qualifications such as management Accountancy programmes offered by Chartered Institute of Management Accountants (CIMA) and the Chartered Accountancy.

Management courses other than HRM field, marketing and quality assurance were the other predominant fields of professional qualifications obtained by the graduates. Since most of the agriculture graduates passed out are unable to find employment opportunities directly related to agriculture, professional qualifications provide advantageous and pathways to grasp the labour market opportunities in multidisciplinary fields. Although many agriculture degree programmes offer versatile knowledge to the students, professional qualifications are also can be considered as one of the key determinants for higher employment rates among agriculture graduates.

As shown in the Figure 3.6, as far as the post-graduation training programs received by respondents in the field of agriculture (knowledge and skill advancement) are concerned, an overwhelming majority (91 percent) were reported as non-receivers.



Source: Authors' Survey Data, 2016/17

Figure 3.6: Receiving of Agriculture Related Training after Graduation

Chances of receiving post-graduation training programmes related to agricultural sector depends on the sector that they are now employed in, their job role, position they are hired for and institutional policies and practices.

CHAPTER FOUR

Nature of Employability of the Agriculture Graduates

4.1 Introduction

This chapter describes the nature of employment of the respondents by discussing their current employment status, major determinant factors for selecting current employment and reasons for the unemployment.

4.2 Employability of the Graduates

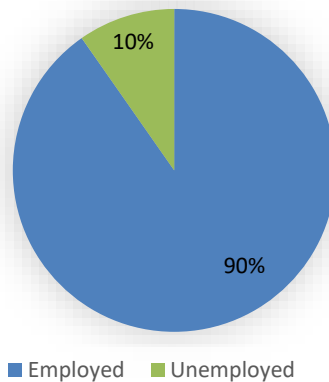
Directing students for diverse kind of careers successfully is one the prime objectives of the education particularly in the higher education. The main objective of university education is to produce graduates with soft and hard skills for different careers awaiting them in the process of growth in the country. Universities facilitate the production of intellectual needs of a community as regards both academic knowledge and professional training (Ariyawansa, 2008).

According to Lakshman (1998), when the university education commenced in Sri Lanka from the period 1942 to mid-1960s, receiving suitable employment was not an issue, since employment opportunities were guaranteed for graduates both in the public and private sectors. Irrespective of the field of study there were prestigious employment prospects for graduates. In this sense labour market behaviour and education system were corresponding to each other.

The prevailing competitive environment, increasing pace of technological change and changes of labour market requirements are the main rapidly evolving trends which affects the employability of graduates. On one hand the notion that the dwindling capacity of the economy to absorb the current output of university graduates has been disputed. On the other hand, importance of the agricultural sector has lessened with the structural changes introduced to the economy.

The survey found that a majority of agriculture graduates have obtained employment opportunities after their graduation. Accordingly, 90 percent of graduates were employed while the rest of the graduates have been either unable to penetrate the workforce or being voluntarily unemployed (Figure 4.1). This reflects that the employability of the agriculture graduates

is much higher although Sri Lanka recorded higher graduate unemployment level in recent years.



Source: Authors' Survey Data, 2016/17

Figure 4.1: Employment Status of the Respondents

Majority of male and female graduates were employed irrespective of the gender. However, employment rate was slightly higher among the male graduates than the female graduates as shown in Figure 4.2.



Source: Authors' Survey Data, 2016/17

Figure 4.2: Employment Status of Graduates by Gender

Although the reason for this slight difference is quite uncertain, consideration of the gender in making arrangements to some occupations, nature of the agriculture related occupations, gender preference in the recruitments and family commitments may have given rise to this situation.

4.3 Nature of Employment

Although appropriate work engagement is important for graduates for their career growth, finding an employment that is compatible with the education qualifications has indeed become a challenging task particularly with the shrinking contribution of the agricultural sector to the national economy. However, as revealed in the study, 82 percent of graduates have succeeded in securing fulltime permanent employment while 18 percent of the respondents were involved in fulltime temporary/contract basis employment. Of the total graduates, only one percent was recorded to be engaged in part-time employments (Table 4.1).

Table 4.1: Nature of the Employment

	Permanent		Temporarily		Total	
	Frequency	%	Frequency	%	Frequency	%
Fulltime	203	82	46	18	249	99
Part-time	0	0	2	100	2	1
Total	203	81	48	19	251	100

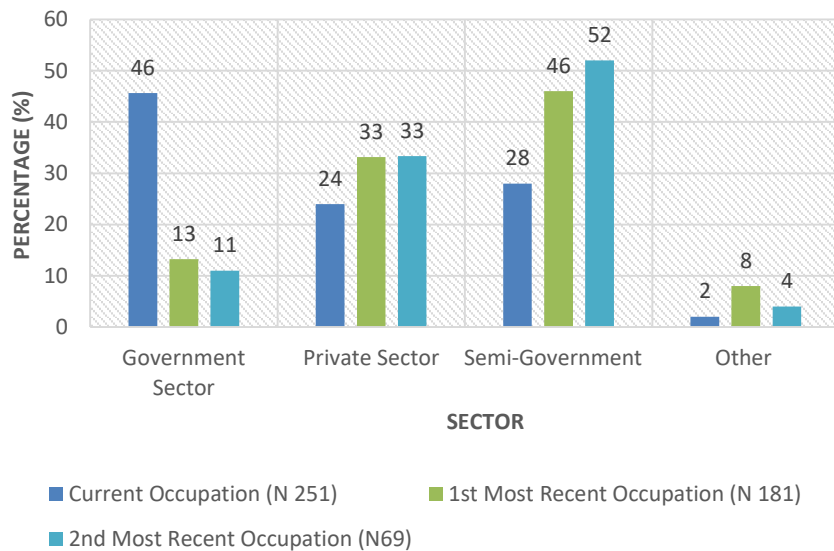
Source: Authors' Survey Data, 2016/17

4.4 Sector of the Employment

It is interesting to see how the career trajectory has changed for agriculture graduates since the year they passed out. As clearly depicted in figure 4.3 in the beginning the highest number of graduates are employed in the semi government sector which is followed by the private sector. Yet, the involvement in public sector employments is minimal.

However, the trend changes with the time and after some time the highest recorded graduates get employed in the government sector followed by the semi-government sector while the involvement in the private sector gradually declines. Most of the graduates are recently settled with the public sector employment. The main reason for this was the recruitment for teaching positions in the fields of agriculture and other science related subjects in the latter years. Other employment areas in which graduates are involved include INGOs/NGOs, farmer and community based organization and self-employment or enterprises.

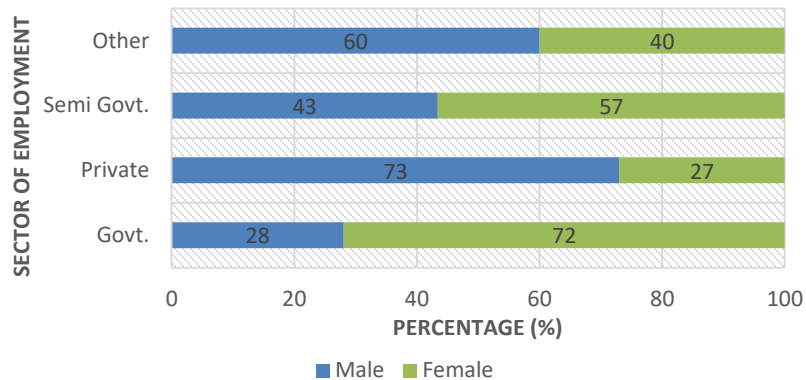
The major reasons for this trend of change in career trajectory of agriculture graduates are as fresh graduates they try to get employed in any sector possible. Most job opportunities are available in the semi-government and the private sector due to high recruitment rates and short recruitment procedures. However, with time they seek to move towards government sector considering higher job security and changing career and life goals. In overall aspect, their career aspiration might be altered further, since still surveyed graduates are young and are in the transition period of their career.



Source: Authors' Survey Data, 2016/17

Figure 4.3: Sector of Employment of Graduates by Three Most Recent Occupations

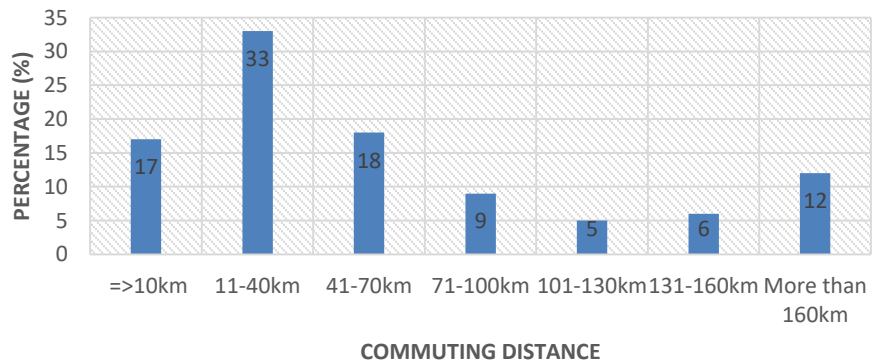
So far as the gender distribution in different employment sectors with regard to the current employment is concerned, it clearly reflects that female representation in the public sector occupations was nearly three times higher than their male counterparts in the same sector (Figure 4.4). On the contrary, male representation of the private sector employments was a reverse trend of the above. The participation of females in semi-government sector was also higher due to their high preference to work in the state owned institutes.



Source: Authors' Survey Data, 2016/17

Figure 4.4: Sector of Employment by Gender

Commuting is identified as an important element of a well-functioning and economically sustainable labour market (Sandow, 2011). However, commuting distance could be a crucial factor for job retention and reallocation. The study revealed the mean commuting distance of the graduates was 71.5 km, with the minimum distance of 0.5 km and a maximum of 395 km.



Source: Authors' Survey Data, 2016/17

Figure 4.5: Commuting Distance of the Graduates

However, as illustrated in the Figure 4.5, only 12 percent of the graduates have to travel more than 160 km away from their residences for their occupation. The commuting distance of one third of the graduates was in between 11-40 km. The commuting distance may influence on reallocation of their employment.

4.5 Determinants of Employment Choice

It has been identified through the survey that the socio-economic factors, wage structures, working conditions and characteristics of individuals as key determinants of the flow of the labour force of agriculture graduates. Accordingly, major reasons for graduates to select the current employment are given in summarized form in Table 4.2.

Table 4.2: Major Reasons for Selecting Current Employment of Graduates

Major Reasons (In a sequence order)	Priority		
	1 st Priority	2 nd Priority	3 rd priority
1	Inability to find better job (17%)	Having career development opportunities (15%)	Having career development opportunities (18%)
2	Compatible with educational qualifications and skills (13%)	Compatible with educational qualifications and skills (11%)	Recognition and social status (12%)
3	Personal interest / a well-liked job (13%)	Personal interest/a well-liked job (10%)	Favorable working conditions (12%)
4	Having career development opportunities (13%)	Inaccessibility to a better job (10%)	Personal interest / a well-liked job (11%)
5	Since it was the first opportunity came my way (12%)	Favourable working conditions (10%)	Working place is located in close proximity to home (9%)

Source: Authors' Survey Data, 2016/17

The rows in the given table indicate the priorities given by the respondents (as 1st priority, 2nd priority and 3rd priority) for the identified key reasons for their employment choice (after ranking them), while columns indicate the five major reasons for selecting current employment of the graduates in an order, which comes under each rank.

As results indicate, first ranked reason for selecting the current employment of the 17 percent of graduates was inability to find a better employment opportunity.

In contrast, as per the 15 percent of graduates ranked 2nd prioritized reason for choosing the current employment was having career development opportunities. Further, compatibility with education qualification was the 2nd ranked reason for selecting the current employment by 11 percent of employed graduates. Other reasons for selecting the current employment that comes under 3rd rank/priority were having career development opportunities (18%) followed by recognition and social status (12%).

In addition, inaccessibility to a better job, favourable working conditions, personal interest and proximity to the working place were among the major determinants for career choice of agriculture graduates.

4.6 Reasons for Unemployment

As reported in Chapter Three, a higher number of agriculture graduates was employed and comparatively lesser proportion recorded as unemployed. The Table 4.3 summarizes the major reasons for being unemployed.

According to 63 percent of unemployed graduates, difficulties in finding an employment on par with their education qualifications identified as the first prioritized reason for their unemployment. A considerable number of graduates (15%) have mentioned that they have intentionally chosen to be unemployed as they were engaged in higher education as the first prioritized reason.

Thirty-seven percent of graduates have stated absence of bureaucratic and political influences as the key reason for them to be unemployed, which has been mentioned as second ranked reason for being unemployed. The other second ranked key reason was difficulties in finding a job compatible with educational qualifications and majoring module (16%).

Table 4.3: Reasons for Unemployment

Major Reasons (In a sequence order)	Priority		
	1st Priority	2nd Priority	3rd Priority
1.	Difficulties to find a job that compatible with educational qualifications/ field studied 63%	Absence of bureaucratic and political connections 37%	Family constraints/ commitments 30%
2.	Doing higher studies 15%	Difficulties to find a job compatible with educational qualifications /field studied 16%	Difficulties to find a job compatible with educational qualifications 20%
3.	Absence of bureaucratic and political connections 7%	Family constraints/ commitments 11%	Low remuneration /income of jobs 20%
4.	Could not obtain a job related to relevant field 7%	Personal choice of not having a job 11%	Doing higher studies 20%
5.	Dissatisfaction of the previous job 7%	Low remuneration /income of jobs 11%	Less experience 10%

Source: Authors' Survey Data, 2016/17

A major segment of unemployed agriculture graduates has mentioned that family constraints and commitments were the reason for their unemployment, as the third ranked reason.

CHAPTER FIVE

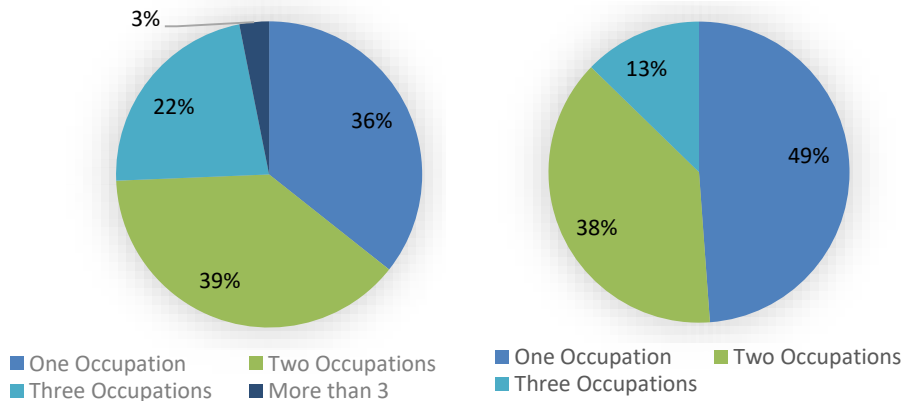
Absorption of Agriculture Graduates into the Agricultural Sector

5.1 Introduction

This chapter discusses the absorption level of agriculture graduates into the agricultural sector by focusing on their recent occupational history, occupational relationship to the agricultural sector and their involvement in agriculture-related tasks when they perform duties and roles pertaining to the current occupations.

5.2 Employment History of the Graduates

Information was obtained on employment history of respondents' current occupations and two most recent occupations to recognize their absorption level into the agriculture related employments. Figure 5.1 and 5.2 illustrate the total number of occupations in which graduates involved since the graduation and the relationship of such occupations to the agricultural sector respectively.



Source: Authors' Survey Data, 2016/17

Figure 5.1: Total Number of Occupations Involved since Graduation

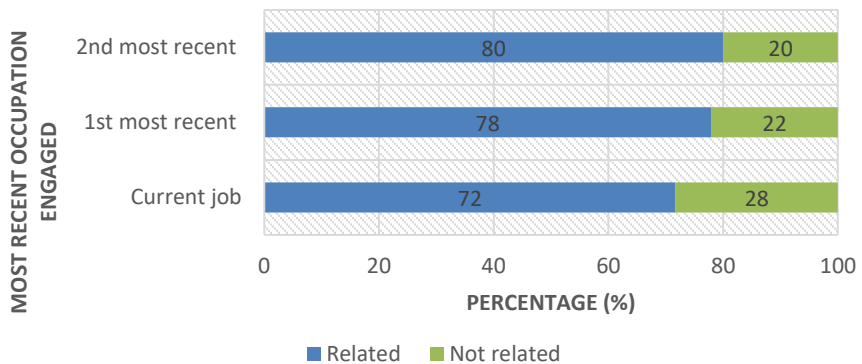
Source: Authors' Survey Data, 2016/17

Figure 5.2: Agricultural Sector Related Occupations Involved since Graduation

The mean number of occupations the graduates were involved in since their graduation was reported to be 2. Minimum number of occupations in which respondents have been involved was one while the maximum number was five different occupations. Figure 5.1 shows the number of total occupations held by graduates since their graduation. Accordingly, 36 percent and 39 percent of graduates had only one occupation and two occupations respectively. Figure 5.2 illustrates the agricultural sector related jobs that graduates were involved in since their graduation. Approximately, a half of the graduates have held in at least one occupation related to agriculture while another 38 percent of graduates have been involved in two occupations related to agriculture showing their absorption to the agricultural sector related activities.

5.3 Employment and Relationship to Agricultural sector

The relationship between employment and the agricultural sector has slightly lessened with the progression of the career trajectory of graduates (Figure 5.3). It was observed that from the second most recent job to the current job, the relationship of the employment to agricultural sector has reduced by eight percent. In the transition period of the career path of graduates, they tend to pay more consideration on job security, income stability and career prospects. Hence, a considerable number of graduates were drawn to better employment openings regardless of its relevance to the agricultural sector.



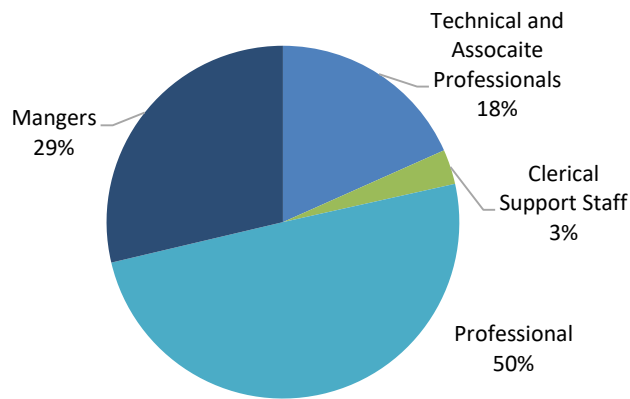
Source: Authors' Survey Data, 2016/17

Figure 5.3: Relationship of the Occupation to the Agricultural Sector

5.4 Occupation Categorization of Agriculture Graduates

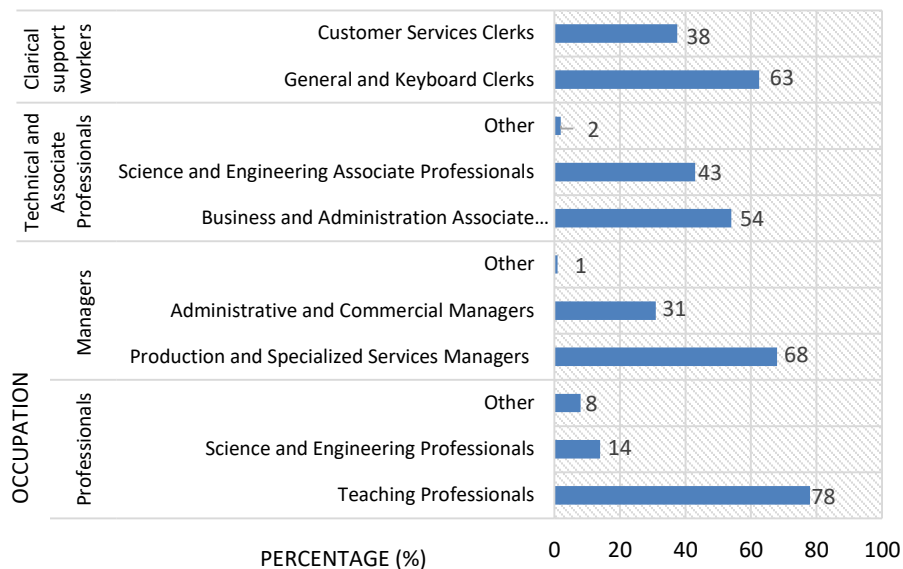
The International Standard Classification of Occupation (ISCO-08) developed by International Labour Organization (ILO) was used to classify occupation categories of graduates.

As shown in Figure 5.4, a half of the graduates were employed as professionals in diverse fields where 29 percent were holding managerial posts with technicians and associate professionals accounting for 18 percent. The least number of graduates were employed as clerical support staff in the banking sector and public organizations.



* Jobs are classified according to the International Standard Classification of Occupation (ISCO-08), ILO
Source: Authors' Survey Data, 2016/17

Figure 5.4: Job Classification of Graduates by Major Occupation Categories



* Jobs are classified according to the International Standard Classification of Occupation (ISCO-08), ILO
 Source: Authors' Survey Data, 2016/17

Figure 5.5: Job Classifications of Graduates by Sub Major Groups of Job Classification

The majority of graduates (78 percent) employed as professionals were reported to be in the teaching professions (Figure 5.5). The main reason for increased graduate involvement in teaching profession was the recent recruitment of graduates into teaching positions of government schools. Science and engineering professionals were also engaged in employments such as agronomists, agriculture consultants and researchers which represent 14 percent of the professionals. The employment category 'Other' (under professionals category) includes various types of professions such as legal, social, cultural and related associate professionals and business and administration associate professions. Though many of these professions were not related to agricultural sector most of the graduates have accessed these jobs utilizing their added professional qualifications other than the bachelors' degree in agriculture.

5.5 Employment Roles and Responsibilities of Agriculture Graduates

5.5.1 Roles and Responsibilities: Related to the agriculture

With the thrust of increasing the farm production in consequence of systemic application of current technology and agricultural research findings, agriculture faculties attached to national universities and agricultural colleges were initially established (Jamaluddin and Alias, 1997). Hence, the operational goals of these early agricultural institutes included the study of agriculture in a scientific way with the participation of farming community who could make use of acquired knowledge and provide training to farmers, extension officers, teachers as well as researchers. With the systemic learning of agriculture, it was anticipating the constant thriving of agriculture production on a sustained basis (Johnson, 1996).

Table 5.1: Agriculture Related Employment Roles of Graduates

Activity	Frequency	(%)
1. Teaching agriculture and related subjects for school children	62	34
2. Assisting/conducting research in agriculture	56	31
3. Teaching/training agriculture for university students	34	19
4. Food processing/production/quality controlling	27	15
5. Conservation of agriculture resources/controlling environmental issues related to agriculture	24	13
6. Provide agriculture extension services to farmers	22	12
7. Managing and controlling farm operations	18	10
8. Organize and conduct seminars/trainings/workshops related to agricultural sector	14	8
9. Livestock management and handling	9	5
10. Provisioning of agriculture related certifications/ assuring the quality of the products and related services	16	9
11. Agricultural product development, agri-business management and marketing	15	8
12. Facilitating agriculture inputs/related services	6	3
13. Other	10	6

*Total sum of percentages is not equal to 100 as respondents have given multiple answers

Source: Authors' Survey Data, 2016/17

As shown in Table 5.1, the leading role of agriculture graduates was teaching agriculture (34%) and related subjects under school education curriculum and supporting undergraduates followed by assisting/ conducting research in agriculture (31%).

As mentioned above, a considerable number of graduates particularly females have taken up teaching occupations under the recent recruitment to the teaching positions in agriculture related subjects. Therefore, the contribution by recently passed-out graduates to secondary level agricultural education system has increased. Further, graduates' participation in research related work in agriculture is found to be another key contributory role in agricultural sector development. Although, many of these employments were not permanent positions graduates have been receiving fruitful and ample opportunities to develop their career through engrossment of such work.

Involvement in food processing, production and quality control of agriculture related products were among the other major contributory fields of graduates for the agricultural sector. Thirteen percent of graduates were involved in the activities on agricultural and environmental resources conservation that render a direct and indirect impacts on agricultural development of the country. Provision of agriculture extension services that address the farmer needs was another important role played by agriculture graduates.

5.5.2 Roles and Responsibilities: Non-Agriculture Related

In addition to the roles played in agriculture related jobs, graduates were involved in diverse non-agricultural activities where they perform different employment role (Table 5.2). Human Resource Management (HRM) (24 %) was the field in which of majority were attached to. Particularly a considerable number of graduates have obtained professional qualification in this particular field, the HRM. Thus they might have quite easy access for the different avenues in the field of HRM.

In addition, 23 percent of graduates were engaged in teaching of non-agricultural subjects in the government schools and other educational institutions. Documentations and documentary handling including logistic management was another widely participated task for graduates recruited for different institutions. Administration related duties, accounting or banking and finance activities were also the other tasks that were handled

by agriculture graduates in non-agricultural fields. Some graduates were reported to have entered the Sri Lanka Administrative Service (SLAS) and Sri Lanka Education Administrative Service (SLEA), so that their main job roles had a direct bearing on the administrative sphere.

Table 5.2: Non-Agriculture Related Job Roles of Graduates

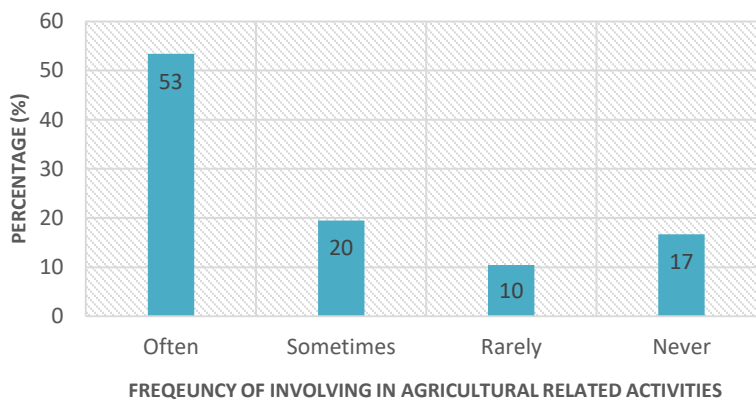
	Description	Frequency	Percentage (%)
1.	Coordination of activities/stakeholders	10	4
2.	Administration related duties	20	8
3.	Human Resource Management	56	24
4.	Logistic Management/documentation and document handling	31	13
5.	Teaching and provision of other trainings to the students	54	23
6.	Accounting/Banking & Financing activities	20	8
7.	Physical Resources Management	12	5
8.	Marketing and Business promotions	6	3
9.	Maintaining/Investigating quality Standards of products	7	3
10.	Handling the environment related issues	11	5
11.	Other	11	5

*Total sum of percentages is not equal to 100 as respondents have given multiple answers
Source: Authors Survey data, 2016/17

Furthermore, certain graduates have established in the accountancy fields as they have obtained professional qualifications from the institutions such as CIMA and Chartered Institute of Sri Lanka. In spite the fact that job roles mentioned in this section have no direct relationship to agriculture those may be indirectly related to the agricultural sector in certain cases.

5.6 Frequency of Involvement in Agricultural Sector Related Activities

As shown in Figure 5:6, more than a half of the graduates (53 percent) were often engaged in agricultural related activities with their current occupation roles indicating their active involvement in agricultural sector development of the country. Another 17 percent of respondents have mentioned that they were not involved in any kind of agricultural related activities as they have been treading on completely different career paths.

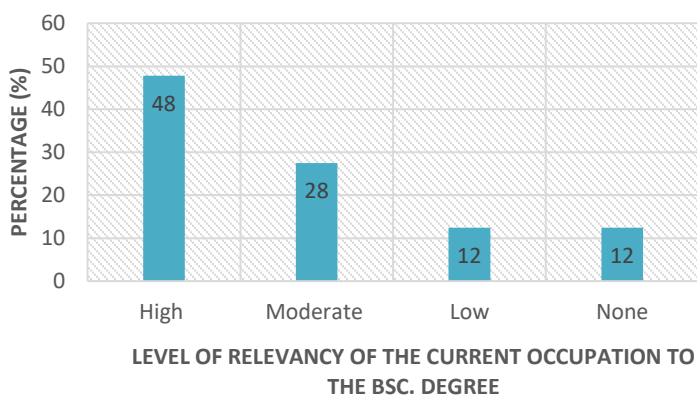


Source: Authors' Survey Data, 2016/17

Figure 5.6: Frequency of Engagement in Agricultural Sector Related Activities when Performing Duties of the Current Occupation

5.7 Relevancy of the Current Occupation to BSc. Degree

As illustrated in Figure 5.7, nearly half of the graduates stated that their current occupation was highly related to their BSc. agriculture degree hence, their subject knowledge was vital to effectively deliver their duties while contributing to agricultural sector development of the country. Another 12 percent claimed to have no connection between their academic orientation and the present occupation.

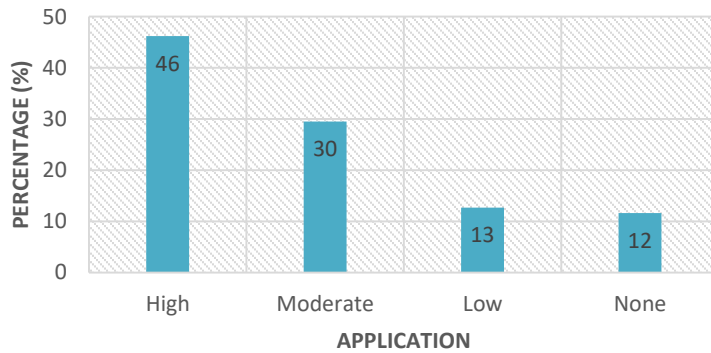


Source: Authors' Survey Data, 2016/17

Figure 5.7: Relevancy of the Current Job to BSc. Degree

5.8 Application of the Agricultural Knowledge Gained Through the Education in the Current Occupation

As derived from the findings, for nearly half of the graduates' applicability of their knowledge to the current job tasks was high while 30 percent have moderately applied their knowledge when performing tasks of the current occupation (Figure 5.8). However, 12 percent of respondents mentioned that subject knowledge they have gained through the agriculture education was not applying of any kind in current occupations since their occupations were not based on the agricultural sector.



Source: Authors' Survey Data, 2016/17

Figure 5.8: Application of Agricultural Knowledge Gained from Education in the Current Occupation

CHAPTER SIX

Constraints of Entering to and Retaining in the Agricultural Related Occupations

6.1 Introduction

This subsection discusses the constraints for agriculture graduates to enter and retain in agriculture related employments inhibiting their contribution to the development of the agricultural sector of the country.

6.2 Constraints of Entering and Retaining in the Agricultural Related Occupations

Human resources produced by the agriculture faculties in Sri Lanka can meaningfully contribute to develop the agricultural sector by addressing the prevailing gaps and issues. Hence, this study identified constrains faced by agriculture graduates when entering to and retaining in the agricultural related jobs. The public sector had been the most promising job provider for the agriculture graduates in Sri Lanka a few decades back, particularly before the other sectors have surpassed the agricultural sector in terms of GDP contribution. Further to that, the public sector job allocation fell short in accommodating the exodus of agriculture graduates every year.

Lack of employment opportunities in the public sector was a major constraint indicated by 29 percent of graduates as the first ranked obstacle, in entering and retaining in the agricultural sector (Table 6.1). This brings to light that still recent graduates well-prefer to be involved in very limited public sector jobs much related to agricultural sector.

Gender discrimination persisting in recruitment processes and gender related issues when performing duties have been identified as serious impediment which ranked under the 2nd major constraint by 13 percent of graduates. The female graduates alleged that, discrimination was prevalent to a certain degree even in the recruitment processes in the private sector occupations.

Table 6.1: Constraints of Entering and Retaining in Agriculture Related Employments

Major Constraint	Rank		
	1 st priority	2 nd priority	3 rd priority
1	Less employment opportunities related to agriculture in public sector 29%	Less attractiveness, hardships and poor facilities of the jobs 23%	Less attractiveness, hardships and poor facilities of the jobs 25%
2	Gender discriminations in recruitment process and gender related issues when performing duties 13%	Less employment opportunities related to agriculture in public sector 13%	Inadequacy of salary /less income 11%
3	Less attractiveness, hardships and poor facilities of the jobs 11%	Gender discriminations in recruitment process and gender related issues when performing duties 12%	Lack of relevance between the majoring modules and the needs of the job market to getting a job related to agriculture 10%
4	Inadequacy of salary/less income 11%	Inadequacy of salary/less income 12%	Gender discriminations in recruitment process and gender related issues when performing duties 10%
5	Lack/weakness of practical skills for performing duties 8%	No bureaucratic/ political connections 9%	No bureaucratic/ political connections 10%

Source: Authors' Survey Data, 2016/17

Less attractiveness, hardship and poor facilities in performing employment roles were recorded as other major challenges for graduates in making their contribution to the agriculture. There were ranked as second and third key obstacles. As most of the employments associated with agricultural sector have to be performed usually in remote areas with poor facilities, graduates were reluctant to work under such conditions especially for a long period of time.

CHAPTER SEVEN

Suggestions for Enhancing Agriculture Graduates' Contribution to the Agricultural Sector: Graduate Perspective

7.1 Introduction

This chapter describes the strategies and recommendations to enhance agriculture graduates' contribution towards agricultural development of the country according to the perspective of the graduates'. It also presents the suggestions of the graduates for the improvement of undergraduate academic programmes based on their experience to increase agriculture graduates' contribution towards agricultural sector.

7.2 Appropriate Strategies to Increase Agriculture Graduates' Contribution towards Agriculture Development of Sri Lanka

Increased graduate absorption into agricultural sector can be a catalyst to trigger the development of the agricultural sector of the country. Therefore, in this study, graduates were asked to provide suggestions and possible strategies to enhance graduate absorption into the agricultural sector and to overcome constraints encountered in serving the agricultural sector.

Table 7.1, shows the proposed strategies to increase agriculture graduate absorption level into the agricultural sector according to the perspectives of graduates.

Establishing and maintaining genial working conditions with lack of restrictions, authority for decision making power and motivational environment with ensuring indispensable facilities were highly considered as positive strategies to absorb graduates into agricultural field in more productive means. This claim was endorsed by more than half of the responded graduates. Timely intervention in mitigation and resolution of issues related to agriculture and more freedom to work were considered by graduates as imperative factors for performing employment roles with much efficiency. Performance evaluation and appreciation has also been identified as favourable moves for agriculture graduates to retain in the agriculture related fields. Provision of sufficient facilities to accomplish job tasks is also an important requirement to attract graduates into agricultural sector.

Table 7.1: Proposed Strategies to Increase Absorption Level of Graduates into Agriculture Related Jobs Based on the Current Constraints: A Graduate Perspective

Suggestions/Recommendations	Frequency	Percentage (%)
1. Establish proper working conditions (ensuring freedom, decision making power motivation and indispensable facilities)	152	54
2. Provision of fair, sufficient and attractive remuneration	133	48
3. Provide opportunities to enhance necessary skills and knowledge through training	128	46
4. Set up proper job opportunities and job duties targeting agriculture graduates	48	17
5. Allocate duties of the jobs with clear targets and responsibilities	47	17
6. Encourage agricultural related research and innovations/ utilization of those for the development of agricultural sector on favourable grounds to use of them	35	13
7. Guide/encourage/facilitate graduates towards agro-entrepreneurship	24	9
8. Make positive attitudinal changes regarding agricultural sector and agricultural sector related jobs	23	8
9. Other	15	5

*Total sum of percentages is not equal to 100 as respondents have given multiple answers
Source: Authors' Survey Data, 2016/17

Provision of a fair remuneration package including a sufficient and attractive salary plus other fringe benefits could be a good strategy to attract agriculture graduates to the agricultural field as proposed by nearly half of the graduates. Although some graduates have begun their career trajectory in the agriculture field they were inclined to move away for a better trade-off by shifting their field of employment. This factor was a predominant concern among graduates when taking into account diverse facilities prevailing in the sectors other than agriculture.

As per graduates' view, provision of opportunities to enhance necessary skills and knowledge (appropriate training) needed for effective performance of their job roles was considered to be another vital factor (46

percent) to increase the level of absorption into the agricultural sector. As the graduates are still representing the young generation, integrating new technology and innovations in agriculture and at the same time adopting them to the field level situation is highly anticipated. Further their expectations comprise, sharpening skills and knowledge to serve better in the agricultural field in a more technically sound and efficient manner. Opportunities to bring up knowledge to date both theoretically and practically, get overseas exposure and higher education opportunities were the major areas where graduates are further concerned about.

As proposed by 17 percent of graduates, delegation of duties of the employments with clear targets and responsibilities under a proper monitoring system was another strategy that can be used to increase the absorption of agriculture graduates into the agricultural sector.

Creation of job opportunities targeting agriculture graduates and setting up of impartial recruitment processes for agricultural related jobs were proposed by 17 percent of graduates as another important approach to increase graduate absorption level into the agricultural sector. It was observed that certain positions related to employments in agricultural sector were not compatible with the educational qualifications of graduates, it is suggested to create employment positions to align with the agriculture education system and development priorities of the country.

Promotion of agriculture related research and innovations and application of such innovations are also encouraging factors to attract graduates into the field, so that it would immensely be effective to the agricultural development of the country. Despite the efficiency of most of the graduates, it is debatable whether they are knowledgeable and skillful enough to emerge as agro-entrepreneurs only a very few were reported as agro-entrepreneurs. Therefore, scaling up agro business oriented training programmes and guiding them to become agro-entrepreneurs was a promising approach as suggested by the graduates.

7.3 Important Areas Need to be Included in Academic Programmes

Curriculum plays an integral role in the education paradigm that bridges up theory and application to achieve development targets in any field. In this study certain questions were designed to draw insights of agriculture graduates with regard to enhancement of academic programmes which will

be useful to broaden their contribution to agricultural sector as a more productive and efficient service provider well versed in his/her trade. Table 7.2 shows the suggestions made by graduates with regard to the enhancement of academic programs of agriculture.

Experiential and practical learning both on and off campus is one of the learning methods for sustainable agricultural education (Bawden, 1990; Francis *et al.*, 2001; Parr *et.al.*, 2007). As shown in Table 7.2, fifty-seven percent of graduates emphasized that the academic programs should be more focused on providing ample opportunities for practical learning. Increase of time duration for practical sessions, providing opportunities to obtain first-hand knowledge through exposure to real world farming operations on farmer fields, assessing and evaluation of undergraduates' practical skills by using a mechanism similar to standardized paper-based assessments, increasing the number of field visits to get more practical experience were some of the useful suggestions made by the graduates. Further, addressing issues related to shortage of equipment and facilities obligatory for practical sessions was also important to get better learning outcomes as suggested by the graduates.

The need of incorporating new subjects to existing curricula enabling them to be compatible with the modern job market and future demand from the agricultural sector was stressed by 32 percent of the graduates. When the agricultural sector experiences a transition from the traditional to the modernized form of its practices and conducts, the demand for job market also changes drastically. Hence, a demand driven supply should be assured and produced by the agriculture education system to meet the expectations of the sector. Some of the modules suggested by graduates include agro-entrepreneurship (agripreneurship) and business management, plantation management, sustainable and climate smart irrigation, innovative income generation avenues such as agro-tourism and traditional and eco-friendly agriculture practices.

On the job training was also considered to be an important section of the curriculum of agriculture education by a considerable number of the respondent graduates. Accordingly, provision of quality on the job training opportunities for undergraduates and increasing the time duration were identified as significant areas to be included into academic programs of agriculture. Enhancement of the quality of the industrial training program would support graduates to be absorbed into the agricultural related employments without much exertion.

Table 7.2: Suggestions to Enhance Academic Programme/Curriculum for Agriculture Education by the Graduates

Description	Frequency	(%)
1. Provision of more practical learning opportunities within the academic programme	158	57
2. Introduce/Incorporate new subjects to the curriculum compatible with the modern job market requirement and demand articulation	90	32
3. Provision of on the job training opportunities for undergraduates/ increase the time duration/ensure the quality of on the job training	75	27
4. Broaden the knowledge on new innovations and technical expertise	28	10
5. Implementation of programmes for skills and professional development of graduates	25	9
6. Build strong linkages with private sector/other relevant organizations to provide jobs and training opportunities	18	6
7. No change needed	16	6
8. Provide comprehensive and complete knowledge on majoring modules	14	5
9. Provide practical and theoretical knowledge on a balanced approach	13	5
10. Other	17	6

*Total sum of percentages is not equal to 100 as respondents have given multiple answers

Source: Authors' Survey Data, 2016/17

Broadening the knowledge on new innovations and technical expertise in line with the technological enhancement in agriculture is another imperative area as highlighted by the graduates. Further, proper implementation of the programmes for skills and professional development of graduates was also mentioned as an area that should be improved within the agriculture education programmes. As suggested, such programmes should comprise labour market targeted skill development, English language proficiency, leadership training and tasks oriented computer applications.

Other areas suggested by the responded graduates to be considered in academic programme were building strong linkages with the private sector and other relevant organizations to provide jobs and training opportunities,

provision of practical and theoretical knowledge in a balanced approach and provision of comprehensive knowledge on majoring modules. Only a small segment of the respondent graduates accounting for six percent was in the view that the existing agriculture education programmes need not to have any changes as they are content with requisite knowledge in overall aspect.

CHAPTER EIGHT

Summary, Conclusion and Recommendations

8.1 Summary of the Findings

Majority of the agriculture graduates of the sample have obtained professional qualifications in diverse fields apart from their BSc degree. In contrast, a great majority of graduates have not received any kind of agriculture related training for knowledge and skill advancement in the field of agriculture after completing their academic programmes in agriculture faculties.

The overwhelming majority of the graduates were employed, indicating the high employment rate among them. The employment rate was slightly high among the male graduates and most of the graduates were engaged in permanent employments on a fulltime-basis.

Inability to find a better occupation due to lack of choice was the foremost reason of the graduates for retaining the current occupation. The compatibility with educational qualifications and skills, personal interest or preference to the occupation and accessibility for career development were among the other major reasons for graduates to make their occupation choice.

Key reason for remaining unemployed was difficulties in finding an occupation compatible with the education qualifications of graduates. In addition, absence of bureaucratic and political influence, family constraints and engagement in higher education were among the other reasons for being unemployed.

The recent employment of most of the employed graduates was linked with the public sector. The key factor for the high involvement in the government sector was recent recruitments to teaching positions in public schools in the fields of agriculture and other related sciences.

With regard to gender distribution in the different employment sectors, the female representation in public sector employments has been nearly three times higher than the male involvement in public sector employments. On the contrary, in the private sector occupations the gender ratio was completely opposite. Female participation in the semi-government sectors was also higher than the male representation.

Agriculture graduates' relationship between the employment and the agricultural sector has slightly lessened with the progression of the career trajectory. In the transition periods of the career, graduates have moved into occupations with better prospects disregarding its relevancy to the agricultural sector.

Half of the graduates were employed as professionals in diverse fields while 29 percent of graduates were in managerial positions and 18 percent were technicians and associate professionals. The least number of graduates were employed as clerical support staff in banking and the public sector organizations.

A majority of the graduates employed as professionals, have entered the teaching profession. Further, employments which have a direct relationship with agriculture such as agronomists, agriculture consultants and researchers constitute a considerable segment of the professionals.

The leading role of agriculture graduates was teaching agriculture and related subjects for school children and university students followed by assisting/conducting research on agriculture. The contribution by graduates to secondary level agriculture education system in Sri Lanka has increased due to the recent recruitments for the teaching staff of schools.

In addition to agriculture related job roles, considerable segment of agriculture graduates was engaged in diverse activities that bear no direct relationship with the agriculture. Human Resource Management, teaching non-agricultural subjects in schools and other educational institutions, documentation and document handling including logistic management were among the tasks executed by agriculture graduates in non-agricultural fields.

Majority of graduates were often engaged in agriculture related activities within their current job roles indicating their positive involvement in the agricultural sector. According to nearly half of the respondents their current job was highly related with their BSc. Agriculture degree, where the knowledge could effectively be utilized to deliver their job responsibilities by contributing to the agricultural sector development of the country. Forty-six percent of the graduates reported that in the current job tasks their knowledge is positively applied.

Limited employment opportunities available in the public sector have been the major constraint to enter and retain in the agricultural sector related

employments. Gender discrimination operating at recruitment level and gender related issues when performing duties, less lucrative nature, hardships and poor facilities when performing the job roles were referred to as major impediments in the performance of the duties related to agriculture.

Provision of fair remuneration would be a good strategy to attract agriculture graduates to the agricultural field. The other major suggestions of the graduates to increase absorption of graduates into the agriculture related occupations include provision of opportunities to enhance necessary skills and knowledge needed to perform job roles, provision of sufficient facilities to scaffold them accomplish employment tasks, delegation of duties with the clear targets and responsibilities under a proper monitoring system, creating appropriate employment opportunities targeting agriculture graduates, setting up is an unbiased recruitment process for agriculture related occupations and facilitate them to become agro-entrepreneurs.

According to the graduates' point of view academic programmes should be focused on providing more practical learning opportunities in agriculture. It is also important to incorporate new subjects to the curricula enabling them to be compatible with the demand of the modern job market and future demand from the agricultural sector.

Enhancement of the quality of on-the job training, broadening knowledge on new innovations and technical expertise, building up strong linkages with the private sector and the other relevant organizations to access jobs and training opportunities, provision of practical and theoretical knowledge in a balanced approach and provision of comprehensive and complete knowledge on majoring modules were other areas suggested by the graduates to be considered in academic programmes in agriculture.

8.2 Conclusion

Occupational rate is much higher among the recent agriculture graduates and their participation in the agricultural sector and allied areas is also at a much impressive level despite the nature of occupation and level of responsibilities encountered. Mainstream of graduates were engaged in professional occupations followed by managerial level occupations which are well-regarded.

Majority of graduates were often engaged in agricultural related activities within their current job roles indicating their positive involvement in agricultural sector in the beginning of their career. Female participation was recorded overwhelmingly high in teaching positions increasing the graduates' contribution to secondary level agriculture education system in Sri Lanka with recent recruitment process in the labour market. Yet, available opportunities to utilize their full potential particularly for the agriculture development are somewhat challenging.

With complex individual desires, preference and other socio-economic factors coming into play there is a shift in agriculture graduates job-orientation towards more lucrative and convenient avenues away from agriculture. The progression of the career trajectory of graduates there is a declining trend in involvement in agriculture related jobs regardless of the relevancy. In overall aspect, the dwindling importance of agricultural sector in the national economy per se plays a decisive role in this paradigm shift. Further, linkages in between the development priorities of the country and agriculture education are crucial to determine graduate's contribution towards agricultural development of the country.

8.3 Recommendations

Strengthening the Linkages with the Agriculture Policy, National Development Priorities, Education System, and Labour Market Demands of the Country

There is a massive void in between the education, labour market needs, national policies and the development priorities of the country. This is true for the agricultural sector similar to certain other sectors of the country. Although, employment rate of agricultural graduates admirably high, their contribution to the agricultural sector in the country need to be flourished further.

Hence, the agriculture education should be strongly aligned with the development priorities and labour market needs of the country to obtain a fruitful outcome of the spending on education by increasing their absorption into the agriculture sector more effective way. Therefore, building strong and meaningful linkages with national agriculture education system and agricultural sector of the country with the proper needs assessment should be taken into consideration.

Setting up Clear and Promising Paths for Accessing Appropriate Employments

Attention should be paid to create clear paths and opportunities for graduates particularly in the beginning of their career enabling them to develop as agriculture scientists/professionals. It is important to pay attention to lessen the prevailing barriers to enter public sector occupations that are well suited for agriculture graduates. Particularly, conducting competitive examinations for recruiting agriculture graduates to the relevant public services needs immediate focus (i.e. Sri Lanka Agriculture Service). Timely recruitment and promotion process are also among important factors that to be focused by the respective authorities allowing capable graduates to extend their utmost contribution towards development of agricultural sector.

It is recommended to strengthen the linkages with the public sector, private sector and other relevant organizations to provide occupations and training opportunities for agriculture graduates enabling them to explore agriculture sphere. This would create better pathways for accessing more appropriate labour market opportunities. Expand the duration and enhance the quality of industrial training is one area to be more focused. Further strengthening the career guidance programs would be also supported to broaden graduate's awareness on promising employment avenues related to the agriculture sector.

Encouraging and Facilitating Agro-entrepreneurship

There is great potential for graduates to become agro-entrepreneurs and thus can contribute immensely for the development of the agricultural sector while uplifting the farming community and national economy. This enables graduates to harvest their full potential while exploring their own perceived opportunities with the right directions.

A programme/a scheme targeting the young agro-entrepreneurs/agripreneurs, can be developed introducing promising opportunities, a clear pathway, guidance, financial facilities and market opportunities to enter the agriculture related enterprises. This can be arranged for the fresh graduates with the collaboration of the universities, the Ministry of Agriculture, financial institutions, the private companies (both local and international) and other related personnel and institutions. Improve food supply and nutrition, value addition to underutilized agricultural products/crops, technological development, expand commercial orientation of farming activities, re-brand agriculture through high quality products, enhance the quality of the value chain and grab the export market

opportunities among the possible avenues to explore for those young entrepreneurs. Further young graduates can be adopted and used knowledge gained from various academic modules in innovative ways furthering their capacity to be successful.

With the responsible intervention, bare or underutilized lands owned by the government and private parties can be provided to the graduates interested in agri-business/farm operations on contract agreements, a move which will fetch mutual benefits to both sides creating a win-win situation. Further interest free loans or soft loans can be provided to those willing to start agri-business operations or to develop the existing ones.

Enhance Practical Learning Opportunities

Experiencing a practical situation with the meaningful understanding will equip graduates with a better orientation to serve the agriculture sector and rural community. Provision of opportunities to broaden their practical experience on agriculture practices and application of theoretical knowledge as appropriate is a vital need even though it is somewhat challenging task.

Providing more communicating awareness of folkloristic language with regard agricultural practices of the country and values behind the traditional practices would be important, as it is somewhat difficult to build a sound relationship without knowing certain fundamental things appealing to the ground level conditions and local farmers.

Harnessing the Capacity through New Innovations and Technological Knowhow

In the context of the education system of Sri Lanka, university admission process is closely connected with the academic performance rather than the personal interests on the relevant subject area. Therefore, personal preference also should be considered to a great deal when admitting freshers' to the agriculture faculties to enhance the graduates' absorption level into the agriculture sector.

In this view, widening the knowledge on new innovations and technical expertise is vital to attract young graduates to the agriculture field. The existing nature of occupations is not much acclaimed by the graduates. Further provide opportunities to obtain continuous training and update knowledge should be ensured for efficient service delivery to provide precise benefits to the agricultural sector.

SECTION TWO

**ABSORPTION OF DIPLOMA HOLDERS
INTO THE AGRICULTURAL SECTOR
OF SRI LANKA**

CHAPTER NINE

Demographic and Educational Background of Diploma Holders of Agriculture

9.1 Introduction

The chapter reviews the respondents' demographic and education profile with the focus on gender, age, marital status, ethnicity, employment status and education attainments of diploma holders.

9.2 Demographic Background of the Diploma Holders of Agriculture

From the total sample, 252 of diploma holders responded to the survey with the 96 percent of response level. Demographic attributes of the sample diploma holders are shown in Table 9.1. In terms of age, the respondents between the 26-27 years comprised 43 percent of the total while age group 28-29 represents 30 percent of the total. Mean age of the sample was 27.8 while maximum age and minimum age of the sample population was 40 and 23 respectively.

Majority of the diploma holders (67 percent) were males and the rest were females since female participation was low for the diploma programme in agriculture compared to their male counterparts. One third of the diploma holders were married and the majority were unmarried. The larger majority of the diploma holders were Sinhalese while Tamils, Catholics/Christian and Islam were accounted for only 12 percent of the total. There was equal distribution of the sample diploma holders who graduated during the period of 2012-2015.

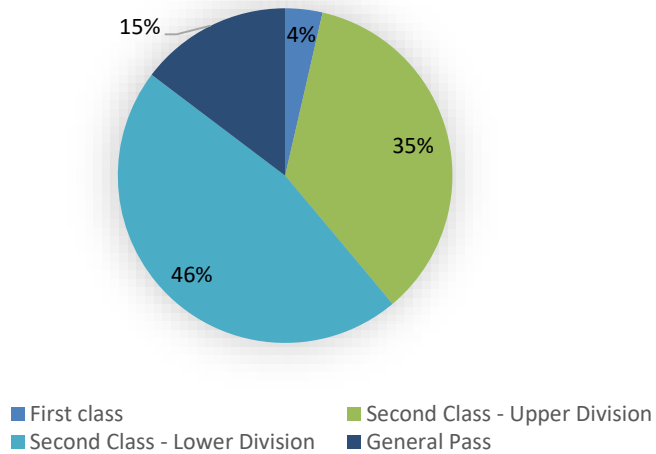
Table 9.1: Demographic Profile of the Respondents

Variable	Frequency	Percentage (%)
Gender		
Male	169	67
Female	83	33
Age		
Age =<25 years	35	14
26-27 years	108	43
28-29 years	75	30
=>30 years	34	13
Marital Status		
Married	73	29
Unmarried	179	71
Ethnicity		
Sinhalese	221	88
Tamil	24	9
Islam	7	3
Religion		
Buddhist	221	88
Hindu	21	8
Catholic/Christian	3	1
Islam	7	3
Year graduated		
2015	63	25
2014	61	25
2013	64	25
2012	64	25

Source: Authors' Survey Data, 2017

9.3 Educational Attainment of the Diploma Holders

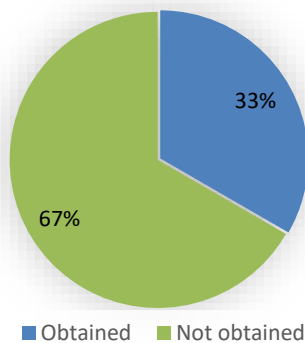
Figure 9.1 illustrates the educational achievements of the diploma holders in the completion of diploma programme in Agriculture in terms of the grade they obtained. As depicted below only four percent of the sample diploma holders have obtained first class while nearly half the samples (46 percent) have obtained second class lower division.



Source: Authors' Survey Data, 2017

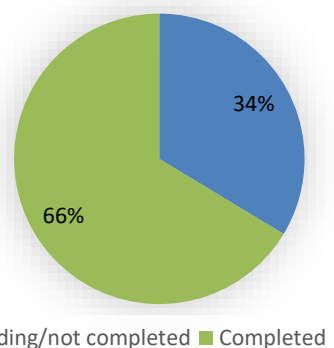
Figure 9.1: Class Obtained by the Sample Diploma Holders

Receiving certain qualifications positively support to enhance knowledge and improve the standards within the workforce. Figure 9:2 depicts the other programmes followed by diploma holders with the intension of acquiring additional qualifications other than their agriculture diploma. Accordingly, so far 67 percent of the agriculture diploma holders have not followed any programme except their agriculture diploma. However, only 33 percent of diploma holders have followed different programmes as the rewards that go with such qualification are significant.



Source: Authors' Survey Data, 2017

Figure 9.2: Obtaining/ Following of Qualifications other than Diploma in Agriculture



Source: Authors' Survey Data, 2017

Figure 9.3: Completion of Qualifications

As Figure 9.3 shows the majority of the sample diploma holders have completed the programmes followed by them other than diploma in agriculture, while 34 percent of them have not yet obtained the qualifications.

A considerable number of the sample agriculture diploma holders (60 percent) has completed training in the field of agriculture. From them 40 percent have received training not related to agriculture (Table 9:2).

Table 9.2: Type of Qualifications

Type of Qualification	Frequency	(%)
Degree/Diploma programmes in agriculture	29	30
Degree/ Diploma programmes – other than agriculture	10	6
Training related to agriculture	25	24
Other training other than agriculture	46	40

*Total sum of the percentages is not equal to 100 since some respondents had given multiple answers
Source: Authors' Survey Data, 2017

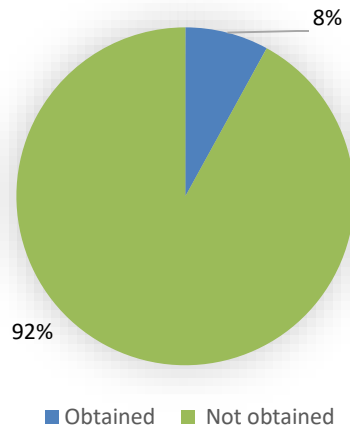
Nearly half of the diploma holders (49%) have followed agricultural related programmes (Table 9.3). Information technology related training was also pursued by a considerable segment of sample diploma holders. However, there is possibility to connect certain programmes such as Information Technology and Management to agriculture related work in direct and indirect way.

Table 9.3: Area of Training/Academic Programmes of the Sample Diploma Holders

Area of training/academic programmes	Frequency	(%)
Agriculture related	54	49
Information Technology	37	34
Management	5	5
Public Health and Nursing	5	5
Other	9	8

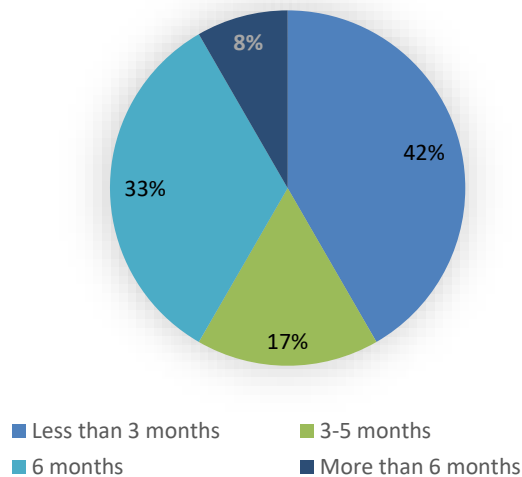
*Total sum of the percentages is not equal to 100 since some respondents had given multiple answers
Source: Authors' Survey Data, 2017

As illustrated in Figure 9.4, a significant number of the diploma holders have not received any training related to agriculture after completing their diploma programmes.



Source: Authors' Survey Data, 2017

Figure 9.4: Receiving of Training in the Field of Agriculture after Obtaining the Diploma in Agriculture



Source: Authors' Survey Data, 2017

Figure 9.5: Duration of the Training Received by the Diploma Holders

Further as shown in Figure 9.5, when the time duration of the trainings received, 42 percent of diploma holders followed agriculture related training programmes which are of less than three months duration. Only eight percent of the diploma holders were benefited by agriculture related long term training programmes running for more than six months period.

CHAPTER TEN

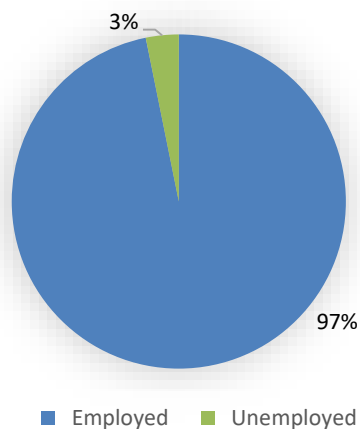
Nature of Employability of the Diploma Holders

10.1 Introduction

This chapter describes the nature of employment of the respondents focusing on employment status, reasons for selecting the current employment and underlying reasons for unemployment among diploma holders in agriculture.

10.2 Employment Status of the Diploma Holders in Agriculture

According to national level statistics, unemployment level is considerably high among the youths below 30 years of age (Department of Census and Statistics, 2018). However, as illustrated in Figure 10.1, an overwhelming majority of the diploma holders were employed while only three percent remaining with no jobs showing the high employment rate of diploma holders in agriculture. All the unemployed diploma holders were females and employment level of males was recorded 100 percent. The reasons for their unemployment are discussed elsewhere in this chapter.



Source: Authors' Survey Data, 2017

Figure 10.1: Employment Status of the Respondents

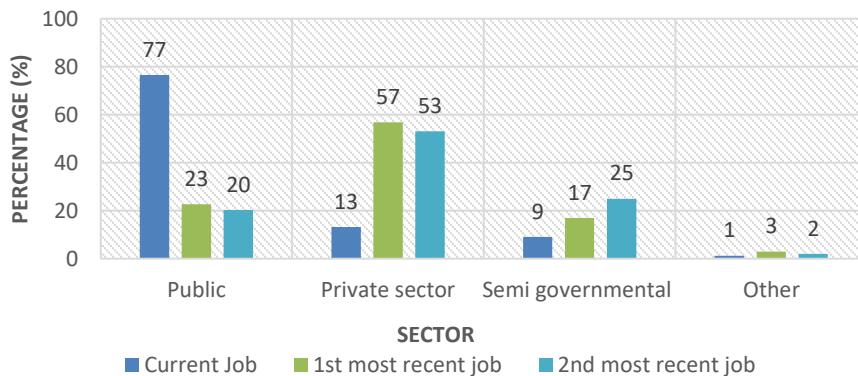
As Table 10.1 indicates, majority of the respondents have secured fulltime and permanent employment opportunities even though there is a high competition in the labour market among the youths in Sri Lanka.

Table 10.1: Nature of Employment of the Diploma Holders in Agriculture

	Permanent		Temporary		Total	
	Frequency	%	Frequency	%	Frequency	%
Fulltime	236	98	6	2	242	99
Part-time	0	0	2	100	2	1
Total	236	97	8	3	244	100

Source: Authors' Survey Data, 2017

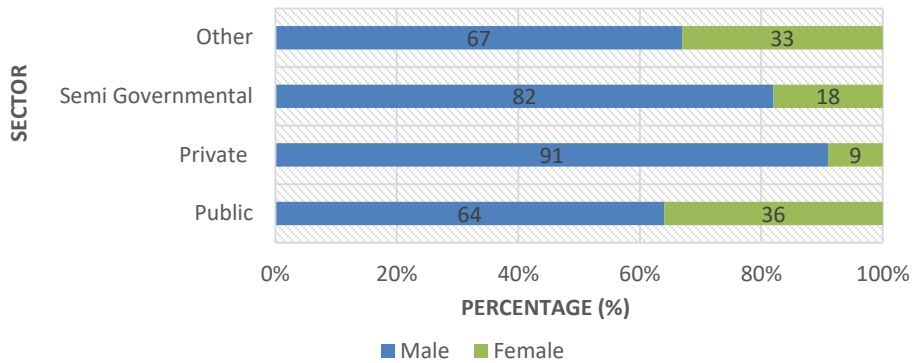
As presented in Figure 10:2, majority of the sample diploma holders have taken up employment in the public sector followed by the private and semi-government sectors. Only a handful of diploma holders were engaged in self-employment or business activities. When looking at the occupational trajectory of the diploma holders, there is a marked tendency of moving to the public sector from private sector. The main reason for this trend could be absorption of diploma holders into the national extension service.



Source: Authors' Survey Data, 2017

Figure 10.2: Sector of the Employment

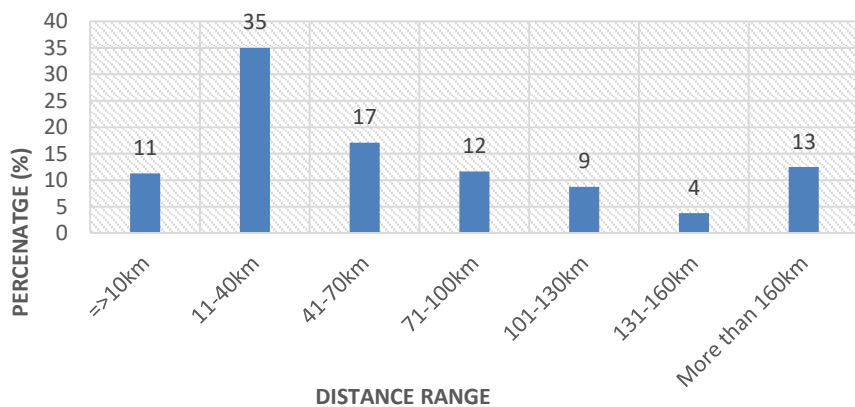
As shown in Figure 10.3, male diploma holders dominated all sectors. In the private sector female representation was only nine percent. In addition, two third of the public sector employees were males and female representation was less than their male counterparts. The reason for this trend is not rather clear however, gender discrimination in the recruiting process and difficulties encountered in performing duties become of femininity could be linked with this trend. In overall aspect the nature of employment in the private sector agriculture related occupations may have led to diminish the female contribution.



Source: Authors' Survey Data, 2017

Figure 10.3: Sector of the Current Employment by Gender

Figure 10.4 shows the commuting distance of the diploma holders in agriculture. Mean commuting distance for the sample diploma holders was 72.96 km. Minimum commuting distance was 0 km as they were based in the work place. Maximum commuting distance was 350 km. Standard deviation of the commuting distance was 71.6. As derived from the survey, one fourth of the sample diploma holders' commuting distance was more than 100km. Further only 10 percent of the respondents' residence were located within the 10 km from their work place while 35 percent of them have to cover a commuting distance of between 11- 40 km.



Source: Authors' Survey Data, 2017

Figure 10.4: Commuting Distance of Diploma Holders

10.3 Determining Factors for Employment

Major determinants of selecting the current employment of the diploma holders were explored. As depicted in Table 10.2, for plenty of the sample diploma holders, compatibility with their educational qualifications and skills (70%) was first prioritized/ranked reason for selecting the current employment followed by job being related to agricultural sector (46%) and being in the public sector employment (36%).

According to 70 percent of the diploma holders, direct relationship of employment to the agricultural sector was the key reason for selecting the current employment that has identified under second priority followed by being a public sector employment (52%) and compatible with educational qualifications and skills (28%)

Table 10.2: Reasons for Selecting the Current Occupation

Reason	Rank		
	1st Priority	2nd Priority	3rd Priority
1.	Compatible with educational qualifications and skills (70 %)	Due to the job related to agriculture sector/ agriculture (70%)	Being a public sector occupation (55%)
2.	Job being related to agricultural sector (46 %)	Being a public sector occupation (52%)	Job being related to agricultural sector (55%)
3.	Being a public sector occupation (36%)	Compatible with educational qualifications and skills (28%)	Compatible with educational qualifications and skills (21%)
4.	Being the first opportunity that came my way/no choice (25%)	Working place is in close proximity to office (10%)	Job security is high (10%)

Source: Authors' Survey Data, 2017

In overall perspective of the diploma holders getting a public sector job was among the major drives for selecting the current employment. Particularly entering the extension service of the Department of Agriculture was preferred by many of the diploma holders. Entitlement to the government pension scheme and social recognition of being a government employee were also considered to a great extent by the diploma holders when

selecting the current job. Job security could be identified as one of the major underlying reasons for remaining in the public sector employee regardless of the lesser remuneration offered for the public sector jobs compared with those in the private sector.

10.4 Reasons for Unemployment

As discussed unemployment rate was very low among the diploma holders in agriculture and all the unemployed were agriculture. Mismatch between the available job opportunities and qualifications, high competitiveness for available jobs and lack of job opportunities were among the key obstacles that have led female diploma holders to be unemployed (Table 10:3).

Table 10.3: Reasons for Unemployment

Reason	Rank		
	1 st Priority	2 nd Priority	3 rd Priority
1.	Mismatch between the available job opportunities and qualifications (38%)	High competitiveness for available jobs (38%)	High competitiveness for available jobs (38%)
2.	Lack of job opportunities available (25%)	Lack of job opportunities available (25%)	Poor grades for the subjects (25%)
3.	Nor receiving of job related to agriculture (25%)	Engaging higher studies (25%)	Mismatch between the available job opportunities and qualifications (25%)

Source: Authors' Survey Data, 2017

As table describes, mismatch between the available job opportunities and qualifications (38%) were the major reasons for unemployment identified as first ranked reason. High competitiveness for available jobs was the major reason under both second and the third priorities. High competition of the available jobs was particularly disadvantageous to women due to diverse causes that consists hardships of the job, less-suitability for women, employer preference and male domination in certain jobs.

CHAPTER ELEVEN

Absorption of Diploma Holders in Agriculture into the Agricultural Sector

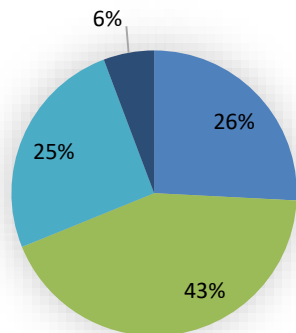
11.1 Introduction

This chapter discusses to what extent the diploma holders have absorbed into the agricultural sector of Sri Lanka. This situation was identified by analyzing the occupational history covering the most recent occupation, their current occupational roles, a relevance, application of knowledge and frequency of involvement in agricultural sector within the recent occupation.

11.2 Occupation History Analysis

The findings indicate that the level of participation in the agricultural sector was remarkably high among diploma holders in agriculture. Mean jobs occupied by diploma holders in agriculture was 1.996 while mean of agriculture related jobs occupied after obtaining the diploma in agriculture was 1.939. Minimum number of total jobs and agriculture related jobs occupied by the diploma holders was one while maximum number was three.

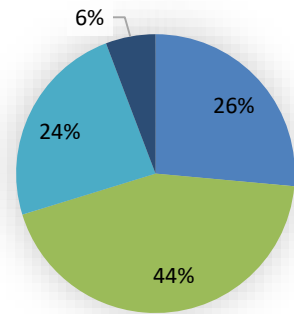
Figure 11.1 and 11. 2 illustrate the number of total employment occupied by the diploma holders and total number of agriculture related employments occupied by them. As depicted in the following figures, there was no significant difference between the number of total employment occupied and the number of agriculture related employments occupied by the diploma holders.



■ One Occupation ■ Two Occupations
■ Three Occupations ■ Not relevant

Source: Authors' Survey Data, 2017

Figure 11.1: No. of Occupations Involved since Completion of Diploma in Agriculture

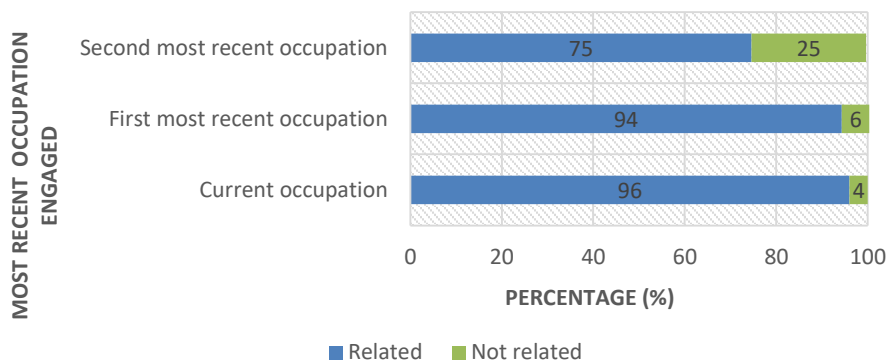


■ One Occupation ■ Two Occupations
■ Three Occupations ■ Not relevant

Source: Authors' Survey Data, 2017

Figure 11.2: No. of Agriculture Related Occupations Involved since Completion of Diploma in Agriculture

Findings illustrate that the current occupation of the overwhelming majority (96 percent) of the diploma holders have a direct relationship to the agricultural sector while 94 percent of the first most recent and 75 percent of second most recent occupations are also related to the agricultural sector (Figure 11.3). When looking at the occupation pattern of the diploma holders it is noticed that, with the progression of their career taken to upturn tendency to participate in agriculture related occupation.

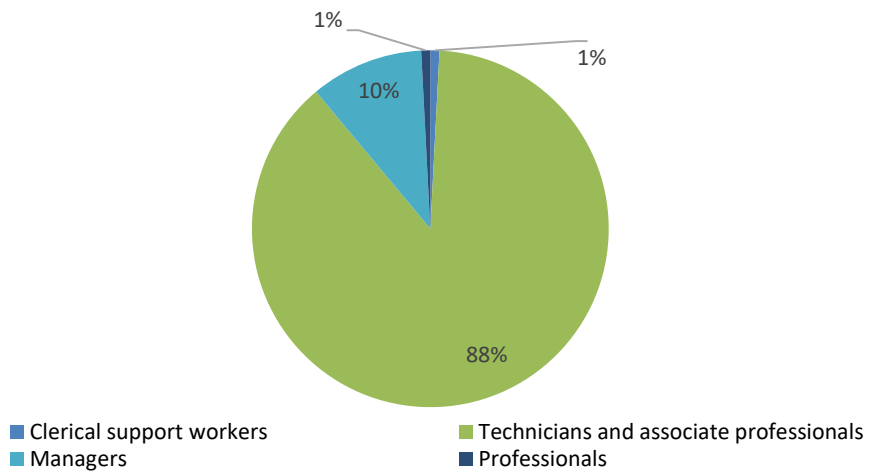


Source: Authors' Survey Data, 2017

Figure 11.3: Most Recent Occupations and their Relationship to Agriculture

11.3 Occupation Categorization of Diploma Holders in Agriculture

As illustrated in Figure 11.4, a great majority (88 percent) of the diploma holders represented the occupational category of technicians and associate professionals. In addition, job category of managers accounted 10 percent of the diploma holders. Particularly many of them were engaged in extension service related occupations falling into technical and associate professions.

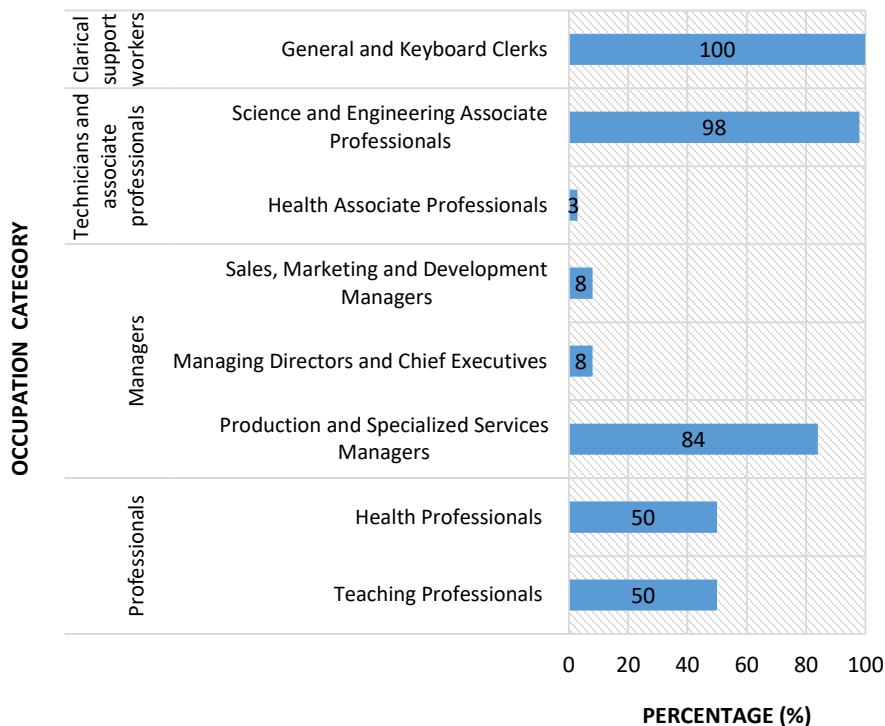


* Occupations are classified according to the International Standard Classification of Occupation (ISCO-08), ILO

Source: Authors' Survey Data, 2017

Figure 11.4: Occupation Classification of Graduates by Major Occupation Categories

An overwhelming majority of the diploma holders employed as technicians and associate professionals belonged to the sub major category of Science and Engineering associate professions as roles and responsibilities perform by the many sample diploma holders such as agriculture instructors, coconut development officers and dairy instructors belong to the tasks of this major sub group of occupation. In addition, fair segment of sample diploma holders employed as managers were production and specialized services managers (84 percent) who performed as farm managers, field managers as well as agriculture officers.



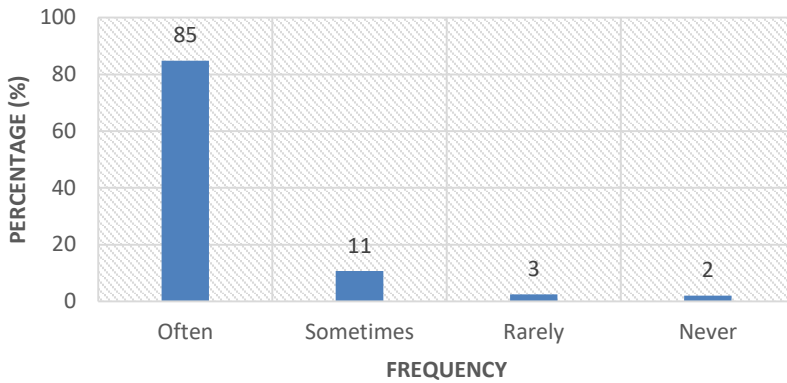
*Occupations are classified according to the International Standard Classification of Occupation (ISCO-08), ILO

Source: Authors' Survey Data, 2017

Figure 11.5: Occupation Classification of Diploma Holders by Sub Major Groups of Job Classification

11.4 Frequency of Involvement in Agricultural Sector Related Activities

The results indicate increasing participation of agriculture diploma holders in agriculture related activities. As shown in Figure 11.6, a great majority (85 percent) of the diploma holders were often involved in agriculture activities while another 11 percent of them were engaged in agriculture related activities in occasionally.

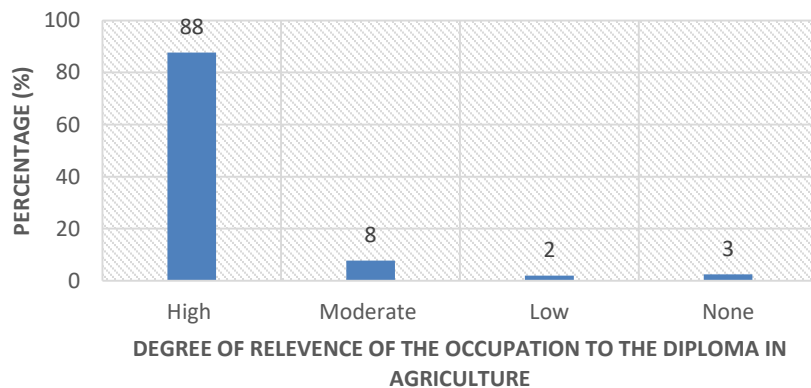


Source: Authors' Survey Data, 2017

Figure 11.6: Frequency of Engagement in Agricultural Sector Related Activities When Performing Duties of the Current Occupations

11.5 Relevance of the Occupation to Agriculture

As illustrated in Figure 11.7, eighty-eight percent of diploma holders stated that their current occupation was highly related to their course of study. Only a few sample diploma holders mentioned the opposite.

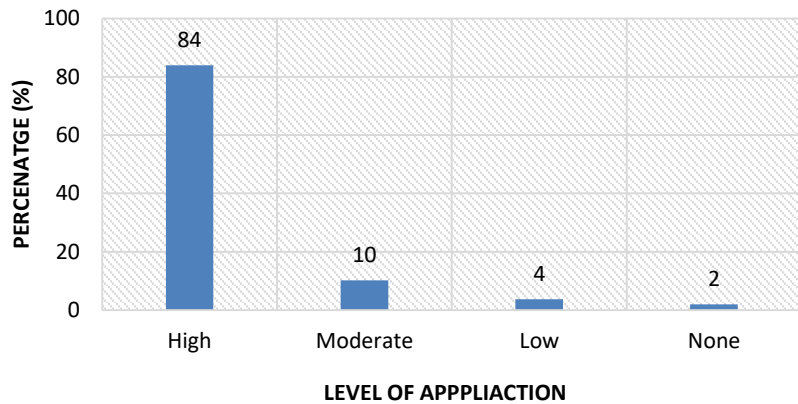


Source: Authors' Survey Data, 2017

Figure 11.7: Relevancy of the Current Occupation to the Diploma in Agriculture

11.6 Application of Agricultural Knowledge Gained Through Education in the Current Occupation

Application of the knowledge is linked with the goals of the agriculture education which supports transform the agricultural sector to a whole new level alongside the development of the country.



Source: Authors' Survey Data, 2017

Figure 11.8: Application of the Agricultural Knowledge Gained Through the Education in the Current Occupation

As results indicate, majority of the diploma holders have applied their knowledge in agriculture at a higher level when performing the tasks of their current employment (Figure 11.8). Only four percent of diploma holders in the sample had low application of knowledge while another two percent had not applied their knowledge by any means.

11.7 Employment Roles and Responsibilities of Agriculture Diploma Holders

11.7.1 Roles and Responsibilities: Related to the Agriculture

Table 11.1 depicts the roles and responsibilities of agriculture diploma holders in the diverse fields of agriculture.

Table 11.1: Agriculture Related Job Roles of Diploma Holders in Agriculture

Description	Number	%
1. Advise farmers on farming operations /assist to resolve issues in farm operations	197	81
2. Distribution of agriculture suppliers, inputs and aids for farmers	136	56
3. Forming farm level organizations (Farmer/women & young farmers) and conducting meetings including "Kanna" meetings	116	48
4. Supervision of farm/field operations and agriculture production processes	112	47
5. Conduct training and awareness programmes for farmers and other relevant parties	111	46
6. Assist to implement government agriculture development programmes	63	26
7. Assist farmers to acquire/develop lands and solve land related issues	51	21
8. Advise on mechanization and new technology, directing and monitoring	50	21
9. Collecting data, recording information and provision of data	46	19
10. Assist in technical research/activities in agriculture	39	16
11. Quality assurance of farms/ and other inputs of agriculture related products	29	12
12. Representing agricultural committees	26	11
13. Provision of field inspection reports, progress reports and monthly reports etc.	25	10
14. Conduct lectures for relevant institutions/groups	10	4
15. Sales and marketing of agricultural products	15	6
16. Provision of agricultural loans and loans for agricultural enterprises	15	6
17. Assisting the provision of irrigation and water management for farming activities	11	5
18. Involving agri-business and self-employment activities	9	4
19. Other	9	4

Source: Authors' Survey Data, 2017

Roles and responsibilities of agriculture diploma holders have a direct relationship with agriculture extension (81 percent), as a great majority of agriculture diploma holders have served as agricultural instructors. Agriculture extension is defined as a policy instrument supportive for

agriculture development of a country and they play a vital role in educating farmers (Van den Ban & Hawkins, 1996). Advising farmers on crop cultivation, animal husbandry which includes dairy management, poultry management, fishing etc., conducting crop clinics, advising on input application are among the main extension services provided by the diploma holders to resolve the issues and achieve production targets of the farmers.

Conducting training and awareness programmes for farmers and other relevant parties were directly related to the agriculture extension role of diploma holders within their job tasks. Accordingly, forty-six percent of the diploma holders have conducted farmer training and awareness programmes as a routine work schedule. Assisting farmers on mechanization and technology dissemination was another key task performed by a considerable portion of diploma holders in agriculture. Although provision of technical know-how is a challenging task, adaptation of new technology and mechanization is a crucial attribute for agricultural sector transformation. Therefore, importance of the job role of diploma holders in technological dissemination in agriculture development is indisputable.

Distribution/facilitate to distribute agriculture supplies; inputs and aids for farmers such as pesticides, feed, fertilizers and farm-equipment was another important task performed by the diploma holders. Fifty-six percent of diploma holders had engaged in input distribution within their job roles. Particularly field level officers including agriculture instructors play a leading role in input the distribution of agriculture development programmes implemented under government and different donor funded programmes.

Establishing farmer organizations and different other organizations that have direct and indirect linkages with agriculture development in rural setting of Sri Lanka such as women and youth organizations was another major task performed by agriculture diploma holders. Assisting all the other operations of the organizations which include conducting meeting on a schedule and direct them to achieve objectives of forming the societies were among their job roles.

11.7.2 Roles and Responsibilities: Non- Agriculture Related

As shown in Table 11.2 diploma holders were engaged in non-agriculture related job roles in diverse fields at different levels. Human resource

management was part of the job role of 65 percent of diploma holders. Documentation and record keeping in different subjects (38 percent) was another task performed by them, which has no direct relationship with the agricultural sector however may have indirect relationship with agriculture.

Table 11.2: Non-agriculture Related Activities

Description	Frequency	%
1. Human Resources Management/document handling	83	65
2. Documentation /record keeping	48	38
3. Accountancy and dealing with financial matters	30	23
4. Matters related to non-agricultural lands/ provision of deeds and certification of land/ other land issues	25	20
5. Dealing with health, hygienic and sanitary matters of the general public	17	13
6. Physical resource management and inventory control	12	9
7. Marketing and sales promotions of the non-agricultural products	7	5
8. Issuing of trade license and consumer relations	4	3
9. Teaching and child oriented-activities	4	3
10. Other	9	7

Source: Authors' Survey Data, 2017

Accountancy, dealing with financial matters and intervening in non-agricultural lands related matters were among the job roles and responsibilities of 23 percent and 20 percent of diploma holders respectively.

CHAPTER TWELVE

Constraints for Entering and Retaining in Agricultural Related Occupations

12.1 Introduction

This chapter discusses constraints of entering and retaining in agricultural sector occupations for the diploma holders in agriculture.

12.2 Constraints for Entering and Retaining in Agricultural Related Occupations

Major constraints prevailing when entering and remaining in the employments in agriculture field in the current context were identified in this survey. Particularly available occupations for the output of national agriculture school systems are certainly linked with the agriculture extension system of the country. Despite the importance of the agriculture extension system in the agriculture development, extension officers encountered numerous challenges when extending their support at farm level. Table 12.1 shows those limitations.

Conveyance difficulties in the execution of duties was considered the main constraint in this context. Particularly in the agriculture extension service the area that has to be covered by the agriculture instructors or extension officers are scattered and have scant facilities. Conveyance difficulties have impeded the effective service delivery in diverse means according to the sample diploma holders.

A mismatch between the educational certification/recognition of the programme and the government rules and regulations in the job recruitments (16%) was identified as the first ranked constraint (under second priority). This factor has seriously influenced accessibility to limited job opportunities available in the public sector. Particularly for the NVQ level courses, the required entry qualifications were slashed enabling a higher number of youth admissions to agriculture schools. However, certain entry qualifications are inconsistent with the government job recruitment policies creating a dilemma.

Table 12.1: Constraints of Entering and Retaining in the Agriculture Related Occupations

Constraints	Rank		
	1st priority	2nd priority	3rd priority
1	Transport difficulties when performing jobs in the field (16%)	Mismatch between acquired qualifications and entry requirement (15%)	Most of the Jobs in remote areas with less facilities (19%)
2	Mismatch between acquired qualifications and entry requirement (16%)	Transport difficulties when performing jobs in the field (12%)	Transport difficulties when performing jobs in the field (14%)
3	Difficulties and challenges in dealing with people (14%)	Difficulties to perform jobs with limited facilities in remote areas (11%)	Inadequacy of knowledge and experience to perform duties (10%)
4	Inadequacy of knowledge and experience to perform duties (12%)	High competitiveness in obtaining agriculture related jobs (10%)	Mismatch between acquired qualifications and entry requirement (9%)
5	High competitiveness in obtaining agriculture related jobs (8%)	Difficulties in dealing with the people (9%)	Gender related issues when performing the duties (9%)

Source: Authors' Survey Data, 2017

Available employment opportunities for diploma holders in agriculture are largely concentrated in remote areas with fewer facilities. Therefore, according to diploma holders performing jobs with limited facilities in remote areas impede their positive absorption to the agricultural sector which was the major third ranked issue.

CHAPTER THIRTEEN

Suggestions to Enhance Contribution of Diploma Holders in Agriculture to the Agricultural Sector: The Perspective of Diploma Holders

13.1 Introduction

This chapter describes the strategies for increasing agriculture diploma holders' contribution to the agricultural sector and the suggestions to develop academic programmes on the perspectives of diploma holders.

13.2 Recommendations to Increase Diploma Holders' Contribution towards Agriculture Development

The recommendations made by the diploma holders to increase their contribution towards agriculture development of the country are much connected to the system reforms and upgrading of knowledge and technologies (Table 13.1). As results indicate, majority of the sample diploma holders (75%) suggested that provision of training and awareness programmes on required disciplines and facilitating skills development should be a key strategic measure to enhance their contribution towards agricultural sector development of the country. Particularly they highlighted the need of receiving technological know-how and knowledge on better technological applications for effective service delivery. In general diploma holders require innovative and updated knowledge on every aspect of agriculture as they come into frequent contact with the farmers and field situations. Hence, to streamline the field level operations they should keep their knowledge updated constantly. In this aspect provision of updated knowledge and training for them as a routine basis is very critical in discharging their duties efficiently and effectively.

Table 13.1: Recommendations to Increase the Agriculture Diploma holders' Contribution towards Agriculture Development of the Country: A Diploma Holders' Perspective

Suggestions of diploma holders in agriculture	Frequency	(%)
1. Provide training and awareness programmes required disciplines fields and facilitate skills development to serve better	189	75
2. Provision of labour incentives on time and ensure the rights of labour force	161	64
3. Provide adequate facilities for provision services (equipment and sufficient labourers)	75	30
4. Performance monitoring and evaluation, appreciation recognition/motivation/promotions	64	25
5. Allocate roles and responsibilities in a manageable level by setting up clear targets and goals	50	20
6. Remove salary anomalies by ensuring fair remunerations/provision of salary increases	50	20
7. Ensure transparency of the recruitment process	41	16
8. Strengthening interpersonal relationships among stakeholders (farmers, officers etc.)	34	13
9. Create a favourable working condition	28	11
10. Considering the distance to the residence in the recruitment and transfers	27	11
11. Broaden the suitable job opportunities of the diploma holders in the agricultural sector	24	10
12. Create attitudinal change of human resources	18	7
13. Ensure decision making power without interference of external parties	10	4
14. Plan and implement the programmes/activities considering the appropriateness to the country/region and need of the farmers	9	4
15. Guide diploma holders towards agro-entrepreneurship by providing intensives and facilities	7	3
16. Other	2	1

*Total sum of percentages is not equal to 100 as respondents have given multiple answers
Source: Authors' Survey Data, 2017

Provision of labour incentives on time and ensuring the labour rights were among the strategies proposed by the sample diploma holders (64 percent) as incentives have ability to inspire effective labour performance in the workplace context. This is very applicable for the diploma holders when the nature of employment and their working conditions are considered. As such, timely provision of performance based incentives will inspire them to perform better by enhancing their contribution to agriculture development of the country.

Need for performance monitoring and evaluation, appreciation of service is highlighted by 25 percent of diploma holders. According to their concern, unavailability of a mechanism to measure hard work, dedication and absence of performance based evaluation are disincentives in the working environment. This can negatively affect the better performance of good and efficient workers.

Eliminating salary anomalies by ensuring fair remunerations and provision of salary increases should be a high priority to stimulate diploma holders' contribution towards agricultural sector according to a considerable number of diploma holders, as financial benefits are among major determinants of labour performance. Providing adequate facilities for offering services to scaffold farm operations is also an important area that needs to be focused upon. According to diploma holders limited facilities are available for delivering services to a wide range of farmer population. Hence, it is difficult for them to offer quality services as expected by the farmers with less facilities affecting work performance.

Shortage of extension officers is a critical challenge encountered in the agricultural sector at present. As a result, area assigned for each officer is unwieldy, which impedes rendering a quality service. Therefore, allocating roles and responsibilities in a manageable level by setting clear targets and goals should be taken into consideration to offer a better service. Unrealistic targets within the job roles is a key issue for many diploma holders particularly for those attached to the agriculture extension service in the country.

Strengthening interpersonal relationships among stakeholders such as public sector and private sector agriculturists/organizations is suggested by 13 percent of diploma holders. Particularly, as some extension officers have highlighted, the frequent changes in government agriculture development programmes and absence of static policies with long term goals have made a serious impact on the farming community as direct beneficiaries. The

changes in policies and programmes without any tangible benefits have greatly influenced to fade the trust and mutual understanding of the extension officers and the farmers. It has harmfully and negatively affected to deliver the services for the farming community according to the experience of field level extension personnel.

13.3 Suggestions to Enhance Academic Programme for Agriculture Education: An Agriculture Diploma Holders' Perspective

Diploma holders' perspective on improving the academic programmes of diploma in agriculture is also reflected through the findings of the study. Table 13:2 shows key suggestions made by the diploma holders in enhancing the academic programme to increase the diploma holders' contribution to the agricultural sector.

Extension service plays an imperative role in agriculture transformation in the country, hence extension officers work as knowledge disseminators in the process of agriculture transformation. To provide advisory services and disseminate technological knowhow to the farmers, it should be well updated in terms of knowledge and concepts in line with agriculture development plans in the country. Accordingly, one fourth of the sample diploma holders highlighted the importance of providing updated knowledge and new concepts in their academic programmes.

A considerable number of diploma holders (18 percent) also preferred the two-year diploma in agriculture as before rather than the NVQ programme. They particularly preferred the course contents of the two years' diploma and the intensity of providing practical knowledge. Further according to their view, entry qualifications were at a satisfactory level for the two-year diploma, hence recognition of the programme was remarkable. However, another eight percent stated that no changes of the programme are necessary as NVQ method fulfilled all the desired expectations.

Industrial training is an important factor for them to obtain practical experience in the agricultural sector, hence, diploma holders have accentuated on importance of industrial training. Accordingly, industrial training should be made compulsory considering the value of practical exposure apart from theoretical knowledge. Need to ensure the quality and relevancy of the industrial training programmes was also highlighted by a considerable percentage of diploma holders.

Table 13.2: Suggestions to Upgrade Academic Programme for Agriculture Education by Diploma Holders

Suggestions of diploma holders in agriculture	Frequency	(%)
1. Providing updated knowledge and new concepts through diploma programmes	64	25
2. Making the programme a two- year diploma programme(since it is more effective than the NVQ method)	44	18
3. No need to change/NVQ method is good	21	8
4. Enhance the international/national level recognition of the diploma programmes while providing opportunities to develop career paths through the programmes	17	7
5. Explain the subject matters in Sinhala/Tamil languages whenever required, while conducting lectures in English	16	6
6. Guidance and facilitation to obtain industrail training in most suitable fields, enhance the quality and period	15	6
7. Facilitate to enhance communication and language skills of the students to be able to have effective interpersonal skills	12	5
8. Increase the time duration of diploma programme	12	5
9. Provision of adequate facilities for students to enhance learning outcomes	8	3
10. Increase the student enrolments for the diploma programmes and making the enrolment process efficient	7	3
11. Allow to enroll in the diploma programme for students who fulfill the required qualifications	6	2
Other	7	3

*Total sum of percentages is not equal to 100 as respondents have given multiple answers
Source: Authors' Survey Data, 2017

Further, as diploma holders pointed out the NVQ programme is more focused on English language. However, students will have to closely deal with the farmers and farming operations in the local context when they enter the agricultural field. Therefore, awareness of the local language, folkloristic terms used in agriculture field and true context associated with the target field and community are paramount to deliver an effective service and maintain cordial relationship with the service receivers. Therefore,

considering this aspect when preparing and conducting academic programme was a point highlighted by some of the diploma holders.

Broadening recognition of the diploma programmes and provision of opportunities to develop the career paths of diploma holders is another area proposed by seven percent of diploma holders. A concern of some diploma holders was that the quality of diploma has dropped therefore possible measures should be taken to ensure the required quality.

CHAPTER FOURTEEN

Summary, Conclusion and Recommendations

14.1 Summary of the Findings

An overwhelming majority of the sample diploma holders were employed, which highlights their high employability within the sphere of agriculture. Interestingly all the unemployed diploma holders consisted of females.

Majority of respondents have secured fulltime and permanent employment opportunities despite the high competitiveness for the labour market opportunities among youth. A great majority of the respondents were directly engaged in the field level operations in the sphere of agriculture.

Public sector was the most popular sector of employment among the diploma holders followed by the private and the semi-government sectors; particularly they preferred to be employed at the Department of Agriculture. Engagement as entrepreneurs was very minimal among diploma holders in agriculture.

As for the reasons for employment selection, compatibility of educational qualifications and skills with the job was cited as the major reason for selecting the current employment. Direct relationship of employment to the agricultural sector and being a public sector occupation were among the major drives for selecting the current employment by diploma holders. Entitlement to the government pension scheme and social status of being a government employee were also considered to a great extent by the diploma holders when selecting the current occupation.

Mismatch between the available job opportunities and qualifications, high competitiveness for available jobs and lack of job opportunities in the relevant field were among the major issues that have driven female diploma holders to be unemployed.

A well above half of the sample population have engaged in at least two employment following graduation while for one fourth it was only one. The present employment of an overwhelming majority of sample diploma holders was related to the agricultural sector. When looking at the progression of the career trajectory of sample diploma holders an increasing trend of participation in agriculture related field was observed.

A majority of sample diploma holders represent the occupation category of technicians and associate professionals. Serving as Agriculture Instructors was most prominent involvement of mainstream of diploma holders in the field of agriculture. Advising farmers in crop cultivation, animal husbandry and fishing and assisting them to resolve issues, assisting farmers on mechanization and technology dissemination were among the key tasks performed by them under the agriculture extension service.

Conducting farmer training and awareness programmes, distribution/facilitating the distribution of agriculture supplies inputs and aids for farmers, setting up farmer organizations and different other organizations having direct and indirect linkages with agriculture development in rural setting of Sri Lanka were other tasks devolving on them.

Human resource management which includes managing human resources, documentation and record keeping in different subjects were some of the non-agricultural tasks performed by the diploma holders that have no direct however may have indirect relationship with the agricultural sector.

As results indicate, a great majority of the diploma holders were often engaged in agricultural activities while sizable number mentioned that their current job has direct interrelationships with the diploma in agriculture. Majority of the diploma holders made use of their knowledge to a greater extent fruitfully in the performance of their current employment tasks.

Mismatch between the entry requirement of appropriate employment opportunities and qualifications, performing duties with limited facilities in remote areas were major constraints faced by the diploma holders when entering and retaining in agricultural sector related occupations.

As results indicate, timely provision of labour incentives and ensuring the rights of labour force, provision of training and awareness programmes on required fields in a routine basis and facilitating skills development and setting up realistic targets to serve farming community were among the key strategic measures proposed by diploma holders in agriculture to derive diploma holders' contribution towards the agricultural sector development of the country.

There are many areas to be further concerned to improve the academic programmes and thereby stimulate diploma holders' contribution towards agricultural sector development according the perspectives of diploma

holders. Accordingly, a considerable number of diploma holders preferred the previous two-year diploma in agriculture stressing the importance of providing updated knowledge and new concepts. Further diploma holders highlighted the importance further expansion of providing updated knowledge and new concepts through their academic programmes, importance of industrial training with ensuring the quality and relevancy, and further increase the recognition of the diploma programme in agriculture.

14.2 Conclusion

The level of participation in agricultural sector and agriculture related activities is remarkably high among agriculture diploma holders. They provide a noteworthy contribution to the agriculture extension service system in the country with their current employment.

A mismatch between acquired qualifications and entry requirements of certain occupations particularly related to extension service has exerted influence on their direct absorption of desired and suitable employment opportunities available.

Despite the importance of the agriculture extension system to the agriculture development, extension officers are facing numerous challenges such as unrealistic targets, discharging duties in a wider geographical area, conveyance difficulties and minimum indispensable facilities that impede their fruitful contribution towards agriculture development extensively for the extension service.

14.3 Recommendations

Facilitate Frequent Update of the Knowledge and Skills

A large proportion of the diploma holders have absorbed to the extension service of the country. Knowledge is the key to extension officers to be armed with required skills and awareness to bring about a positive transformation in agricultural sector of the country. Hence, focus more attention on frequent updating of knowledge and skills related to extension service of agriculture concerning areas such as modern trends of agriculture, issues and solutions, technological innovations and transformations and overall aspects of agriculture and rural development would be helpful to cater to the needs of the farmers in a more effective and efficient manner. Therefore, widening the training opportunities with

frequent needs assessments on the most essential and crucial areas would be a good approach in this regard.

Enhance Practical Learning Opportunities

Focusing on upgrade the practical learning component in the academic process is vital, since diploma holders have stressed the need of more practical knowledge in their academic programme. This would be facilitated the provision of more productive output to the country through agriculture diploma programme, since they have to get involved closely with the farmers in field operations. Expansion of practical exposure would support diploma holders to address ground level needs more rationally and effectively.

Establish Proper Monitoring and Evaluation System

Strengthen the monitoring and evaluation system and implementation of a performance based incentive scheme for the key employment sectors of diploma holders particularly agriculture extension service should be taken into consideration. This kind of a monitoring system would be helpful to motivate the committed and dedicated officers and to enhance their service delivery to the agricultural sector as well as to avoid dissatisfactions and reduce the turnover (employee turnover) of talented officers. Further, this would enhance the effectiveness of service delivery of diploma holders for the betterment of agriculture sector in overall aspects.

Provision of Realistic Targets for the Extension Staff

In the current system extension officers should cover a wider geographical area and are assigned with diverse roles and responsibilities. This has impeded the effective delivery of their service to the farmer. Hence, realistic targets should be set for the extension officers enabling them to deliver a better service to the farmers to achieve the expected outcomes of agriculture and rural development.

Ensure the Accessibility of Most Promising Employment Opportunities

The attention should be paid on further enhancing the competencies of the diploma holders. More focus on addressing the issue of mismatching the qualifications that needs to be fulfilled to access most favourable occupations (I.e. Agriculture extension service) would be beneficial for diploma holders and service receivers.

Strengthening Linkages with Farmers and Agriculture Extension Officers

Deterioration of relationship between the farming community and the extension service has become problematic for delivering effective service

which directly affect to the agriculture and rural development. Hence, there is a need for an effective and continuous mechanism to enhance understanding and strengthen the linkage between the farming community and the extension service. This would create positive grounds to enhance diploma holders' contribution to agricultural sector. Establishing a system that focuses on market-driven extension and rural advisory services to link farmers and market forces could be one of the prudent strategies to build strong bonds among the farmers and the extension service.

Promote Opportunities to Become Agro-Entrepreneurs

A government led programme/scheme with the collaboration of the private sector could be introduced to guide diploma holders (those who are capable and enthusiastic) to become agro-entrepreneurs. A sufficient guidance, trainings, indispensable facilities, market linkages and technological knowhow should be offered as appropriate, allowing diploma holders to emerge as successful agro-entrepreneurs. Frequent monitoring and evaluation system with the continuous support can be implemented in line with such intervention for a certain period in order to increase the level of success.

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