

LAND DEVELOPMENT ORDINANCE IN ACTION

Achievements and Prospects of Highland Alienation

Dinusha Rathnayake
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Thushara Dharmawardhana
Rifana Buhary
Amal Dissanayaka

RESEARCH REPORT



HARTI

Hector Kobbekaduwa Agrarian Research and Training Institute

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FOREWORD

The land alienation process in Sri Lanka has evolved over a period of 80 years and has been driven by the objective of improving the life chances and livelihoods of the peasant community in Sri Lanka. Successive governments have launched alienation schemes under the Land Development Ordinance (LDO). Such policies have generated mixed results. On the one hand, the key demand of the landless has been met. However, there are issues regarding the land disposal process and the eventual outcome, especially with respect to productive land use potentials and practices.

This study fulfils the important objective of assessing the current status of highland alienation processes, the outcomes and related consequences; in particular to understand the degree to which grantees utilize scarce land resources in relation to the purposes outlined by the LDO.

The study revealed that LDO allotments have been used by many grantees for residential purposes. Factors such as household composition, housing quality, availability of sanitary facilities, other livelihood supporting activities and land fragmentation have been considered and therefore it has been possible to obtain a broader and more detailed picture of the socio-economic condition of grantees and land-use patterns. Furthermore, the study revealed the ways in which grantees used the LDO lands for agricultural activities particularly for home gardening. The key issues faced by grantees have also been discussed and recommendations have been made for resolving the same.

I believe that the findings and the recommendations of this study would be beneficial to all relevant stakeholders and policymakers engaged in the sphere of land management, especially in designing land alienation processes that can yield greater efficiency.

Malinda Seneviratne
Director/Chief Executive Officer

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EXECUTIVE SUMMARY

The systematic alienation of state lands to landless people in Sri Lanka was commenced after the Land Development Ordinance (LDO), which came into effect in 1935. Through the whole history, several land alienation programs such as major colonization, village expansion, youth settlement and middle-class settlement have been implemented in the country in order to satisfy the residential and agricultural needs of the people. Concurrently, the governments anticipated both improving living conditions of the people and developing state lands by land alienation. The land alienation process is continuing hitherto distributing large number of state lands to locals.

At present however, there are queries about the land alienation process and its outcomes; are those lands have been utilized for the intended purposes, how productively they have been utilized by the land holders, what benefits have been achieved, can those land allotments be considered simply as economic units that secure improved living conditions of the people? In this context, the present academic exercise was attempted to explore the aforesaid issues and the consistency between purpose of land alienation and the current pattern of utilizing alienated state lands. The study location covered three districts *viz.* Anuradhapura, Kurunegala and Galle which represent the main climatological zones in the country. The study sample consisted of 401 LDO land grantees from nine Divisional Secretariats (DSs).

The study revealed that the land alienation has been remarkably successful in utilization of lands granted either for residential or agricultural purposes. Majority of lands allotted for residence or development retain within the family and the kinship. The allotments have been intensively used to fulfill residential needs by the recipients over generations with elevated standards of living. Thereby land alienation gives the impression that it has indirectly contributed to uplift the life of people in the country. Residential allotments under LDO have also paved the way for income generating alternatives such as animal husbandry, small businesses, skilled employment and self-employment activities despite the fact that most of the ventures have been less productive in contributing a substantial income for households.

Present study also revealed that the legal process of land granting by the state is long overdue. On average it takes about 15 years to issue land grants for recipients utilizing plots of land given under permits. This has been an embarrassing state of affairs of the administration instigating displeasure among the public since grantees are not satisfied with the conditional access to lands they relish. The land fragmentation prevails in LDO allotments at a scale of 13 percent. This has been a common occurrence amongst larger families and larger allotments. It has been speculated that there can be occasions exceeding the minimum unit of sub-division of allotments in the future if fragmentation continues in the way it happens now.

There is sufficient space in the allotments for agricultural development activities from the modern day home gardening viewpoint. People are keen on maintaining a home garden to their capacity despite less land use intensity, less productivity and poor income. Cropping intensity of agricultural allotments (85%) is relatively greater than that of home gardens in residential allotments (61%). The allotments have been diversified with perennial and annual crops characteristic to climatic conditions of each study location. The survey observations and the analysis revealed that agricultural allotments have been less productive and generating poor incomes for land users.

As revealed in the study development of LDO allotments has been constrained due to wild animal threats, financial scarcity, water shortage, poor road access and soil infertility. These constraints are not only limited to LDO allotments. They are common challenges faced by the entire agriculture sector of the country. The LDO grantees seek not only financial and kind assistance for development of their LDO allotments, but also permanent measures to control wild animal threats, supply of water, proper access roads and awareness creation on agricultural development and other income generating activities.

Based on the findings of the study it is justifiable to recommend offering title deeds with free holding land rights to the grantees without undue delays especially for those already received the grants and expecting to be issued and expediting this process by frequent and immediate action at the Divisional Secretariat (DS) level. It is also important to identify the LDO allotments subject to over fragmentation and handle the circumstance by imposing strict regulations. Further, as an outcome of the study, introducing and launching affordable housing schemes as housing clusters or flats for the rural youth, can be suggested as a worthwhile initiative to address aforementioned constraints of land fragmentation. It is also suggestible to allocate the state lands adjacent to such housing schemes to be developed as productive community farms with the involvement of residents as promotion sites of good agricultural practices by the interested parties, as learning sites for the children about farming, as recreational sites for the elderly, and as on-site direct marketing ventures of healthy food commodities. Finally, the study recommends creating awareness through low cost mass communication programs to educate people about the rules and regulations associated with land alienation process and the accountability of the state and the public in protecting the countries' land resource.

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LIST OF ABBREVIATIONS

CII	-	Cropping Intensity Index
CLEO	-	Crown Land Encroachment Ordinance
DCS	-	Department of Census and Statistics
DLC	-	Department of Land Commissioner
DS	-	Divisional Secretariat
GA	-	Government Agent
GN	-	Grama Niladhari
GND	-	Grama Niladhari Division
HARTI	-	Hector Kobbekaduwa Agrarian Research and Training Institute
KIIs	-	Key Informant Interviews
LAA	-	Land Acquisition Act
LCGD	-	Land Commissioner General's Department
LDO	-	Land Development Ordinance
OFCs	-	Other Field Crops
OSC	-	Other Seasonal Crops
PCS	-	Provincial Council System
SLCARP	-	Sri Lanka Council for Agricultural Research Policy
SPSS	-	Statistical Package for the Social Sciences
SRS	-	Simple Random Sampling
TCE	-	Total Cultivable Extent
WLO	-	Waste Land Ordinance

CHAPTER ONE

Introduction

1.1 Background

Land is considered as one of the most fundamental natural resources utilized by the mankind. It is the main source of income and wealth of poor people worldwide, including Sri Lanka since ancient times. Out of the total population of the country 26.1 percent directly depends on the land as their main livelihood source became the agriculture (DCS, 2017). Lands in Sri Lanka have been classified as state lands and privately owned lands based on the ownership. State lands are lands to which the state is lawfully entitled together with all rights, interests and privileges attached or appertaining (LDO, 1935). More than 80 percent of lands in the country are owned by the state while remainder by private parties (Law & Society Trust, 2015).

The first Land Commission, which was established in 1927, opened up a new avenue for a legal framework for land alienation. A systematic alienation of state lands in Sri Lanka commenced with the recommendations of the land commission by introducing LDO No 19 of 1935 (Abeyasinghe, 1978). This new policy framework mainly focused on the development of the state lands while finding solutions for the landlessness among the people in the country. Majority of people who benefited through land alienation were the peasant community, the poorest category in Sri Lanka. Therefore, state lands were alienated with the view of securing this peasant community. Lately the educated youth and the persons in the middle class were also included for vesting lands under the LDO (Fernando et. al., 2013).

Throughout the history, several land alienation programs were implemented by successive governments namely, major colonization, village expansion, youth settlement, and middle class settlement. A large number of people benefited from these programs. The extent of land alienated to a beneficiary family varied according to policy interests of respective governments that controlled the alienation programs of the country. At the initial phase, a household received eight acres which included five acres of lowlands for paddy cultivation and three acres of uplands for residential and highland cultivation (Chandrasiri, 2010). With the passage of time this extent has been reduced to a maximum of one acre for lowlands and eight perches for uplands due to the inadequacy of the land resource to accommodate the increasing population (Land Commissioner General, 2019). Moreover, the initial intermediate tenure type permit offered to a land beneficiary was replaced at later stage by a grant which is almost similar to a deed. The well-known land granting programs implemented in Sri Lanka, including *Swarnabhoomi*, *Jayabhoomi*, *Isurubhoomi*, and *Ranbima* secured the tenures as permit holders (Wanigarathna and Samad, 1980).

All governments came into power in Sri Lanka have progressively paid attention to the land management and related areas. The previous government, in its policy

document “Vision 2025” (2017), recognized land resource as one of the prominent factors of production and planned to distribute one million grants to those residing in the state lands over a long period of time with no secured ownership. The intension of every land alienation program has been the same and expecting state lands to be developed by grantees and thereby improving their living conditions. However, there are queries about the whole land disposal process and its outcomes at present; such as whether those lands haven been utilized for intended purposes, how productively those lands have been utilized by the land holders, what benefits have been obtained by the land holders, and can those plots of land be considered as economic units that secure improved living conditions of the people. Therefore, the proposed study was conducted to assess the aforesaid issues and to unearth detailed and timely information to recommend policy initiatives for refining the existing land alienation program.

1.2 Problem Statement

The land alienation in Sri Lanka has evolved over a period of 80 years during which the successive governments launched alienation programs under different schemes. Consequently, thousands of landless people have been ensured access to a plot of land with dual intents; improving living conditions of the grantees and developing state lands. However, through unconfirmed information from personnel attached Divisional Secretariat’s (DS’s) it became apparent that current level of utilization and development of allotted lands has not being efficient as expected. Furthermore, unauthorized residence and informal and illegal transactions contradict intended purposes¹ causing alienated lands to become less productive. Therefore, the key question persists is that to which extent the land alienation objectives have been materialized?

Some related research studies undertaken in the recent past have surfaced certain limitations with regard to land alienation. Bamunuaarachchi (2017) studied about lands allotted under LDO (LDO lands) in major irrigation schemes in the dry zone focusing on the ownership pattern and land rights, especially about the willingness of settlers to have free holding rights to their lands. Chandrasiri (2010) examined the causes of informal land transactions in settlement schemes which have been one of the prominent malfunctions happening in the LDO lands and the impact on production, investment, income and well-being of the settlers in four major selected settlement schemes. Dharmarathna *et al* (2006) comprehensively investigated the current status on how grants and permits affected poor households and how reforms of the LDO benefited the poor. This study examined the state imposed restrictions on LDO lands such as land inheritance, subdivision, sale, and mortgage and the impact of such restrictions on rural households and revealed some salient points with respect to informal and illegal transactions adopted by farmer families by way of mortgaging, leasing and selling LDO lands. However, since the study locations

¹ LDO was introduced to provide provisions for systematic development and alienation of state land in Sri Lanka. Accordingly, the state lands are distributed among people for residential and cultivation purposes (LDO, 1935).

were represented LDO lands the study unearthed the situation prevailed before a decade.

The foregoing discussions are indicative of the dearth of updated information generated through scientific assessments to understand the ground reality of the land alienation process, its outcomes and related consequences to investigate whether grantees² utilize the scarce land resources for the intended purpose i.e. develop allotted lands to derive economic benefits. It is also important to identify whether people are satisfied with the current way of operationalization and the changes anticipated in alienation programs. In the absence of such vital information the land alienation process continues unchanged. Therefore, it warrants the disclosure of current pattern of utilizing alienated highlands, the achievements and the prospects as a testimony to the unconfirmed opinions and to lay the foundation for future policy directives.

1.3 Justification

This undertaking can be justified in two ways. The Sri Lanka Council for Agricultural Policy (SLCARP) emphasized the necessity of focusing on current status of land related issues such as underutilization, misuse of arable lands, inappropriate allocation of lands among the uses, degradation of land productivity and land fragmentation in the country (SLCARP, 2017). Land Commissioner General's Department (LCGD) also anticipate a similar undertaking to reveal the present situation of alienated state lands in the country with reference to the land use pattern and development.

1.4 Main Objective

The overall objective of the proposed research study is to determine the current utilization pattern of highlands alienated under Land Development Ordinance (LDO) and identify the key achievements and prospects.

1.4.1 Specific Objectives

- I. Identify prevailing residential patterns and the nature of land development in LDO allotments
- II. Assess the nature and extent of existing agricultural activities implemented in the LDO allotments

1.5 Organization of the Research Report

The research report consists of seven chapters; 1. Introduction, 2. Methodology of the research, 3. Overview of land alienation in Sri Lanka with its historical background and the present scenario, 4. General information of the LDO allotments

² The LDO landholder who has received a grant to the allotment is known as land grantee.

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gathered during the field survey, 5. Nature of residential pattern, 6. Nature and the extent of utilization and agricultural development of allotments and 7. Conclusion (Policy recommendations).

CHAPTER TWO

An Overview of Land Alienation in Sri Lanka

2.1 Land and Land Use in Sri Lanka

Land comprises things attached to the earth such as soil, water, trees and other natural assets as well as man-made fixtures. Sri Lanka has a total area of 65,610 square kilometers, including inland water bodies. The land area excluding inland water bodies is 62,705 square kilometers (DCS, 2018a). Approximately one person in Sri Lanka has a capacity to hold an extent of 0.3 hectare of land extent as per the current total population of 21.4 million (DCS, 2018b). The land-man ratio in the country has reduced over the time (2.7 in 1871) with the increase of population since the total land extent in the country remains constant.

Sri Lanka has a diversified land use pattern. The highest extent of land is used for agricultural activities, which accounts for 53.9 percent of the total land area in the country, including both estate and smallholding sectors. The second prominent land use category occupies forest lands such as natural forests, forest plantations and scrub which accounts for 30.9 percent from the total land use in Sri Lanka. The rest of the lands are recognized as built up areas, water bodies, and others such as marsh, mangroves, roads and streams (Agricultural Statistics, 2018).

There are two categories of agricultural lands: smallholdings less than 20 acres and estates with 20 acres or more. The highest extent of the agricultural lands (41 percent) is categorized as home gardens whereas 26.1 percent land is used for paddy cultivation. Out of the total agricultural lands, 91 percent belong to the smallholding sector comprising 3.2 million of land parcels while only 9 percent belong to plantations (DCS, 2002). Majority of the smallholdings in the country is occupied by 82 percent of rural population in Sri Lanka, and 26 percent of the population is involved in the agriculture sector from the total employed population (DCS, 2012). Therefore, the contribution from the smallholding sector to the national food production is enormous in Sri Lanka.

2.2 Land Alienation: An Overview

Land is a scarce natural resource bound up with basic human needs and one of the fundamental factors of production. It provides the foundation for economic activities and the functioning of market as well as non-market institutions in many of the developing countries (Deninger, 2003). In the Sri Lankan context, the prime objective of land alienation has been solving the problems accompanied by landlessness among the lower segments of the people and increasing local food production. The concept of land alienation precisely supports to uplift the social and economic welfare of rural peasant community as the land is directly linked to the rural agricultural sector of the country. Similarly, land alienation and land settlement

measures have been undertaken to improve the rural peasantry in most developing countries.

Land alienation is a fundamental concept which opens up different dimensions beyond social welfare of the community. It is one of the prominent political tools that have been frequently used by various governments to attract their loyal supporters by way of rewarding land grants. It is firmly bound up with political concepts such as state, nation, nationality and sovereignty. As land is one of the most precious natural resources in the country, the protection of which is essential during the subsequent development activities after alienation. When a group of people is granted with new allotments far away from their current territories, it will ultimately create a new community by demarcating their own territories. Therefore, the land alienation concept strongly addresses the society, culture, politics, economics and environment situation in the country (Damayanthi and Lurdu, 2007).

2.3 Land Alienation in Ancient Times

In ancient times, Sri Lanka was ruled by the king and he was the sole proprietor of all lands in the country. Therefore, the land was subjected to the autocratic³ rule of the king. The king was recognized with some alias as "*Bhoopathi*" and "*Mihipal*" which the words are meant to be the ownership to the land (Abeyasinghe, 1978). The inherited lands which enjoyed by the people in the country were not influenced by the king as allowed them to utilize the lands as service providers to the kingdom. This service was known as "*Rajakariya*"⁴ and people who default the services will have to abandon the possession of land. Sri Lankan society was stratified into various caste systems based on the nature of the duty carry out by the people to the king (Silva *et al*, 2009).

Some of the lands were distributed among the feudal lords recognized as "*Nindagam*", and were managed according to their own set of rules and regulations. They had the total administration and jurisdiction power to the lands that they received and more often peasants in the country worked on these lands. These lands were also used as a source of revenue for the state budget for the state's administration. The king therefore obtained from them a portion of the income of the land cultivated by the landlords as taxes (Abeyasinghe, 1978).

Some lands were given as token devotion to build religious shrines, specially temples and *devalas*, to safeguard the religion and the culture of the country as a fundamental obligation of the king. Those lands were recognized as "*Viharagam*"

³Under the autocratic rule the king retains as power and decision-making authority as possible, make decision independently and civilians obey orders without receiving any explanations (Saqib Khan *et al*, 2015)

⁴The civilians utilized the land given by the king for performing a duty or a service for the king. Though the land pass to one person to another the service or the duty attached to the land remained unchanged. Most of the poor people had used these lands due to landlessness and performance of duty for the king (Dharmasiri, 2009).

and “*Dewalagam*” respectively, and some of them were offered to religious leaders with some written documents called “*Sannasa*” as it implied the legal transaction of the lands (Ranasinghe and Ariyawansa, 2016).

In addition, the king preserved some lands for himself that were known as “*Gabadagam*” for the works of the royal palace. Those lands were more fertile and prosperous. During the king’s time the land administration and management was under fully dictatorship. As mentioned by Abeysinghe in 1978, though there was such situation in the country, people enjoyed with the lands what they had by serving to the kingdom.

2.4 Changing Land Use Pattern with Colonial Intrusion

The land management system in Sri Lanka began to change with the intrusion of colonial rulers. With regard to land management, the most significant administrative system known as *Thombos*⁵ was introduced by Portuguese. At the beginning of 19th century, during the time of British invaded Sri Lanka, coffee cultivation introduced by the Dutch was very popular in the country (Abeysinghe, 1978). With the destruction of coffee cultivation due to a fungal disease the British rulers drew their attention on plantation crops such as tea, rubber and coconut, which made way to commercial agriculture instead of subsistence farming system which prevailed in the country. British rulers realized the favorable conditions of the country such as climatic and environmental conditions to grow plantation crops in natural locations of the island for economic transactions with overseas countries. They established and expanded tea and rubber cultivation in wet zone of the country with lands available especially the forest areas during that era.

British rulers decided to acquire more lands from the people by imposing legal enactment Crown Land Encroachment Ordinance (CLEO) No 12 of 1840 since the land requirement was inadequate to expand the plantations (Abeysinghe, 1978). This was the first land related policy imposed in Ceylon which effectively transformed over 90 percent of the total extent of land in the country into crown property (Madduma Bandara, 1990). All the lands with unproven ownership were taken over to the hands of the crown under this law. The basic objective of this legislation was to protect the crown lands from encroachment by the local peasant community and to protect the tenancy (Abeysinghe, 1978). The lands acquired by British were sold or leased to foreign planters and local financiers for furthering the plantation sector in the country.

According to Abeysinghe (1978), the low country paddy lands were given away to grow rubber and coconut making landless rice cultivators in the low country with no way live, cultivate or employ. With the introduction of Waste Land Ordinance (WLO) in 1897 all uncultivated, unoccupied, forests and waste lands in the country were

⁵ The list of land holdings which gave detailed description of land, gardens, in each village giving the high lands lowlands, buildings, trees and tax dues. Even Portuguese introduce Land *Thombos* system Dutch maintained it successfully with the Roman Dutch Law (Dharmasiri, 2009)

passed to the hands of British rulers by declaring them as crown property (Herath, 2006).

In essence, all these land related legislations imposed by the British rulers ruined the Sinhalese social management system by grabbing villages, forests and *chena* cultivations and selling them to planters. By the end of 19th century, the entire economy of Sri Lanka entered to a different path making way for a very successful plantation sector earning more economic benefits while making landless peasant community who works in their own lands as labors.

2.5 Introduction of Land Development Ordinance (LDO)

Sri Lanka struggled with several issues in the early twentieth century because of the destruction of irrigation system in the dry zone, disregard for paddy cultivation, expulsion of subsistence farming, population congestion in wet zone and food shortage due to 1st world war (Land Commissioner Ggeneral's Department, 2019). All these issues emerged mainly due to the changes of land use pattern in the country. The first Land Commission was established in 1927 with the view of finding solutions for the situation existed in the country. With detailed and far-reaching recommendations after a comprehensive study by the commission, the focus was mainly drawn for the preservation of peasantry in the country as a group.

The commission declared that the government should hold state lands in trust for all the people and alienate the lands for their benefit (Peebles, 1990). The commission's recommendation was to map⁶ all the crown lands in the country and to distribute them according to the requirements needed by different groups of people (Raji, 2017). The LDO No 19 was enacted in 1935 providing a proper mechanism for land alienation process in Sri Lanka with the view of providing for a systematic development of state lands under the recommendations of Land Commission (Ministry of Land and Land Development, 1985). The key concern of this ordinance was to reduce the population pressure in the wet zone and enhance the domestic food production through distribution of state lands.

Under the LDO both lowlands and uplands were distributed among the peasants for cultivation of paddy and Other Seasonal Crops (OSCs) and residential purposes. The beneficiaries were selected by employing a well-defined mechanism known as land *Kachcheri*⁷. Earlier in the selection process, the preference was given to landless

⁶Crown lands were mapped out by the Government Agent (GA) for any one or more of the purposes :such as village expansion, village forests, village pasture, chena cultivation, colonization, protection of the sources or courses of streams, for estate reserves, prevention of the erosion of the soil, forest reserves, government purpose, preservation of objects of archaeological or historical interest, the requirements of local authorities, the development of towns, alienation to middle-class Ceylonese, alienation to any persons whomsoever irrespective of the class or race to which they belong, any other purpose that may be prescribed (LDO, 1935)

⁷ Land *Kachcheri* refers a formal meeting held in the prescribed manner for the purpose of alienating Crown land. No land shall be alienated by grant except at a Land *Kachcheri*. The notification that a

persons with large families, and later the priority was moved out for people with agricultural knowhow, experience in farming and physical fitness (Gunawardena, 1981). Even though, crown lands were formally alienated by the state, a large number of households informally encroached and occupied lands which too were later legalized by the state in the succeeding years (Moore, 1989).

The post of Land Commissioner⁸ was established for the purpose of implementing the provisions of the Ordinance (LDO, 1935). Before introducing the Provincial Council System (PCS) the Department of Land Commissioner (DLC) and Government Agents (GAs) in each district took the responsibility in state land management and alienation in the country under LDO. With the introduction of the PCS under the 13th Amendment of the 1987 Constitution, eight Inter Provincial Land Commissioner Departments were established to work together with the supervision of DLC to undertake the responsibility of functions of the LDO (Damayanathi and Lurdu, 2007).

At present, the power of alienation of state lands under LDO is delegated to the District Secretary of each DS with increased authority after the enforcement of the act of Transfer of Powers (Divisional Secretaries) No.58 of 1992, within the District and Divisional Administration (Nabeela Raji, 2017). President's power and approval are essential when distributing land grants to permit holders. Currently this power of state land administration under LDO has been vested in the LCGD under the supervision of the Land Commissioner General. There are also some other institutions in Sri Lanka such as Mahaweli Development Authority, Land Reform Commission, and Presidential Task force which alienate state lands under the rules and regulations of the LDO.

2.6 Land Alienation Programs under LDO

Data pertaining to various land alienation programs launched in the country by year 2003 is given in Table 2.1.

Land *Kachcheri* will be held shall be substantially in the prescribed form and shall be published in such manner as may be prescribed (LDO, 1935).

⁸Land Commissioner is responsible for all the duties and functions assigned to him as Land Commissioner under the LDO, which mainly focus on the general supervision and control of all GAs and land officers in the administration of Crown land and in the exercise and discharge of the powers and duties conferred and imposed upon them by the Ordinance (LDO, 1935).

Table 2.1: Land Extent and Number of Allotments Distributed under Different Land Alienation Programs by Year 2003

Land Alienation Program	Land Extent (ha)	Percentage	No. of Allotments	Percentage
Major colonization	168835	20.20	9959	0.83
Village expansion	301468	36.07	515078	42.91
Highland settlements	15023	1.80	100117	8.34
Youth settlement	7881	0.94	6245	0.52
Regularization of encroachments	260283	31.14	492143	40.99
Middle class allotments	63265	7.57	13385	1.11
Land grants (special provisions)	18977	2.27	63574	5.30
Sub Total	835732	100	1200501	100

Source: Land Commissioner Department, 2003 (in Marawila D, 2007)

Dry Zone Colonization: The dry zone colonization program which was popularly called as dry zone colonization / major colonization / peasant colonization program created under LDO to implement the first land alienation program in the Dry zone was the initial step taken in land alienation in Sri Lanka (Gunawardene, 1981; Bastian, 2009). Under this scheme lands were allotted only to cultivating families disregarding any provision/s for landless laborers. Therefore, most of the landless laborers shifted themselves by encroaching state lands around the schemes (Moore, 1989). The colonists were provided with significant assistance during initial phase of colonization by the government such as clearing of lands, construction of irrigation channels, roads, houses, and latrines. Seed paddy and other planting material were also provided with free of charge during the first season. In some areas, communal facilities such as community halls, schools and dispensaries were established for the social betterment of the colonists (Wanigarathna and Samad, 1980).

The dry zone colonization program however, has contributed to increase of national paddy production in Sri Lanka (Wanigarathna and Samad, 1980). The major settlement area or the dry zone colonization area still stands at number one in terms of paddy production in Sri Lanka. This program was able to establish 29 settlement schemes with 13,571 of settlers during the period from 1935 to 1953 (Bastian, 2009). The largest and one among the major colonization schemes was the Accelerated *Mahaweli* Development Scheme which began in 1979. This was able to settle 128,658 of people by providing irrigated water from the *Mahaweli* River, while generating hydraulic power (Chandrasiri, 2010).

Initially the extent of land grant accounted for eight acres comprising lowlands for paddy cultivation and uplands for residential purposes ensuring a greater access to land by the settlers enabling them to become more economically independent. The extent of the land grant was reduced over the time permitting the government to alienate lands for more people while reducing the cost per one settler. At the same

time, settlers were able to practice intensive cultivation methods without using hired labor and machinery to earn the same income.

Village Expansion: In addition to aforementioned major colonization, the government started another program known as village expansion in the wet zone which is more congested with population. People were provided with lands under LDO for both residential and agricultural purposes. Since lands were limited in the areas of wet zone, certain portion of lands were acquired by the state from large plantations and privately owned lands under the Land Acquisition Act (LAA)⁹ No 9 of 1950. The allottees under this scheme were financially assisted for construction of houses, wells, latrines and take measures for soil conservation. People under the agriculture scheme were provided additional allowance for jungle clearing, constructions of agro wells and temporary huts (Wanigarathna and Samad, 1980).

Highland Settlement: The highland colonization scheme in tea, rubber and coconut was implemented in 1956 by alienating state lands in the wet zone providing subsidy for development of highland allotments. The Youth Settlement Scheme was initiated by distributing lands under LDO especially for the educated youth to integrate them into agriculture and land development activities. Later, several land alienation programs such as Middle-Class Settlement, Co-operate Farms, and special lease were introduced by various governments for alienating a large extent of state lands for distributing among people.

2.7 Issuing Land Permits and Grants

People allotted with lands were restrained on certain activities such as selling, mortgaging, transferring and subdivision of allotments by imposing rules and regulations under LDO policy framework for protecting the land as well as the peasant class. Land permits¹⁰ were given at the initial stage of land alienation with certain conditions to protect the land. The permit holders were strictly compelled to adhere to these conditions stated in the permit otherwise the permit will be cancelled off of those violating rules and regulations specified in the LDO (Ellman *et al*, 1976). Those developed the land, paid all sums required to be paid and stick to all conditions mentioned in the permit, will become eligible to receive a grant subjected to certain conditions following a complete survey of the land (Fernando *et al*, 2013). Such grant holders will be vested with more privileges such as mortgaging, subdivision, and inheritance on permission of the GA. However, the status of grant provides a clear title and greater protection from administrative interference. In this way, the government ensured a monopoly over land ownership. The successive governments implemented several national programs under different titles such as

⁹ The LAA provides the procedures and manner in which private land can be taken over (acquisition) by the State (Government) for public purposes. The government must follow the procedure laid down in the LAA when taking ownership/acquiring private land (Law & Society Trust, 2015)

¹⁰ Permit is a document offered to the land recipients which gives him necessary authority to occupy and develop the land (Law and Society Trust (2015).

'Swarnabhoomi'¹¹, 'Jayabhoomi', 'Isurubhoomi' grants and at present 'Ranbima' grant, marking successive milestones of the land alienation process as shown in Table 2.2.

Table 2.2: Land Grant Programs Implemented in Sri Lanka: 1982 -2018

Grant Program	Time Period	No of Allotments Distributed
<i>Swarnabhoomi</i>	1982-1994	348539
<i>Jayabhoomi</i>	1995-1999	614490
<i>Isurubhoomi</i>	2000-2001	57503
<i>Jayabhoomi</i>	2004-2006	12089
<i>Ranbima</i>	2007-2018	95152
Sub Total		1127773

Note: Issuance of land grant has temporary ceased during the year 2002 to 2003 by LCGD
Source: LCGD - Annual Performance

¹¹ *Swarnabhoomi* was the first land grant program implemented in the country in 1982 (Samarathunga and Marawila, 2006).

CHAPTER THREE

Methodology

3.1 Selection of Study Location and Sample

3.1.1 Target Population

Distribution of LDO Grants for lowlands and highlands from 2012 to 2018 is given in Table 3.1. During this seven-year period 40,273 allotments comprising 90% highlands and 10% lowlands have been disposed island wide. This study focused only on highland allotments disposed during the said period (2012-2018). The study assessed a total of 36,036 high land grantees for reasons justified below:

- According to the Key Informant Interviews (KIIs), the number of low land grantees is less (Table 3.1), and the use and development of low lands by them has been consistently following regulations of the LDO.
- During this period only a few (0.5%) has been allotted lands above three acres or more (Table 3.2) and hence the upper limit of the allotment size was set as lands less than three acres.
- The seven-year duration from 2012 to 2018 was selected for the study because of two reasons: in essence allocating a reasonable time for the dwelling and developing allotments by the grantees and avoiding likely recalling issues during the data collection on residential and land use changes and developments undertaken outside the said period.

3.1.2 Study Population

The study population was selected based on the climatological variations in the country because of differences in the land use pattern, cropping systems and land developments in climatic regions. Thus, districts representing dry, wet and intermediate zones in the country were chosen for the study and also considering the magnitude of the number of grants distributed. Accordingly, LDO highland grantees in Anuradhapura, Galle and Kurunegala districts were chosen respectively. These three districts consisted of 9,472 of LDO land grantees representing 26 percent of the target population.

Table 3.1: Distribution of LDO Grants for Lowlands and Uplands: 2012-2018

	District	Highlands	Lowlands
1	Anuradhapura	4022	460
2	Ampara	1223	1749
3	Batticaloa	71	161
4	Moneragala	3181	313
5	Puttlam	2915	246
6	Trincomalee	1208	428
7	Polonnaruwa	2332	326
8	Vavuniya	74	22
9	Jaffna	87	0
10	Mannar	19	4
11	Mulathiv	0	0
12	Kilinochchi	0	0
13	Kurunegala	3076	88
14	Hambantota	1775	68
15	Matale	1739	206
16	Badulla	1358	83
17	Galle	2374	10
18	Kandy	2884	20
19	Matara	2212	0
20	Ratnapura	1420	20
21	Nuwara Eliya	1299	1
22	Kegalle	1242	2
23	Kaluthara	858	6
24	Gampaha	516	0
25	Colombo	175	0
	Total	36060	4213

Source: Land Commissioner General's Department, (Unpublished).

Table 3.2: Distribution of LDO Grants by Land Size Class

District	Land Size Class (Acres)								Total
	<0.25	0.25=<0.5	0.5=<0.75	0.75=<1	1=<2	2=<3	3=<4	4=<5	
Anuradhapura	600	1280	625	355	943	219	19	0	4041
Ampara	253	295	163	85	275	152	2	0	1225
Kalutara	302	225	175	70	75	11	4	4	866
Kegalle	592	385	123	54	75	13	1	0	1243
Kurunegala	333	649	507	546	819	222	14	5	3095
Colombo	96	45	7	17	10	0	0	0	175
Gampaha	234	181	27	28	45	1	0	0	516
Galle	972	548	318	257	245	34	2	0	2376
Trincomalee	140	374	146	147	304	97	1	0	1209
N'Elliya	754	351	107	50	36	1	0	0	1299
Puttalam	813	642	283	300	635	242	26	16	2957
Polonnaruwa	601	922	294	177	277	61	20	2	2354
Badulla	363	340	175	139	267	74	1	2	1361
Batticaloa	56	12	1	1	1	0	0	0	71
Mannar	19	0	0	0	0	0	0	0	19
Kandy	1347	938	322	154	118	5	1	0	2885
Matara	907	548	286	202	226	43	0	0	2212
Matale	331	564	355	150	303	36	1	1	1741
Monaragala	214	393	341	265	1251	717	48	22	3251
Jaffna	81	1	1	2	2	0	0	0	87
Ratnapura	354	398	203	184	242	39	0	0	1420
Vavuniya	4	11	11	12	23	13	0	0	74
Hambantota	496	389	249	170	388	83	2	2	1779
Grand Total	9862	9491	4719	3365	6560	2063	142	54	36256
			36060				196		36256

Note: LDO grants have not been distributed in Kilinochchi and Mulathiv districts during the reference period.

Source: Land Commissioner General's Department, 2018 (Unpublished)

3.1.3 Study Sample

The study sample was derived based on the LDO grantees' data base maintained by LCGD as the sample frame proportionately representing the number of land grants distributed in each district. The sample selection process comprised several stages.

- **Stage One**

Three DSs that had disposed the highest number of grants were chosen from each district to ensure an adequate number of grantees with zonal representation and a proportional sample was chosen from each DS.

- **Stage Two**

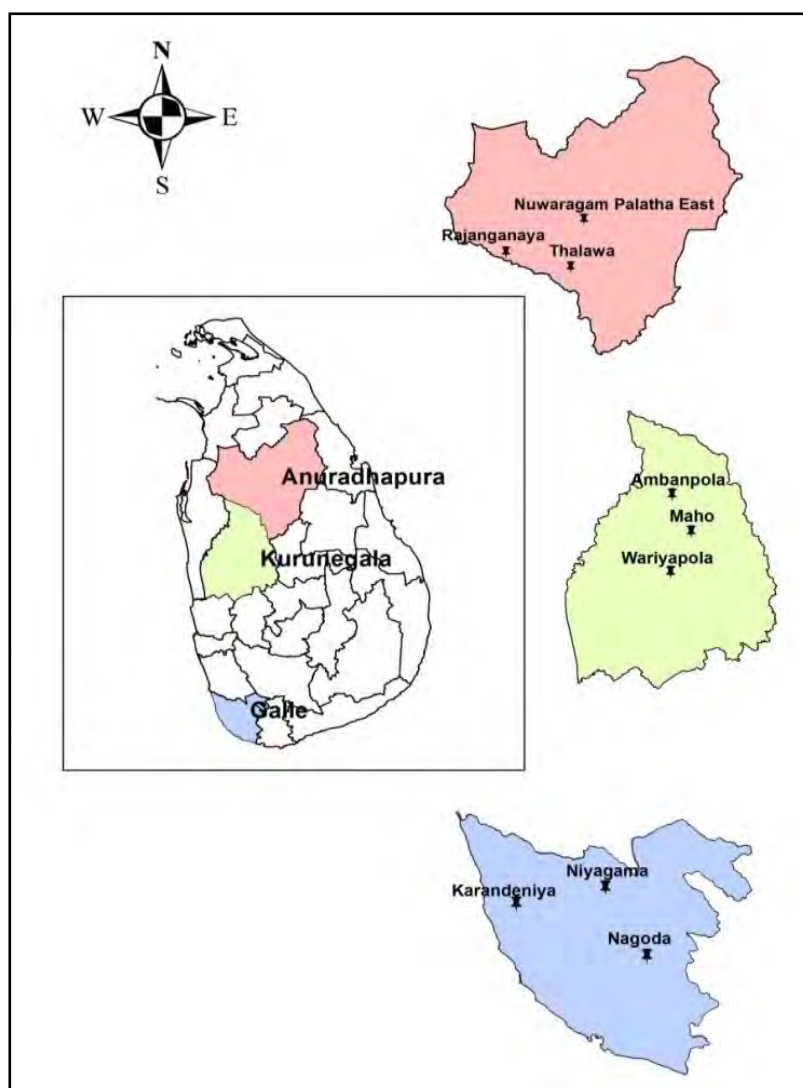
Grama Niladhari Divisions (GNDs) with the highest number of grants disposed were chosen from each DS to select the final sample. For better representativeness of allotments in the sample by the extent of allotments, they were categorized into seven land size classes as shown in Table 3.2. The corresponding extent of allotments were <0.25ac, 0.25ac=<0.5ac, 0.5ac=<0.75ac, 0.75ac=<1ac, 1ac=<2ac and 2ac=<3ac.

- **Stage Three**

The final sample of 401 allotments was selected proportionately from the land size classes for primary data collection using the Simple Random Sampling (SRS) technique. The sample size was derived using the sample calculator (Creative Research System, 2018). Accordingly, the minimum sample size for a 9472 study population at 95 percent confidence level was 401, and it represented 4.2 percent of the total study population. Table 3.3 illustrates the distribution of the proportionate sample and how it proportionately allocated between three DSs selected from each district representing different land size classes. The detailed information on the randomly selected sample from 19 GNDs located in nine DSs in each district is given Appendix 1.1.

3.1.4 Research Unit

Research unit of the study was the highland LDO grantee whose land area is less than three acres and received the land grant during the period 2012-2018.



Source: Author's Illustration based on Survey Department of Sri Lanka, 2019

Figure 3.1: Map of Study Location

Table 3.3: Distribution of Sample across Districts and Divisional Secretariats

Zone	District	Divisional Secretariat	Sample	Total Sample
Dry Zone	Anuradhapura	Rajanganaya	79	184
		Nuwaragam Palatha East	55	
		Thalawa	50	
Intermediate Zone	Kurunegala	Mahawa	50	135
		Ambanpola	43	
		Wariyapola	42	
Wet Zone	Galle	Nagoda	44	82
		Karandeniya	22	
		Niyagama	16	
Total			401	401

Source: HARTI Survey Data, 2019

3.2 Operationalization of Variables in Objectives

3.2.1 Specific Objective 1: Identifying the prevailing residential patterns and the nature of land development in LDO allotments

Land alienation attempts to address the landlessness of the people in the country and hence one of the main objectives of LDO is to fulfill the residential needs of the people. Therefore, the LDO beneficiaries get an opportunity to secure a piece of land for occupation under this policy framework. Hence, it is important to determine the residential characteristics of the beneficiaries in order see whether they are living a reasonably convenient life in those allotments. In order to assess the living patterns of LDO allottees¹², the aspects assessed are listed in Table 3.4.

Table 3.4: Variables Used to Measure the Residential Characteristics

Variable	Meaning	Measuring
Number of families live in LDO allotments	To have an idea about how the LDO allotments utilized to fulfill the living purpose with the total number of families live at present	A quantitative variable and was measures by taking the total number of families lived in the allotment
Size of the family	This refers to the number of family members live in the LDO allotment at present	A quantitative variable and measures by getting the count of total number of family members lived in the allotment
Family Density	This refers to how many families live in an unit of residential allotment	This is a ratio measure by dividing the total number of families by the total number of residential allotments
Number of generations live in the allotments	How many generations represent from the total family members is considered as the amount of generations in the allotment	A quantitative variable and measures by getting the count of generations
Fragmentation of allotments	Land fragmentation is considered as the subdivision of original allotment into two or more sub-plots by demarcating the boundaries by the residents live in the allotment	A quantitative variable and measures by counting the total number of sub-divided plots in the original allotment
Fragmentation Ratio	This refers to how many sub-divided land plots result from the total original allotments	Measures as a ratio to total number of sub-divided plots to original allotments

¹² Allottees refer to those occupy land allotments granted under LDO

Table 3.5: Variables Assessed the Housing Characteristics and Facilities of LDO Beneficiaries.

Characteristic	Variables and Measuring	
Housing qualities	Nature of the house	Qualitative variable measured based on nature of house; number of stories, completeness and permanency of the house
	Size of the house	Number of rooms available in the house
	Nature of roof, floor and walls of the house	Qualitative measurement; considering materials used to construct the roof, floor and wall
	Fencing and demarcation of boundaries	The availability and the nature of land marks and fences used to demarcate the land boundaries
Housing facilities	Water supply	A qualitative variable; Types of water sources fulfilling the water requirement of the families
	Sanitary facilities	The availability of toilets for the use of residents in the allotment and their positioning and the nature
	Source of energy for lighting	The different types of energy sources available in the houses to fulfill the lighting requirement
	Source of energy for cooking	The sources of energy used for cooking purposes in the houses by the residents
Livelihood support facilities	Businesses and self-employment activities	How the residential lands used for income generating activities as businesses and self-employment ventures and their types

Apart from the information on occupants the housing quality was assessed using a scoring matrix constructed based on the housing characteristics and facilities. Housing characteristics considered were material used for the construction of the roof, wall, and floor, the number of rooms, source of drinking water, energy source of cooking and the nature of lavatories. The Appendix 3.1 descriptively indicates the parameters used to construct the scoring matrix. The data were gathered based on three-point Likert scale one, two and three where one and three equals to minimum and maximum quality of housing characteristics and facilities respectively. All the scales were summed up to get the overall score for each allotment. Thus, the minimum and maximum possible scores were seven and 21 respectively. Accordingly, three categories of residential status were identified based on the value of the scoring matrix as poor, average and above average as illustrated below in Table 3.6. The quality of houses in the LDO allotments was comparatively assessed based on the value of scoring matrix using Kruskal-Wallis non-parametric test.

Table 3.6: Housing Quality of LDO Allotments

Quality of Living Score	Living Condition
7-11	Poor
12-16	Average
17-21	Above Average

Source: HARTI Survey Data, 2019

3.2.2 Specific Objective 2: Assessing the nature and extent of existing agricultural activities implemented in the LDO allotments

Agricultural development of state lands was assessed as the other specific objective of the study on LDO policy framework. The LDO grantees are responsible for the development of agricultural activities of the allotment while deriving the benefits from such undertakings. In order to do the assessment, the data on those aspects were gathered through a questionnaire during the field survey and *via* direct observations of each allotment. The land utilization for agricultural development was studied under two distinct scenarios namely, land used for residential purpose and land used for agricultural purpose. The following variables were considered in the assessment of agricultural activities undertaken in LDO allotments.

Table 3.7: Variables Used to Measure the Agricultural Activities

Variable	Meaning	Measuring
Types of crops/animals	To identify the availability of various types of crops (seasonal, perennial) and animals in the LDO allotments	A qualitative variable to categorize the crops and animals by their names and types
Number of crops or animals	To identify the total number of crops and animals in the LDO allotments	A quantitative variable to measure the total number of crops and animals
Extent of cultivation	To identify the cultivated extent of crop varieties in each LDO allotment	A quantitative variable to measure the extent of cultivated area in acres
Crop or livestock production	To assess the yield of crops cultivated or the production of animal husbandry for defining the production of LDO allotments	A quantitative variable to measure crop or livestock production in kilo grams, nuts, liters and number of eggs
Income	To assess the economic value of agricultural outputs in the LDO allotments	A quantitative variable to measure the income in rupees

The assessment was carried out by estimating following characteristics:

- a. Total Cultivable Extent (TCE) of Residential Allotments was calculated using the data gathered on extent of cultivation using the following equation (Equation 1)

Equation 1:

$$\text{TCE} = \text{Total Extent of Allotement} - \text{Total Extent with Constructions}$$

- b. Cropping Intensity Index (CII)

CII was calculated to quantify how intensively the allotments have been utilized for agricultural activities as exhibit using the following equation (Equation 2) and this was calculated for both home gardens and agricultural allotments of the sample.

Equation 2:

$$\text{Cropping Intensity Index (CII)} = \frac{\text{Total Cultivated Extent of Allotement}}{\text{Total Cultivable Extent of Allotment}} \times 100$$

The major issues faced by landholders in land use and development and the possible suggestions to overcome those problems were collected to further enrich the research findings.

3.3 Data Analysis and Analytical Techniques

The data collected were coded, entered and analyzed using both descriptive statistics with tables and graphs and inferential tools using Microsoft Excel and Statistical Package for the Social Sciences (SPSS) software version 23.

3.4 Data and Data Collection Methods

Both primary and secondary data collection methods were employed as described in proceeding sections 2.4.1 and 2.4.2 in this study.

3.4.1 Primary Data Collection

A field survey was conducted by administering a pre-tested semi-structured questionnaire to collect the data from the sampled grantees. The research team of the HARTI involved in collection of data through personal interviews conducted with LDO grantees.

Face to face and over the telephone (KIIs) conversations were conducted with the key personal related to the state land administration starting from Commissioner General of LCGD to GN in each GND, including Land Commissioners, Assistant Land

Commissioners, Divisional Secretaries in each DS selected, Colony officers/Land officers.

3.4.2 Secondary Data Collection

The secondary data, which played an important role in strengthening the research output, were collected using online sources, published reports, research articles and publications of government organizations, including Department of Census and Statistics (DCS), LCGD and DSs.

CHAPTER FOUR

General Information of the Study Sample

4.1 Introduction

This chapter is devoted specifically to discuss the socio-demographic characteristics of the sampled LDO grantees with particular reference to land related information. The total number and the extent of allotments distributed among three districts, categorical variation of allotments and the key uses of land are major aspects discussed under the land information in this chapter. Some socio-demographic information of the study sample is also included for discussion herein.

4.2 Distribution of LDO Allotments and Variation of Different Categories of Land Extent in the Study Areas

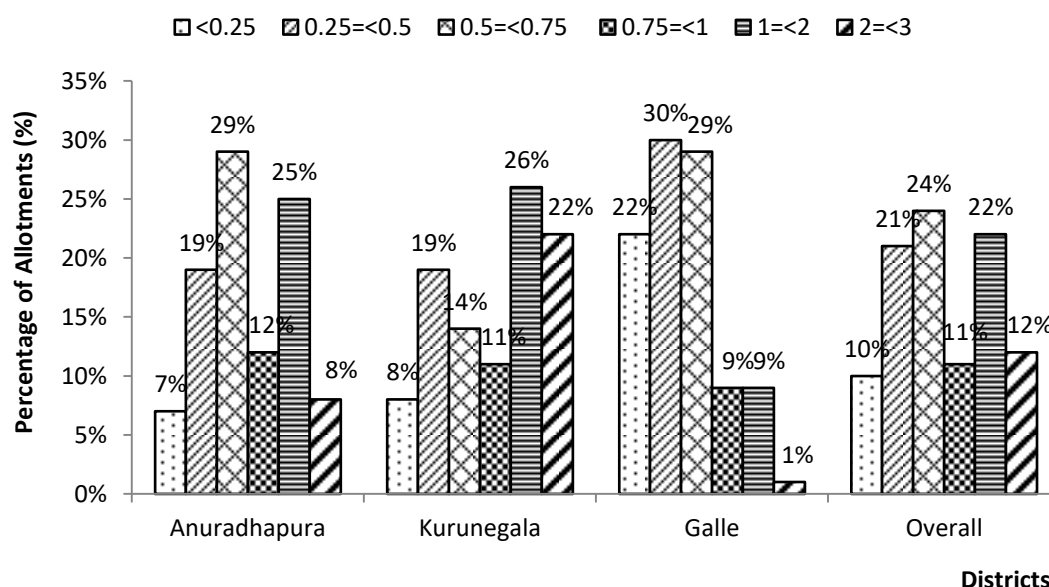
The study locations represent the districts with the highest distribution of LDO grants in major climatic zones during the period 2012-2018. The sample covers a total of 401 allotments outspread in an area of 337 acres in three districts, Anuradhapura, Kurunegala and Galle. Table 4.1 presents the extents of these allotments in each district. The data witnesses a wide variation in the extent of allotments distributed across districts. The extent of the allotments range within 8-400 perches. Kurunegala district registered the highest average extent of allotments with 168 perches.

Table 4.1: Descriptive Data of LDO Allotments of the Sample

District	No of Allotments	Extent of Allotment (Perches)			
		Total	Minimum	Average	Maximum
Anuradhapura	184	24,229 (151ac)	20	132	400
Kurunegala	135	22,653 (142ac)	14	168	395
Galle	82	7,110 (44ac)	8	87	350
Total	401	53,992 (337ac)			

Source: HARTI Survey Data, 2019

Among all allotments of the sample the highest percentage fell in to the extent category of 0.5=<0.75ac (24%) and the lowest in to <0.25ac (10%) category. As shown in Figure 4.1, around two third of sample allotments (66%) has been less than one acre. The distribution of smaller allotments was relatively high in the Galle district with 22 percent being less than 0.25 acres in extent. Large allotments (> 1.0ac) are predominant in the Kurunegala district (48%). A significant variation was observed across three districts in the distributional pattern of the land categories [F (2,398) = 22.198, P=0.000].



*Land size category is in acres

Source: HARTI Survey Data, 2019

Figure 4.1: Distribution of LDO Allotments by Different Land Size Classes in Anuradhapura, Kurunegala and Galle Districts

4.3 Land Use Pattern of the Allotments

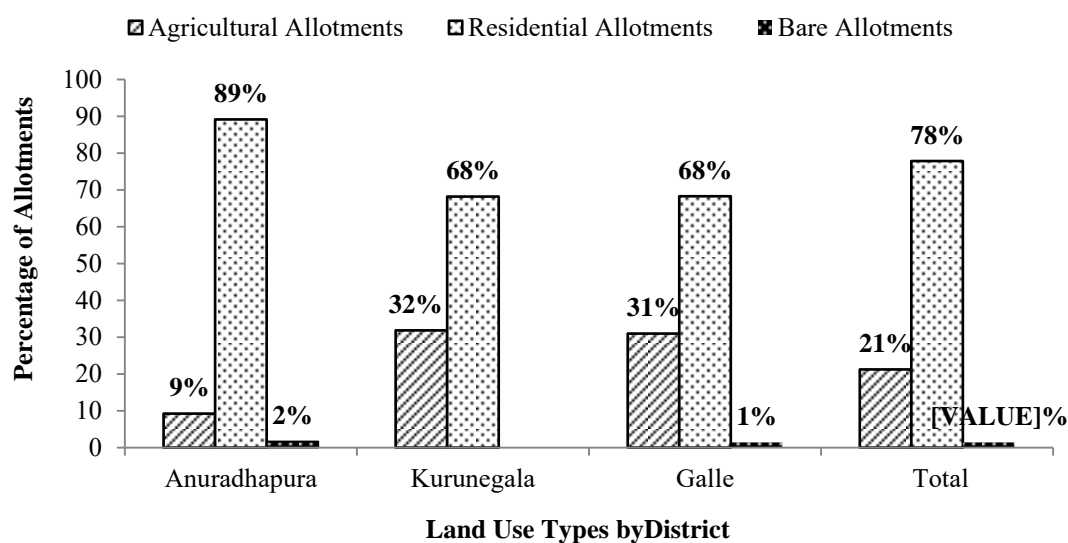
As described by Moore in his famous book 'The State and Peasant Politics in Sri Lanka' in 1985, the term "cultivation" in Sri Lanka was described as an extremely ill-defined activity. Because, every household prefer to grow at least one or few coconut trees and other useful plants in their homesteads. As per information gathered in the research, the land types were categorized into three main categories as

- i. Agricultural Allotments: Allotments entirely used for cultivation purpose
- ii. Residential Allotments: Allotments used for both cultivation and residential purposes, including home gardening and other income earning ventures
- iii. Bare Allotments: Not used for any of the above purposes over a long period of time

Majority of allotments (78%) (N=312) in the sample were used for residential purpose along with home gardening (Figure 4.2). The allotments (N=164) in the Anuradhapura district were mostly used for living purpose when compared to same in other districts. People living in these allotments have fulfilled their living requirements by constructing houses with sanitary and other infrastructural facilities. Home gardening has been carried out in areas after constructing buildings to facilitate day to day requirements of the households. Some residential allotments have allocated space for animal husbandry (12%) and other income generating activities (10%) such as small businesses and employment activities. There was a

significant variation in the way the lands have been used for different purposes among districts [$F(2,398) = 10.732, P = 0.000$].

There were 85 allotments in the sample used for agricultural purposes accounting for 21 percent of the total number of allotments where both annual and perennial crops have been cultivated at different scales. Kurunegala has the highest number (43) such allotments while Anuradhapura has the least (20). It is noteworthy that only one percent of the allotments left undeveloped and unoccupied for a long period and that is mainly because of lack of water for cultivation.



Source: HARTI Survey Data, 2019

Figure 4.2: Distribution of LDO Allotments by Land Use Types Among the Three Districts Anuradhapura, Kurunegala and Galle

4.4 Current Users of the LDO Allotments

The study revealed that 88 percent of the LDO allotments are still being used by the original grantees with their families. The types of families comprise 73 percent nuclear families, and the rest (27%) extended families consist of parents, children or grandparents. District-level analysis ascertained that there is no significant difference in the pattern of residence in terms of types of families in the LDO allotments among the three districts [$F(2,398) = 0.285, P = 0.752$]. This follows that the majority of the allotments alienated under LDO has been used by the original grantees themselves and only twelve percent has been currently used by non-grantees¹³ for various reasons such as in the event of the death of the original grantee (6%), giving legal rights of the allotment to children or relatives (3%), and renting out or selling outright.

Percentage distribution of occupancy of the LDO grantees is as follows:

- Original grantee (88%),
- Children of the grantee (9%),

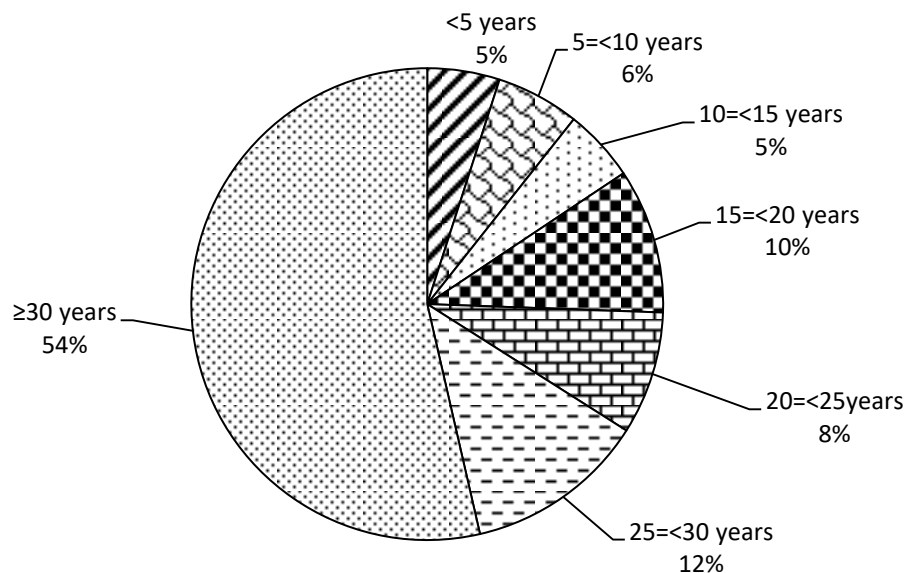
¹³ Non-grantees refer to those who currently occupy LDO allotments other than original grantees.

- Spouse of the grantee (1%),
- Relatives (1%), and
- Non-relatives (1%)

This indicates that 99 percent of LDO allotments still remain within the family or the kinship of the original grantees. Only one percent (four allotments) of the total allotments had been sold to non-relatives. As per the LDO in 1935, it is prohibited¹⁴ to sell LDO allotments. At the time of the study, the original grantees of the allotments that are being occupied by non-grantees are living with other children either in the same village or another. Moreover, most of the non-grantees had neither any legal evidence to prove their ownership of the allotments nor any interest in having legal ownership.

4.5 Duration of LDO Lands Used and Grants Received

The duration¹⁵ of lands used by both grantees and non-grantees range from 3 - 72 years and the majority (54%) has been over 30 years (Figure 4.3). Among the interviewed allottees about 75 percent has been using the land for more than 20 years. Only five percent of the allotments have been used for less than 5 years. This clearly emphasizes that the LDO allotments have a considerably long history of land use, though grants were issued recently, suggesting that lands were used by the allottees over a long period irrespective of the status of tenancy of the LDO allotments.



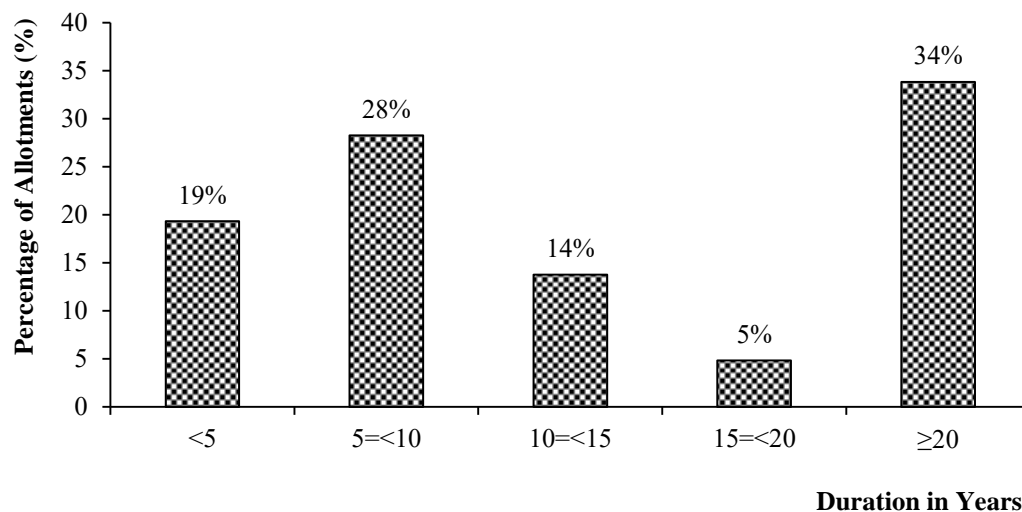
Source: HARTI Survey Data, 2019

Figure 4.3: Distribution of LDO Allotments by Duration of Land Use

¹⁴ The disposition of LDO holding to any other person is prohibited under the ordinance except with the prior permission in writing of the Divisional Secretary (LDO, 1935)

¹⁵ Refers to the total number of years from the initial year of residing/using/having access to LDO allotment to the year 2019 on which this assessment was carried out.

As illustrated in Figure 4.4 majority of grantees (34%) have received grants 20 years or more after receiving their land permits and the analysis revealed that the lapse between the issuance of the permit and the grant range from zero to 64 years with an average of 15 years. The average lag times in the three districts are 15 years in Anuradhapura, 13 years in Kurunegala and 18 years in Galle. Few grantees (3%) have received both permits and grants in the same year. These differences of lag times among the districts are statistically significant [F (2,266) = 3.347, P = 0.037] corresponding to the period of land alienation in the respective districts indicating that there is a long lapse between the issue of permits and grants in the land alienation procedure. The inefficiency of the relevant authorities involved in land alienation process and the less ambitious nature of the land users for getting the grant have been the main reasons for the delay in receiving grants for LDO allotments.



Source: HARTI Survey Data, 2019

Figure 4.4: Distribution of LDO Allotments by Duration between Permit to Grant

4.6 Socio-Demographic Information of the Study Sample

In the sample of LDO allottees only 374 grantees (93%) were alive at the time of conducting the survey. The death percentages were three percent in Anuradhapura and two percent in both Kurunegala and Galle districts (Table 4.2). The main reason for the death of these grantees was aging as they are the first generation to receive LDO allotments. It became evident that lands of these deceased grantees are now being utilized by their children, spouses or other relations.

The grantees in the study sample comprised 282 (70%) males and 119 (30%) females. Majority of grantees (88%) currently occupying the allotments are over 40 years of age. The level of education of the grantees is mostly between grade six to eleven (56%). Among the rest 22 percent studied up to grade five, sixteen percent reached advanced level and six percent without any formal education.

The grantees engage in various income generating activities, predominantly farming. In the study sample 51 percent are involved paddy cultivation and farming OFCs, vegetables and plantation crops such as coconut, tea and cinnamon. Kurunegala district predominated with more farmers (60%). Among the grantees sixteen percent work as laborers eleven percent involve in small businesses and self-employment activities.

The monthly household income has been calculated by adding the income generated by all members in the household through primary and secondary employment activities including all other sources of income. As shown in Table 4.2 it is apparent that most grantees (57%) fall into the lowest monthly household income category of Rs. 10,000-30,000. The mean monthly household income of the sample population has been Rs. 30,646 and this significantly varies ($F(2,229) = 3.992, P = 0.02$) among districts, Anuradhapura (Rs. 34,791), Kurunegala (Rs. 26,403) and Galle (Rs. 26,471).

Table 4.2: Demographic Characteristics of the Study Sample of LDO Grantees

Characteristics	Anuradhapura %	Kurunegala %	Galle %	Overall %
Sex				
Male	66	72	77	70
Female	34	28	23	30
Total	100	100	100	100
Age (Years)				
40-59	53	42	43	47
≥60	30	48	55	41
20-39	17	10	2	12
Total	100	100	100	100
Formal Education				
Grade 6 – Grade 11	52	60	57	56
Grade 1 - Grade 5	25	23	16	22
Up to A/L and above	16	11	22	16
No formal education	7	6	5	6
Total	100	100	100	100
Employment				
Farming	43	60	52	51
Laborer	18	12	18	16
Small business	15	9	7	11
Private sector employment	5	9	11	8
State sector employment	12	2	5	7
Skilled employment	7	8	7	7
Total	100	100	100	100
Monthly Household Income (Rs.)				
10000-30000	54	59	63	57
30001-50000	30	21	14	24
≥50001	14	6	10	11
<10000	2	14	13	8
Total	100	100	100	100

Source: HARTI Survey Data, 2019

4.7 Summary

The sample covered 401 proportionately selected LDO grantees from Anuradhapura, Kurunegala and Galle districts, respectively representing dry, intermediate and wet climatic areas of the country. Majority of grantees in the sample were middle aged males with poor educational attainment. They are mostly farmers and there was a smaller number working laborers in both agricultural and non-agricultural sectors to earn their living.

The study covered a total area of the 401 highland allotments with an area around 337 acres. The extent of the allotments was mostly less than an acre. These extents varied significantly among districts with Kurunegala having the larger number of allotments while the Galle the lowest. In terms of land use most allotments falls under the category of residential allotments (78%) while 21 percent belonging to agricultural and 1 percent being bare lands. The bare allotments has been remaining unutilized over a long period of time due to lack of facilities (e.g. water, road access) for cultivation and development. The residential allotments have been developed by constructing houses and making the environment suitable for living, while maintaining home gardens and other income generating ventures such as animal husbandry, small businesses and self-employment activities in varying degrees in remaining adjoining areas with available resources. Agricultural allotments consist of both annual and perennial crops either as mono-cropping or mix cropping.

Land alienation as of today defined as a process that confirms the tenancy of the permit lands rather than distributing land among landless people (LDO 1935). Whilst most of the grantees had access to more than a single piece of land, this leaves the question whether grantees are really landless? Majority of the grantees have been utilizing the lands over two decades. Illegal transactions in LDO lands have been minimal indicating that people do not have much interest on selling the allotted lands since land ownership in the rural setting is considered as a symbol of the prosper. Hardly any grantees have been encouraged to sell the allotments to outsiders other than to those with kinship. The long duration of the legal process of the state agencies in transferring the ownership of alienated allotments has been a major constraint identified in this study.

The huge gap between the issuance of permit and grant has been a long delay in the land alienation process over a long period of time. Sometimes, this may happen due to political reasons. However, there can be instances where the LDO permit holders when get the ownership of their land they may not be landless since the gap is so long that they may have access to other lands.

CHAPTER FIVE

Residential Pattern and Development of LDO Lands

5.1 Introduction

Lands were granted to a large number of rural peasants through land alienation programs in Sri Lanka over several decades. During this land alienation process, the landless families were initially given a plot of land with a permit and subsequently with a grant of permanent ownership depending on how satisfactorily the land was utilized. Chapter four presented information about two main aspects on lands allotted during the period 2012-2018 under LDO, explicitly residential and development activities undertaken by the awardees. At the time of the survey, only 312 out of 401 allotments (78%) were used by the original grantees¹⁶ or other parties for dwelling purpose and those allotments were considered as residential¹⁷ allotments. The theme of this chapter is to discuss and highlight the residential pattern, duration of land utilization, number of families residing, family size and generations currently residing in those residential allotments. Furthermore, this chapter deals with the fragmentation of allotments based on 52 (13%) allotments identified as fragmented allotments during the period of this study. Further under development aspects, this discussion reports on housing characteristics and facilities, easy access roads and status of boundary demarcation with respect to all the allotments in the study sample. The entire discussion will focus on emphasizing the status of the quality of life of the people currently dwelling in these land allotments.

5.2 Number of Families, Family Size and Generations Living in LDO Lands

The study revealed that there are 408 families currently residing in 312 residential allotments. Accordingly, the average family density of the sample was 1.3, and on district wise the average was same (1.3) in both Anuradhapura and Kurunegala districts while it is 1.2 in the Galle district. Based on the assessment, majority of residential allotments (72%) are being occupied by a single family while 24 percent by two families and the rest (4%) by three families.

The size of families occupied in residential allotments varied between 1-12 members. Among the occupants 73 percent were nuclear families and 27 percent were extended families with parents, children and grand-parents. The average family size of the sample was three with and no significant variation between the three districts [$F(2,309) = 1.517, P = 0.221$]. The study sample consisted of occupants of several generations with a maximum of three. Families with two generations were the highest (59%). These findings related to number of families, family size and generations clearly suggest that land alienation has immensely contributed to fulfill the residential requirements of the LDO beneficiaries.

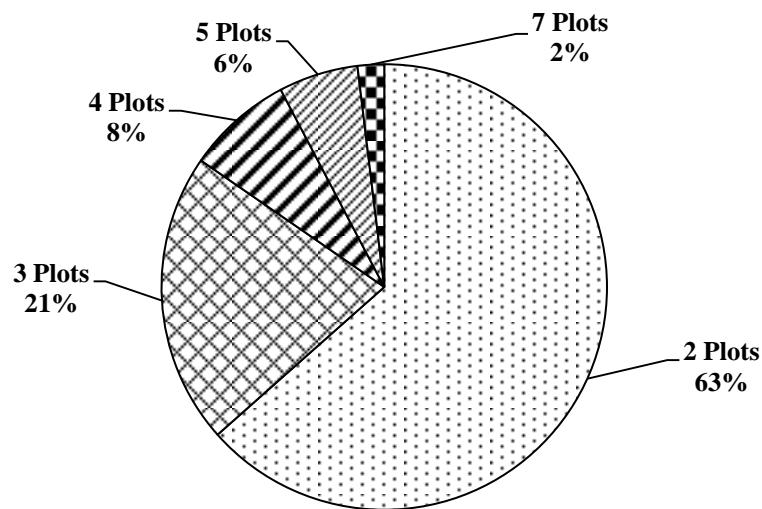
¹⁶ The grantees who first received the grants for the LDO allotments considered for this analysis.

¹⁷ Chapter four of this report defines 'residential allotments'.

5.3 Fragmentation of LDO Lands

For this description, land fragmentation is defined as the subdivision of the original allotments into two or more plots, demarcated by boundaries either formally¹⁸ (61%) or informally¹⁹ (39%) for residential purpose by constructing houses or for agricultural use by children, relations or non-related persons. In the study sample 52 (13%) out of 401 allotments have been fragmented and among these 96 percent (50) have been used for residential purpose. The remaining two allotments (4%) were agricultural lands. There were 137 plots after fragmentation with a fragmentation ratio of 2.6. Figure 5.1 illustrates the pattern of land fragmentation of the allotments assessed in the survey.

It is evident from the assessment that most of the allotments (33) have been divided into two plots, while the rest into more than two (Figure 5.1). The fragmentation of allotments into a large number of plots was a rare occurrence unless the original allotments are relatively larger as confirmed through the statistical evidence where land fragmentation is significantly associated with the size of the allotment ($\chi^2(2, N = 401) = 9.599, P(0.008) < 0.05$). In the Galle district, a cinnamon cultivated land of 130 perches, distributed among 7 children of the family by dividing into seven plots was observed. The analysis also revealed that the purpose of land fragmentation was successful in fulfilling the residential needs of the family over generations irrespective of the size of the allotments ($\chi^2(2, N = 50) = 7.576, P(0.023) < 0.05$).



Source: HARTI Survey Data, 2019

Figure 5.1: Distribution of LDO Allotments by Number of Plots after Fragmentation

¹⁸ Formal division is meant by demarcating the land boundaries of sub divided plots in the allotment after doing proper measurement by a surveyor.

¹⁹ Informal division is the separation/demarcation of sub plots in the allotment without proper measurements according to the own dimension.

Table 5.1 illustrates the variation in the number of fragmented lands with different land size classes. Accordingly, the highest amount of fragmented lands out of 52 (35%) falls under the land size class of 1=<2 acres.

Table 5.1: The Variation of Number of Fragmented LDO Lands by Different Land Size Classes

Category No	Land Size Class (Acres)	Total Number of Allotments	No of Fragmented Allotments	Percentage out of Total Allotments (%)	Average Size of Fragmented Allotments (Perches)
1	<0.25	42	2	5	18
2	0.25=<0.5	86	9	10	26
3	0.5=<0.75	97	9	9	30
4	0.75=<1	43	5	12	37
5	1=<2	88	18	20	86
6	2=<3	45	9	20	111
Total		401	52	13	66

Source: HARTI Survey Data, 2019

In the sample more than half of the fragmented allotments (52%) were larger than one acre. The least land fragmentation amongst the allotments was observed in the land category 1 (minimum land area is less than 0.25 acres).

Majority (80%) of the grantees in the sample were not aware of the minimum unit (area) of sub-division²⁰ allowed for each DS in the district as per the provisions of the grant document. According to this document the average minimum size of the unit approved for sub-division in Anuradhapura, Kurunegala and Galle districts is 13, 14 and 12 perches respectively averaging 13 perches per unit. Therefore, it appears that the minimum unit of sub-division has not exceeded in the sample of allotments considered for the analysis. However, the trend of the subdivision continues and therefore there is a possibility for exceeding the minimum unit of sub-division before long since already 12 percent of allotments have reached the extent of minimum unit of the subdivision.

5.4 Land Development

5.4.1 Housing and other Constructions in LDO Lands

One of the key expectations of land alienation is to grant state lands to landless people for utilizing on residential purposes. Thus it was envisaged that the grantees would convert the allotments suitable for human inhabitation for ensuring a better quality of life. Construction of houses require facilities such as water through wells or any other sources, energy and sanitation to satisfy basic needs for better quality of life. Fencing around the allotment has also been a long-held tradition. These are the

²⁰ Minimum unit of sub-division refers to the minimum extent of the land that can be sub-divided from the original allotment as mentioned in the grant document.

key land development measures that a permit holder should satisfy to become eligible for the grant. The survey revealed that 312 residential allotments had 404 constructions of different kind. Those included 379 houses, 13 small boutiques, 6 premises for small businesses and self-employment, 5 sheds for animal husbandry, and one warehouse. This suggests that LDO allotments given for residential purposes have been successfully utilized to a great extent, satisfying the intended target; grant state lands to landless people for residential purpose.

5.4.2 Development Status of Constructions in the Allotments

Table 5.2 illustrates the distribution of attributes of constructions²¹ built in LDO lands and Appendix 5.1 presents the breakdown of these attributes in the three districts Anuradhapura, Kurunegala and Galle.

The prominent features of the constructions are summarized below.

- **Number of Stories:** Majority (96%) of houses construed in three districts were single storied. The rest of the houses are multi-storied (10, 2 and 4 in Anuradhapura, Kurunegala and Galle districts respectively).
- **Size of the Houses:** Among the houses observed majority (83%) are having more than two rooms. The predominant category was the houses comprising five to six rooms (40%). Another 15 percent have seven or more rooms. There was no significant variation in the number of rooms among districts although there was a significant association between size of the house and size of land ($r = 0.163$, $n = 382$, $P = 0.001$).
- **Completeness:** Among the houses surveyed 56 percent have been fully constructed. The rest of the houses were incomplete with unfinished walls, floors, roofs, toilets and bathrooms. In some houses there were just one or two rooms constructed while in the rest only the foundation was finished. The number of incomplete houses was relatively a high in the Anuradhapura sample.
- **Permanency:** The percentage of permanent houses in the study sample was 94 percent despite 44 percent houses being incomplete.
- **Roofing Material:** The distribution of houses with the type of roofing materials was tiles (40%), asbestos sheets (49%), metal sheets (10%) and coconut cadjans (1%). This indeed is a positive indication that 89% of the houses were permanently roofed and more importantly with costly material.
- **Floor Material:** Majority of houses have cemented (73%) or tiled (19%) floors while only (8%) have floors finished with clay or cow dung,

²¹ All types of constructions excluding sheds for animal husbandry

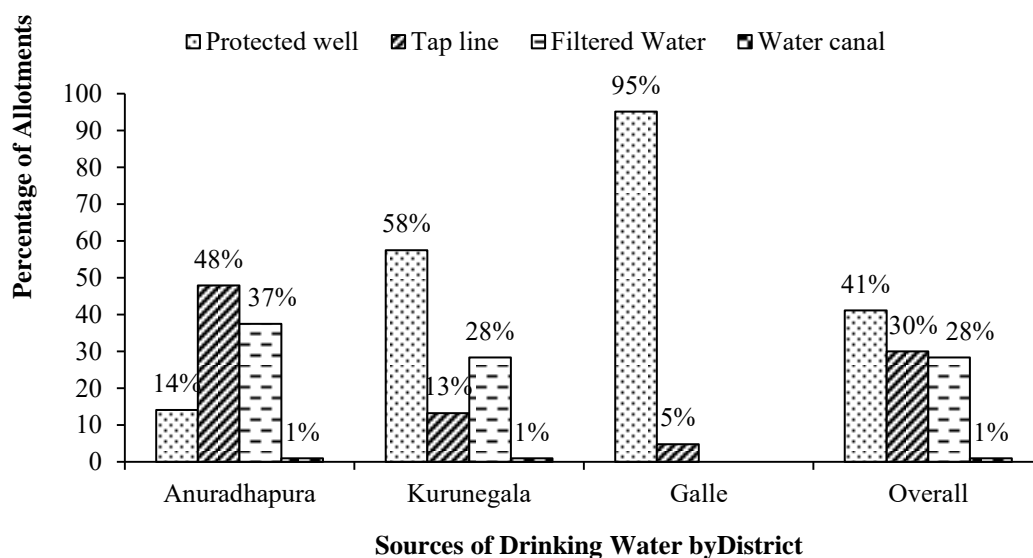
- **Wall Material:** In 75 percent of the houses the inner walls were plastered and in 61 percent of the houses the inner walls were painted. Outer walls were plastered in 71 percent and painted 57 percent. Only 3 percent of the houses had walls made of impermanent material such as clay/coconut cadjans or metal sheets.
- **Water Sources of Allotments:** Availability of water is an essential need for both living and cultivation activities, especially for LDO settlers for effective use of land on par with the objectives of land alienation. The three districts chosen for the study represent three different climatic regions in the country. Therefore availability of natural water sources varies among the locations (Figure 5.2). It became evident in the study that majority of the grantees (66%) had no access to an own water source (e.g. a separate well or a tap line for the allotment to fulfill the water requirement of the family). Therefore, they have to depend on other water sources such as common tap lines, filtered water and water canals. In the Anuradhapura district consumption of water from protected wells (14%) is low because in most of the lands water was scarce without wells and high mineral deposition in the water. Majority of the families (85%) in this district utilize water from common tap lines and filtered purchased from the market, especially for drinking purpose. High prevalence of chronic kidney disease in the Anuradhapura district has been another reason for using filtered water by the people. Meanwhile in the Galle district, which represents the wet zone, households predominantly use water from protected wells (95% residences). In the entire study sample, in 58 percent of the residences fulfilled the drinking water requirement by tap water and filtered water but rather one percent use water from water canals for drinking purpose.
- **Source of Energy for Lighting and Cooking:** Source of energy is another important attribute for assessing the value of a land. In the study sample a great majority of families (97%) use electricity as the main source of energy with no marked variation among districts. A few (3%) use kerosene oil as the energy source (Appendix 5.1). As expected majority of the grantees (63%) use only firewood for cooking while 31 percent use both firewood and LP gas. Only six percent of residents use only LP gas for the cooking purpose. However, widespread use of LP gas instead of firewood is a contrasting characteristic of households in the Galle district and the reason being the abundant availability of firewood in Kurunegala and Anuradhapura districts (Appendix 5.1).
- **Sanitary Facilities:** Sanitary facilities are another important consideration determining the quality of living of the people. In the current assessment the availability of toilets facilities in the allotment, their positioning and nature were considered as determinants for evaluating life's quality of households. In the study sample majority of houses (86%) have fully constructed toilets

either outside (78%) or inside (5%) the house or both (13%) and just a few (4%) had none (Table 5.2). As per further attributes of these toilets assessed, 88 percent fixed with squatting pans, eleven percent fixed with water-sealed commodes and one percent with direct pits (Appendix 5.1). It has been noted that there are no users of pit toilets in the Kurunegala district and nineteen percent having toilets both in and outside the house in the Galle district

Table 5.2: Distribution of Constructions in the Allotments by Characteristics and Facilities

Housing Characteristics (N = 404)	% of Houses	Housing Characteristics (N = 404)	% of Houses
Number of Stories		Inner Wall Material	
Single	96	Painted	61
Multi	4	Un-plastered	22
Completeness		Plastered and Unpainted	14
Fully completed	56	Clay/cadjans/Metal sheet	3
Partially completed	44	Outer Wall Material	
Permanency		Painted	57
Permanent	93	Un-plastered	26
Temporary	7	Plastered and Unpainted	14
Number of Rooms		Clay/cadjans/Metal sheet	3
5-6	40	Source of Drinking Water	
3-4	28	Protected well	41
1-2	17	Tap line	30
≥7	15	Filtered water	28
Roofing Material		Water canal	1
Asbestos sheet	49	Source Energy for Cooking	
Tiles	40	Firewood	63
Metal sheet	10	Firewood/LP gas	31
Coconut cadjans	1	LP gas	6
Floor Material		Toilets	
Cement/Concrete	73	Fully constructed	86
Tile	19	Under construction	9
Clay/Cow dung	8	No	5

Source: HARTI Survey Data, 2019



Source: HARTI Survey Data, 2019

Figure 5.2: Distribution of Houses by Source of Drinking Water in LDO Lands

5.4.3 Housing Quality Score

The living status of the residents in LDO lands was assessed by constructing a scoring matrix based on the housing characteristics and facilities *viz.* material used for constructing roof, wall, and floor, number of rooms, source of drinking water, source of energy for cooking and quality of toilets. The data were scored adopting a three-point Likert scale giving a score of one for the minimum three for the maximum. Thus the minimum and maximum scores vary between 7 and 21. For instance the three categories of residential status identified based on the value of the scoring matrix was done as poor, average and above average. The matrix score of the sample range from nine to 20 with an average of 15.

As presented in Table 5.3 among the LDO settlers 95 percent enjoy average or above-average quality of housing. Those who are living in temporary houses or houses constructed with impermanent material and without having access to basic housing facilities are just 5 percent. The Kruskal-Wallis non-parametric test provides very strong evidence of differences ($P=0.000$) between the mean ranks of at least one pair of the districts at 0.05 significant level with respect to living conditions of LDO grantees. Dunn's pairwise test revealed that there is a difference in living conditions of those in Anuradhapura and Galle district (Adj. $P=0.000$) and Kurunegala and Galle district (Adj. $P=0.000$) while there was no difference between Anuradhapura and Kurunegala district (Adj. $P=0.075$).

Table 5.3: Distribution of Houses by Living Condition across Districts

Quality of Living Score	Living Condition	Overall %
7-11	Poor	5
12-16	Average	66
17-21	Above Average	29
Total		100

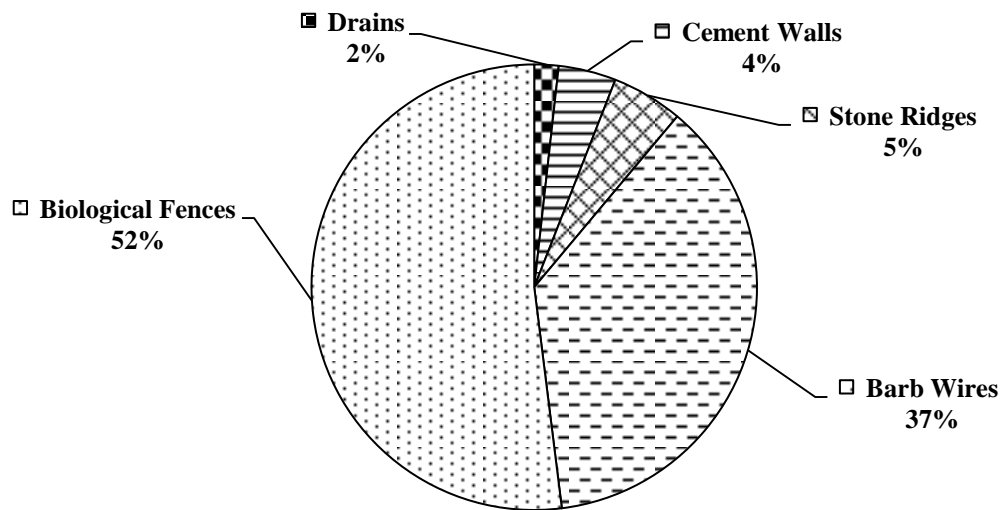
Source: HARTI Survey Data, 2019

According to literature in relation to the state's land alienation the emphasis on residence is generally more appropriate than cultivation to describe the use made of state lands (Moore, 1985). As such, this study paid more attention to look into people's residential status rather than cultivation standing. Literature further provides evidence in favor of homestead plots rather than a farmstead plots as the main motivation in LDO or encroached state lands.

5.4.4 Fencing and Demarcation of Allotment Boundaries

Landmarks and boundaries are very important in demarcating the extent of the allotment. When allotting LDO lands boundary stones are laid by surveyors for each plot of land. Each grantee is expected to build a fence along the boundary demarcated by boundary stones. According to allottees various landmarks such as rocks, trees and concrete posts have been used to delineate the boundaries.

Despite certain instances where boundaries or landmarks are not visible 95 percent of the grantees (95%) mentioned that all the landmarks demarcating their allotments are standing. In rest of the allotments at least one land mark was not observable. Only 42 percent of the allotments have demarcated along the boundaries whereas 29 percent had no such demarcations while the rest 29 percent have at least one boundary demarcation. Bio fencing with *Gliricidia* and *Hibiscus* and barbed wire has been the common barriers of land demarcation (Figure 5.3). In others lands stone bunds, cement blocks and drains serve as boundaries of demarcation. The most common barriers has been barbed-wire fences in the Kurunegala district while stone ridges and drains in the hilly terrain in the Galle district. Only two percent of the allotments had cement walls yet without steel gates at the entrance to the allotments though such gates are common in today's village settings. Instead, there have the traditional hurdle, 'kadulla' at the entrance.

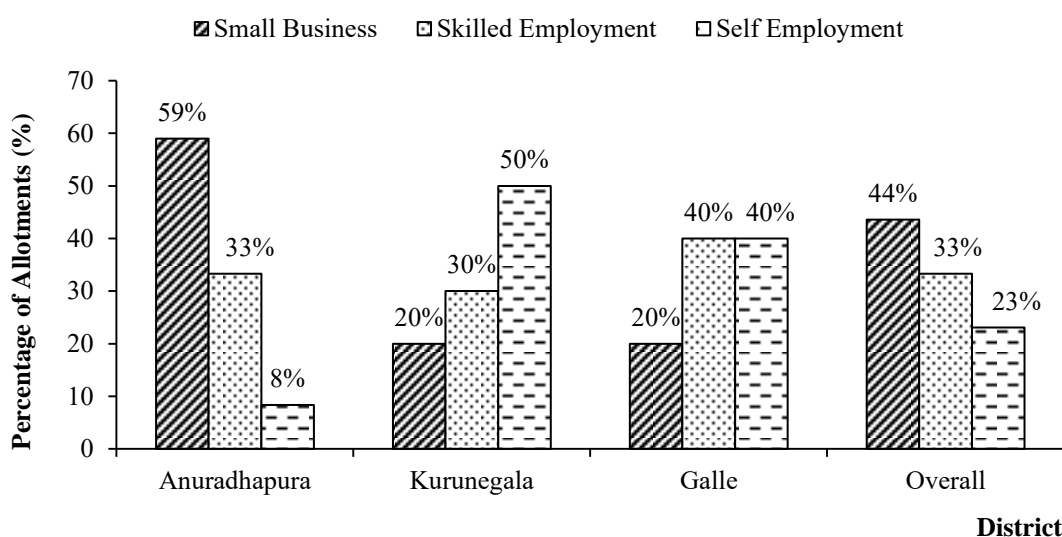


Source: HARTI Survey Data, 2019

Figure 5.3: Distribution of LDO Allotments by the Types of Fences

5.5 Allotments used as Premises for Small Businesses and Self Employments

The survey revealed that 39 allotments (10%) have been used for income-generating purposes other than residential and agricultural uses categorized as three types; premises for small businesses, skilled employment and self-employment (Figure 5.4). Small business premises have been the predominant category which accounted for 44 percent (17 allotments) of the allotments under the category of LDO lands used for other income-generating purposes. Vending of vegetables, fruits and plants, retail shops, and, filtering and distribution of water (Anuradhapura) were among the small business ventures carried out by the occupants. In the three districts common income generating sources has been small businesses in Kurunegala while it has been self-employment in Kurunegala and evenly skilled and self-employment in Galle. Production of cement blocks and other cement made goods, sewing garments, cinnamon barking, carpentry and garages has been the main skill-based occupations ventured LOD allotments. Production of flowerpots, mushroom cultivation and land cleaning has been the common self-employment activities. All these ventures appeared to have contributed to raise an income to the families residing in LDO allotments.



Source: HARTI Survey Data, 2019

Figure 5.4: Distribution of LDO Allotments for other Income Generating Activities

5.6 Summary

LDO grantees appear to have successfully shaped the land environment permitted to them mainly for residential purpose. Living more than one family in a number of allotments imply how efficiently the given land has been utilized for the residential purpose. The quality of the houses built has been considerably pleasing with permanent structures made of tiles or asbestos roofs, plastered inner and outer walls, cement flooring and five to six rooms per house. The attention of grantees for fencing land boundaries was not up to the expectation since their key concern was utilizing the land. It is also noteworthy that majority of occupants has been able to afford electricity as the main source of energy source for lighting the house and other routine activities.

Attending to proper sanitation is also another commendable feature of LDO occupants. Establishment of sanitary facilities has been at a good level with majority having well-constructed latrines. However, inaccessibility to drinking water has been observed as serious constraint encountered by majority of LDO grantees in the Anuradhapura district.

Constructing various structural developments such as ware houses, small boutiques, business and self-employment premises, and animal sheds for enhancing the livelihood of LDO occupants has also been another notable aspect satisfying the objectives of land alienation. Taken together, these findings suggest that land alienation through LDO (1935) has been an immensely successful initiative of the state for fulfilling the residential needs of the landless people.

CHAPTER SIX

Agricultural Development of LDO Allotments

6.1 Introduction

One of the main intentions of LDO is to alienate state lands both uplands and lowlands to the people to develop them by undertaking agricultural activities. The present study focused only on upland allotments distributed amongst the LDO grantees. The emphasis of this chapter is to discuss how those residential allotments²² and agricultural allotments²³ have been utilized for agricultural activities. Among the total of 401 LDO allotments sampled, 312 (78%) allotments were given for the residential purpose collectively with home gardening while 85 (21%) allotments were given only for cultivation. Herein the discussion will focus on to what extent these land categories have been utilized for agricultural activities, and how they differ among districts in terms of crop varieties grown, the animal husbandry activities undertaken, issues encountered by the grantees with respect to land use and development and suggestions made by the grantees towards more effective utilization of LDO allotments.

6.2 Agricultural Development of Residential Allotments

6.2.1 Cultivable Extent in Residential Allotments

As discussed in Chapter 4, majority of the LDO allotments (78%) in the study sample consisted of residential allotments with an average extent of 142 perches. Among the three districts studied the extents varied; Kurunegala 186 perches, Anuradhapura 135 perches and Galle 87 perches (Table 6.1) and the reason being differences in the size of allotments. In the Kurunegala district, size of 53 percent allotments is about 2 to 3 acres per land while in the Galle district size of 81 percent allotments are about 120 perches per land.

Table 6.1 also shows that the average TCE in residential allotments is 133 perches and in 94 percent the average extent of residential allotments is 142 perches. A closer observation of district wise data shows that Kurunegala leads the average TCE with 183 perches (98% of the average land extent) when compared to Galle where the average TCE is 85 perches (97% of the average land extent). Kurunegala stands in the middle with an average TCE of 131 perches. Data indicates the variation in land availability for agricultural development activities among districts and the availability of additional space in residential allotments to use for agricultural purposes. However, apart from TCE the degree of utilization will also depend on availability of resources and prevailing conditions such as water, soil fertility, protection from wild animals, time, labor and money.

²² The agricultural activities undertaken in residential allotments were of home gardening nature.

²³ Agricultural LDO allotments are totally used for crop cultivation activities.

Table 6.1: Average Extent and Total Cultivable Extent of LOD Residential Allotments among Districts

District	Average Extent of Residential Allotments (Perches)	Average Size of TCE in Residential Allotments (Perches)	% of average size of TCE
Anuradhapura	135	131	97%
Kurunegala	186	183	98%
Galle	87	85	97%
Average of Total Sample	142	133	94%

Source: HARTI Survey Data, 2019

6.2.2 Home Gardening in Residential Allotments

Home gardening with many varieties is the prominent land use type in residential LDO allotments. It was observed that the crops grown in Anuradhapura and Kurunegala districts more or less similar and characteristic of low country vegetables such as snake gourd, okra, pumpkin, egg-plant, cucumber and long bean. These are mostly grown in the home gardens in these two districts for day to day consumption. OFCs such as green gram, black gram, cowpea, sesame, finger millet, ground nut, and maize are also with the same purpose. Coconut, banana, cashew, lime, orange, mango, jackfruit, papaya and pineapple are the predominant perennial crops grown in LDO allotments in these two districts. However, it was apparent that water scarcity adversely affects the home garden cultivation in the Anuradhapura district. Home gardening pattern in the Galle district was more diverse since tea, cinnamon, and pepper are largely grown for commercial purposes. The fruit crops such as banana and avocado are also grown in LDO allotments in the Galle district.

6.2.3 Cropping Intensity of Residential Allotments

Table 6.2: Distribution of LDO Residential Allotments by Cropping Intensity Index (CII)

CII (%)	Anuradhapura	Kurunegala	Galle	Overall
	Percentage of Allotments			
<25	21	24	5	18
25=<50	23	24	27	24
50=<75	21	17	20	20
75=<100	23	27	46	29
≥100	12	8	2	9
Total	100	100	100	100

Source: HARTI Survey Data, 2019

CII (fraction of the total land available to the allottee that is used for crop production) as a percentage, was estimated to assess the cropping intensity in LDO allotments in the three districts. According to estimates the average CII of residential

allotments accounted for 61 percent, varying insignificantly among districts (Anuradhapura 61 percent, Kurunegala 56 percent and Galle 67 percent) [F (2,309) = 1.447, P=0.237]. Although the average CII was highest in the Galle district it has the lowest average cultivable land extent (85 perches) compared to other districts. The possible reason for slightly high CII in the Galle district is the intensive cultivation of home gardens in the available limited land space because of the favorable weather conditions. The highest percentage of residential allotments in the study sample are within the CII range 75=<100 (Table 6.2) with Galle district predominating (46%) in the study sample. Interestingly there were no residential allotments with zero CII. According to these data as well as direct observations made by the study group during the survey people living in LDO residential allotments used their land for home garden cultivation to their capacities the overall status of effective use of available land for crop production cannot be considered as effective and sustainable.

6.2.4 Livestock Rearing in Residential Allotments

The survey revealed that peasant community living in LDO allotments has been involved in animal husbandry activities along with home garden agriculture, which give several benefits to the households and farming systems. This integrated farming practice however, has been showing a declining trend among the sample allotments. Only 48 (12%) engage in rearing animals of various kind (i.e. cattle 31 (7.7%), poultry 16 (4%) and buffaloes 1 (0.3%)). The corresponding percentages in the three districts have been 67 percent in Anuradhapura, 23 percent in Kurunegala and 10 percent in Galle.

Table 6.3: Data on Animal Husbandry in LDO Allotments

Type of Activity	No. and % of Grantees N=48	No. of Animals/ Household	Annual Average Production per animal (liters or eggs)	Annual Average Income per animal (Rs.)
Cattle Rearing	31 (65%)	1-15	396	25666
Poultry Farming (Small Scale)	14 (29%)	2-25	108	2306
Poultry Farming (Large Scale)	2 (4%)	400 & 1000	24000	528000
Buffalo Rearing	1 (2%)	4	4950	569250

Source: HARTI Survey Data, 2019.

As mentioned above animal husbandry has been undertaken by grantees as an income earning activity. Cattle rearing has been the most dominant (N=31) particularly among grantees in the Anuradhapura district (71%) than those in other districts. At the time of survey only 25 (81%) grantees out of 31 had their cattle in milking stage while the rest being heifers and calves. The average herd size of cattle

has been five and the range being 1-15. There have been 12 (39%) households having more than five animals. Free range system was the mostly used system for cattle rearing with a few adopting semi-intensive systems under cattle shed. The annual average production of milk per cattle has been 396 liters which is below the national average, 610 liters per cattle (DAPH²⁴, 2009). Table 6.3 gives further details on animal husbandry activities undertaken by the LDO grantees.

Box 6.1: Case Study of a Successful Poultry Farmer in Kurunegala District

R.H.Kiribaiya is a 63 years old poultry farmer who lives in Maho DS division in the Kurunegala district. Currently, he owns an allotment of 150 perches received from his farther by heritage. This land has been used over 39 years of which the ownership was received under the Ranbima grant in 2014. Kiribaiya and his wife are the only members live in this land since their children are married and living separately in the same area. At present this land is used for the residential purpose along with poultry farming and home gardening.

Kiribaiya is an ardent poultry farmer and hence poultry farming has been the key livelihood of the family. He has adequate space in the allotment for poultry farming apart from the area left for the house and home gardening. His poultry farm at present is a large scale undertaking with 1000 layer-chicken keeping in large cages. His wife constantly assists him for feeding the herd daily with layer food rations and supplements. They earn an income of nearly Rs, 44,000 per month from this enterprise, which he has scaled up after receiving the LDO grant to this allotment.

By now, Kiribaiya owns a buddy truck for transporting eggs to nearby shops. Currently, his land is being fully utilized with a completely constructed house, home garden with nearly 80 coconut plants and 20 cashew plants as alternative sources of income. Poultry farm has been the most successful venture. He is highly appreciative about the states' initiative to grant him this LDO allotment as he lives a very successful life because of the valuable land received from the

The LDO grantees engaged in poultry farming have been keeping layer chicken and two of them in the study sample operates at a large scale one keeping 400 and the other 1000 birds. The number of birds per household in small scale poultry farms ranged within 2-25 with the average size being eight. The annual average production of eggs in the sample was 108. From the large scale poultry farms the with 1000 birds produce an average of 24,000 eggs per annum getting an average income of Rs. 528,000. The other farm had small chicks at the time when the study was conducted. The poultry production was predominant (56%) in the sample of the Anuradhapura district, there was just one grantee in the Anuradhapura district reared buffaloes with four animals.

²⁴ Department of Animal Production and Health, Farm Registration Program, 2008/2009
(daph.gov.lk/web/index.php)

6.3 Land Use Pattern of Agricultural²⁵ Allotments

The study sample comprised 85 agricultural allotments amounting 21 percent allotments covering seventeen percent of the total extent of all the allotments. All those landholders used a separate piece of land for their residential purpose. Table 6.4 illustrates the distribution and land use pattern of agricultural allotments among the three districts Anuradhapura, Kurunegala and Galle. The most number of agricultural allotments has been found in the Kurunegala district (43 = 51%) and the least in the Anuradhapura district had the least (17 = 20%). In the Galle district the number being 25 (29%). The average extent of agricultural allotments in the sample was 110 perches which largely varied among districts numbering 111, 126 and 85 Anuradhapura, Kurunegala and Galle districts respectively.

In the study sample 93 percent of the agricultural allotments (N=79) have been utilized for the cultivation purpose at the time when study was conducted. However, the cultivation extent was comparatively less covering only 72 percent to the total land extent of the allotments. Among these, allotments of the Anuradhapura district have been the least under cultivation (59%). Corresponding percentages in Kurunegala and Galle districts have been 79 percent and 72 percent. Annual and perennial crops have cultivated in various scales as mono-cropping and inter cropping some LDO allotments. Accordingly ten allotments have been found with both annuals and perennials. The grantees in Anuradhapura and Kurunegala districts have shown more interest in cultivation of perennial crops in their lands than annual crops mainly due to difficulties in providing water and threat of wild animals.

Table 6.4: Land Use Pattern in LDO Agricultural Allotments among Districts

Description	Agricultural Allotments (N=85)			
	Anuradhapura	Kurunegala	Galle	Total
Total Allotments	17	43	25	85
Cultivated Allotments	14	41	24	79
Uncultivated Allotments	3	2	1	6
Percentage of Cultivated Allotments	82%	95%	96%	93%
Total Extent (ac)	12	34	13	59
Total Cultivated Extent (ac)	7.1	27	9.4	42.5
Total Uncultivated Extent (ac)	4.9	7	3.6	16.5
% of Cultivated Extent	59%	79%	72%	72%
Allotments with Annual crops	3	10	0	13
Allotments with Perennial crops	10	22	24	56
Allotments with both Crop Varieties	1	9		10

Source: HARTI Survey Data, 2019

²⁵ Land use pattern of agricultural refers to LDO allotments which totally used only for the agricultural activities.

6.3.1 Crop Cultivation in LDO Agricultural Allotments

6.3.1.1 Anuradhapura District

The number of LDO agricultural allotments in the nine percent has been engaged in agricultural activities. The area covered by these allottees is just eight percent (12 acres) out of the total extent of agricultural allotments (Table 6.4). Among these 17 allotments only 13 has been cultivated at the time conducting the study. The other four allotments have not been cultivated during the particular year 2018/2019, because of the difficulties in finding water for cultivation.

Table 6.5: Crop Cultivation in Agricultural Allotments in the Anuradhapura District

Crop	No of Cultivated Allotments	Total Cultivated Extent (acres)	Annual Average Yield per acre	Annual Average Income (Rs/ac)
Paddy	2	1	1995kg	72300
Black gram	1	1	150kg	23250
<i>Elabatu</i>	1	0.75	3650kg	164250
Coconut	5	2.57	14040nuts	444624
Cashew	4	1.38	4kg	343275
Mango	1	0.43	2000 kg	25800
Total	14	7.13		1073499

Source: HARTI Survey Data, 2019.

Table 6.5 presents the data on crop varieties cultivated in the agricultural allotments in the Anuradhapura district. The crop varieties consist of both annual and perennial crops. The annuals cultivated at the time of the survey (*Yala* 2018 and *Maha* 2018/2019) have been paddy, black gram and *elabatu* while the prominent perennials has been coconut, cashew and mango. Paddy has been cultivated as a rain-fed crop in the uplands. The perennial crops have been established in nine land plots and in majority of allotments mango has been cultivated as a mono crop. There was just one allotment with cashew established as an intercrop with *elabatu*.

6.3.1.2 Kurunegala District

The types of crop varieties grown in agricultural allotments of the Kurunegala district has been more compared to other districts. This is mainly due to larger number of agricultural allotments in the study sample ((43 out of 85 (51%)) was selected from the Kurunegala district. As revealed from survey 41 agricultural allotments (95%) have been cultivated with different crop varieties. Only two allotments have been remained uncultivated due to lack of water for irrigation.

Annual Crops

Detailed information on annual crops cultivated in the Kurunegala district is presented in Table 6.6. As shown in the table nine types of annual crops have been cultivated in 25 land plots covering an area of 13.7 acres. During the time of survey it became evident that 64 percent of the total area allotted for agriculture development in 10 out of 25 LDO allotments has been up land paddy fields. The annual average yield of these fields has been 1751 kg/ac giving an annual average income of Rs. 63,185 per acre for those engaged in paddy cultivation. Groundnut was the second most prominent seasonal crop cultivated in the allotments of the district. During the survey five land plots sharing fifteen percent of the total land extent has been cultivated with ground nut. The other crops such as cucumber, long bean, sesame, water melon, *kakiri*, snake gourd and finger millets have also been cultivated in small scale. It is noteworthy that watermelon despite being cultivated in just one plot (0.3 acres) predominated with a potential annual yield of 100,000 kg/ac with an annual income of Rs. 300,000 per ac.

Table 6.6: Status of Annual Crop Cultivation in Agricultural Allotments in the Kurunegala District

Crop	No. of Allotments Cultivated	Total Cultivated Extent (acres)	% to Total Extent	Annual Average Yield (kg/ac)	Annual Average Income (Rs/ac)
Paddy	10	8.8	64	1741	63185
Groundnut	5	2.0	15	290	46675
Cucumber	3	0.9	6	9389	144444
Long bean	2	0.4	3	450	142500
Snake gourd	1	0.4	3	62500	137500
Sesame	1	0.4	3	125	21250
Finger millet	1	0.4	3	100	10000
Watermelon	1	0.3	2	100000	300000
<i>Kakiri</i>	1	0.1	1	10000	150000
Total	25	13.7	100	194604	1285554

Source: HARTI Survey Data, 2019

Perennial Crops

Seven types of perennial crops have been cultivated in 39 allotments in an extent of 13.3 acres. Coconut has been the most prominent perennial crop cultivated in 59 percent of the LDO agricultural allotments in the Kurunegala district. Coconut cultivation appears to have occupied 92.5 percent of the land area out of the total land extent under perennial crops. A few cashew cultivations have also been found in LDO lands to a lesser extent. Table 6.7 provides a complete account of land allotments occupied by different perennial crops.

Table 6.7: Status of Perennial Crop Production in Agricultural Allotments in the Kurunegala District

Crop Name	No. of Allotments Cultivated	Total Cultivated Extent (acres)	% to Total Extent	Annual Average Yield per acre	Annual Average Income (Rs./ac)
Coconut	24	12.3	92.5	2846 nuts	79,778
Cashew	7	0.52	3.9	623kg	162,843
Papaw	2	0.25	1.9	4093kg	26,548
Lime	3	0.12	0.9	1474kg	84,632
Orange	1	0.08	0.6	4000kg	120,000
Banana	1	0.01	0.1	38400kg	768,000
Mango	1	0.01	0.1	24000kg	240,000
Total	39	13.3	100		1661801

Source: HARTI Survey Data, 2019.

6.3.1.3 Galle District

The characteristic pattern of the land use in LDO agricultural allotments in the Galle district is given in Table 6.8. The main crops cultivated in the district have been perennials such as tea, coconut, cinnamon, pepper, banana and avocado due in part to favorable soil and environmental conditions in the wet zone. Although the total extent of agricultural allotments accounted for 9.4 acres in the study sample most of those (96%) have been cultivated except for one allotment. Tea has been the most prominent crop cultivated in about 67.1 percent of the total extent. Cinnamon has been the next most planted in about 25.1 percent of the total allocated land for agricultural purposes while banana, pepper, coconut and avocado have been established as mixed crops.

Table 6.8: Status of Annual Crop Production in LDO Agricultural Allotments in the Galle District.

Crop Name	No. of Allotments Cultivated	Total Cultivated Extent (acres)	% to Total Extent	Average Yield per Acre	Average Income per acre (Rs.)
Tea	19	6.3	67.1	3099kg	291,480
Cinnamon	6	2.4	25.1	212kg	367,704
Banana	2	0.4	4.8	16kg	11,253
Coconut	6	0.2	2.5	4523nuts	189,781
Pepper	3	0.04	0.4	823kg	398,222
Avocado	1	0.01	0.1	9600kg	96,000
Total	37	9.4	100		135,4441

Source: HARTI Survey Data, 2019

6.4 Cropping Intensity Index of Agricultural Allotments

Table 6.9 gives a distribution of CII under four percentage classes in the districts, Anuradhapura, Kurunegala and Galle. The overall average of CII for all the agricultural allotments was 85 percent. The district wise estimates, 71 percent in Anuradhapura, 93 percent in Kurunegala and 81 percent in Galle differ significantly [$F(2, 60) = 3.716, P=0.03$]. However, majority of agricultural allotments (85%) have CII values greater than 50 percent.

The CII estimates of the majority of the agricultural allotments in all three districts falls in 75=<100 category. The observations during the field survey and the analysis reveal under-utilization of agricultural allotments at varying extent across districts for various reasons discussed in section 6.5. This finding is in agreement with previously underscored research findings that highland allotments alienated under both on major colonization scheme and village expansion scheme are underutilized (Richard & Gooneratne, 1980 as cited in Moore, 1985).

Table 6.9: Distribution of LDO Agricultural Allotments by Cropping Intensity Index across Districts

CII (%)	Anuradhapura	Kurunegala	Galle	Overall
	Percentage of Allotments			
<25	18	7	8	9
25=<50	18	5	0	6
50=<75	6	7	28	13
75=<100	58	81	64	72
Total	100	100	100	100

Source: HARTI Survey Data, 2019

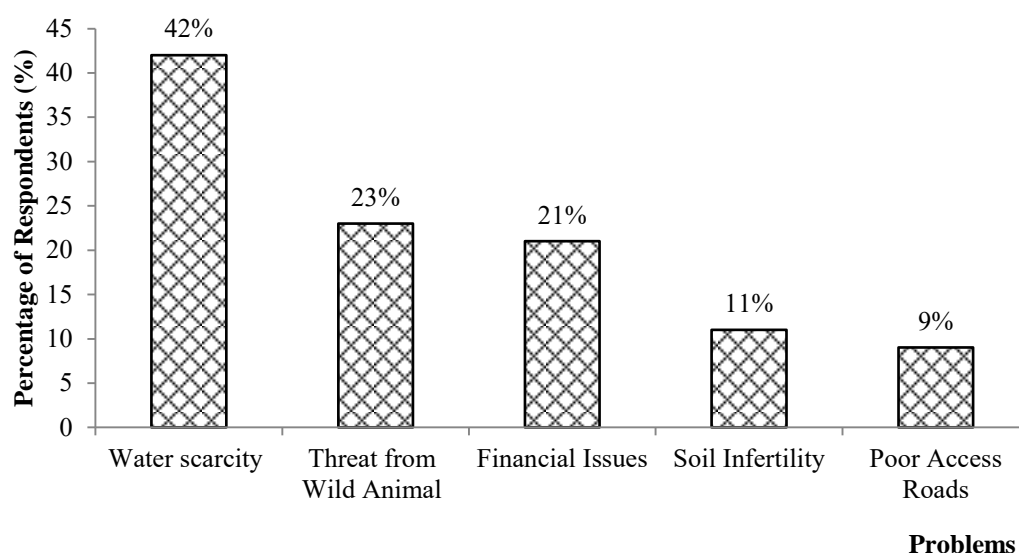
6.5 Issues in Land Use and Development

Figure 6.1 illustrates the issues faced by the respondents with regard to concerning land utilization and development. From here on follows further information on problems raised by the respondents (allottees of the study sample) of the survey.

Water Scarcity: Irrespective of locations water scarcity has been the most prominent concern raised by 42 percent of the LDO grantees. This problem was more severe in the Anuradhapura district as people did not have sufficient water for both drinking and cultivation. Further, it was revealed that the severity of water scarcity is location specific too to a certain extent. For instance, the lift irrigation system²⁶ in Rajanganaya DS division in the Anuradhapura district established for obtaining water from Rajanganaya reservoir during 1970s' for cultivation of vegetables in uplands was ineffective at the time of the study due to most irrigation channels being damaged and dilapidated constraining water supply for upland cultivations. The

²⁶ Lift irrigation system is locally known as 'Ussana warimarga'.

prolonged dry weather condition prevailed during the period 2015-2017 has drastically affected the livelihood of people living in the areas of dry and intermediate zones. Thus, many lands in Anuradhapura and Kurunegala districts became less productive. Besides, the allotments in the Galle district (wet zone) all the other allotments have been affected from time to time due to water scarcity issues related to drinking and agriculture purposes.



Note: The sum of the percentages of respondents exceeds 100 due to multiple problems faced by respondents
Source: HARTI Survey Data, 2019

Figure 6.1: Distribution of Respondents by Issues in Land Use and Development

Threat from Wild Animals: The second most common problem faced by the LDO grantees has been the threat from wild animals brought up by 23 percent of the study sample mainly with regard to food crop cultivation which more copious for settlers in Anuradhapura and Kurunegala districts, where the people scarcely find water for cultivation. Wild animals such as elephants, monkeys, squirrels, pigs, porcupines, peacocks, and parrots destroy their cultivations before they get the harvest. Particularly, the areas in Thalawa DS division have been highly vulnerable to elephant damages; both to human and their food crops since electric fences were inoperative in these areas and needs restoration. Monkeys and squirrels have been destructive for coconut cultivation. This problem is not so conspicuous in the Galle district because majority of crops grown has been non-food crops such as tea, pepper and cinnamon.

Financial Issues: According to 21 percent grantees the occupants hardly can make an investment for land development since their earnings are just sufficient for day to day household needs since most of them depend on farming or working as laborers (67%). This indeed is a common situation prevailing in the country, especially in the rural settings, which has been seriously affecting the development of LDO allotments by the grantees.

Soil Fertility: Suitability of soil fertility has been another constraint faced by LDO allottees in developing their lands. Since the soil characteristics differ in the districts representing three major climatic zones this problem too affects differently for development of LDO agriculture allotments. For instance in the Galle district 53 percent of allotments have fertile soils than those in the other two districts. Soil erosion and long term use of land without proper management of soil (composting) have been recognized as some reasons for soil infertility. It was evident from study that soil of certain allotments (23%) in the Galle district has been severely degraded due to long term cultivation of tea and cinnamon in steep lands which are prone to soil erosion during rainy period. This has caused erosion of top soil making soils to become infertile. The severity of the erosion problem has been less in Anuradhapura and Kurunegala districts due to low rainfall and undulating land scape in the study sites.

Poor Road Access: According to the survey 98 percent of the LDO allotments have road access with just two percent without proper access roads. Even though this has not constrained the development of LDO lands as well as the quality of life of the people the lands without road access belonged to the category of agricultural lands grown with paddy, cashew, coconut and tea and originally have been allocated with separate roads during the land survey. It was also observed that the grantees use alternative access roads, sometimes by crossing others' lands. Moreover, certain lands were located in hilly areas where proper access roads cannot be constructed.

Access roads were of various types, and the majority (77%) has been gravel roads. Tarred roads accounted for only fifteen of which three percent were carpeted. Another 5 percent has been roads concrete roads while rest (3%) being footpaths at the time of survey. The assessment revealed that almost 80 percent of the sampled grantees use least road facilities despite huge allocations made for the development of rural roads in the country during the past decades.

It has been evident that the poor access road has become an issue for nine percent of the grantees in the sample and predominantly in Galle district (18%). Unavailability of access roads to lands, road width not within allocated dimensions, poor maintenance of roads and need for development of current road system have been among the issues related to poor road conditions.

6.6 Suggestions to Overcome Land Development Issues

Financial and in kind Assistance: The users of LDO allotments in the study sample suggested a number of solutions to overcome the problems they faced regarding land use and development. Majority (43%) of grantees emphasized the need for financial and material assistance for the use and development of LDO allotments (Figure 6.2).

This category of grantees has been mostly who make their living either farming or/and working as laborers in other lands with financial difficulties. They seek

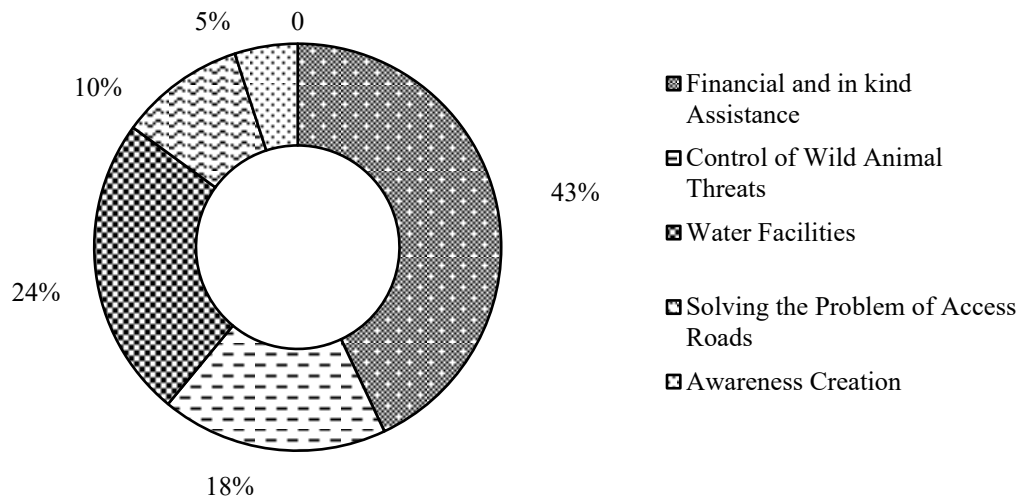
financial assistance with low interest loans, cash grants or in kind assistance from the government to construct agro-wells, water supply systems, expand the cultivations and complete the housing constructions. Apart from that, they suggested provision of seeds, plants and equipment for cultivation free of charge from relevant authorities.

Control of Wild Animal Threats: The second most rated suggestion (18%) by the respondents was the control of wild animal damages. As proposed by those affected construction, renovation and proper maintenance of electric fences along village boundaries is a prerequisite since they are not satisfied with the current mechanism for maintaining electric fences. According to them, in certain places, electric fences are not properly functioning allowing elephants to cross the borders and enter into villages. Distribution of air rifles and guns to repel the animals as well as relocating the elephants to sanctuaries and monkeys to other places to protect their cultivations with the support of wild life department and the forest conservation department were among their suggestions.

Water Facilities: As a solution for lack of water for drinking and cultivation purposes of LDO grantees several suggestions has been put forward by the participants of the current survey. About fourteen percent of them were of the view that the permanent water supply facilities should be provided to villages. Another ten percent suggested developing existing irrigation systems (Figure 6.2). For providing permanent water supply facilities some people suggested to make reservoirs in the village, new water cannels and tube wells. In some areas people requested to implement drinking water supply programs in collaboration with the National Water Supply and Drainage Board. Expansion and restoration of the water reservoirs and repairing the existing drainage channels, which supply the water to the villages is also an important suggestion made by the land users.

Solving the Problem of Access Roads: Among the respondents of the survey about ten percent suggested developing access roads to LOD allotted villages. Although there are road access, some of the roads were not made with the correct dimensions as such people requested widening the roads and constructing proper drainage channels to flow excess water during rainy seasons to avoid muddy surroundings. Those with gravel road access suggested developing permanent roads keeping proper dimensions and coating roads with concrete or tar and construct culverts to avoid stagnation of water.

Awareness Creation: Although creating awareness among grantees on ways and means of developing LDO lands is an important aspect, a mere five percent requested to implement some awareness programs for them with the government involvement. They preferred training on soil conservation techniques, different cropping systems, self-employment avenues and animal husbandry.



Source: HARTI Survey Data, 2019

Figure 6.2: Solutions to Overcome the Problems hindering Land Use and Development of lands alienated under LDO

6.7 Summary

Besides constructing houses and other buildings in alienated lands supporting the residential purpose of landless people, utilization of such lands by the beneficiaries for carrying out agricultural activities for their own benefits has been the broader perspective of the LDO from its very inception. Various observations and analyses made during the present study revealed many important aspects of agriculture development activities of LDO allotments in the three districts, Anuradhapura, Kurunegala and Galle. The agricultural activities carried out in both residential (78%) and agricultural (21%) allotments in areas remaining after constructing houses has been focus in the discussion of this chapter. Management of home gardens was the key activity conducted in the residential allotments with animal husbandry in small scale (12%). Remarkably, there has been sufficient land area in 94 percent of the residential allotments for home gardening with significant variation among the three districts. The typical home gardens maintained in dry, intermediate and wet zones of the country have been observed in the study sample with combinations of different crop varieties. The intensity of home garden cultivation varied slightly among the three districts. More successful home gardens have been observed in LDO allotments of the Galle district because of the favorable weather conditions despite low land extents, averaging 85 perches per allotment granted in this district compared to other districts. Cattle rearing and poultry farming have been the prominent categories observed under animal husbandry, conducted in small scale as income earning ventures in residential allotments, predominantly in the Anuradhapura district. Cattle rearing have not been up to the expectations since milk production has been below par the national annual average milk production per cow. Majority of the grantees has been practicing backyard poultry farming in small scale.

Lands granted solely for agricultural activities under LDO was comparatively less with the allotments in the Kurunegala district being the predominant. Both the observations and analyses of the present study indicate under-utilization of agricultural allotments to varying extents in the three districts Anuradhapura, Kurunegala and Galle. Out of the total extent alienated, only 72 percent of the land extent has been utilized for crop cultivation. Cultivation intensities of agricultural allotments in three districts marked significant variation. The common crop varieties have been grown in both home gardens and agricultural lands of the three districts. Anuradhapura and Kurunegala predominated with more low country vegetables and OFCs. Majority of agricultural allotments have been planted with perennials other than annuals while in ten allotments both have been planted. However, in the Galle district majority of crops established has been perennials such as tea, coconut, cinnamon, pepper, banana and avocado since the soil and environmental conditions in the wet zone favor establishing such perennials. Coconut cultivation has been common in all three districts as the most vastly grown perennial crop in the LDO allotments in study sample, predominating in the Kurunegala district. The performance is least in the Anuradhapura district where only 59 percent of the allotments have utilized for agricultural purposes. The CII has been only 71 percent for reasons being mainly difficulties in supplying water for cultivation and threats of wild animals.

Based on overall findings of the survey it can be stated that the degree of utilization and development of LDO allotments in general as well as in specific for agricultural development is a function of a number of variables *viz.* water scarcity, wild animal threats, financial issues, soil infertility and problems associated access roads. LDO grantees have been facing these constraints in varying proportions in all the three districts. By and large the suggestions made by the grantees to overcome these issues in land use and development have been obtaining financial and in kind assistance, lasting control measures for preventing wild animal threats, providing water facilities, developing of access roads and carrying out awareness programs preferably on land development activities such as cropping systems, soil conservation and animal husbandry.

CHAPTER SEVEN

Summary, Conclusions and Recommendations

7.1 Introduction

The LDO of 1935 has paved the way for Sri Lanka to gain over 80 years of experience in land alienation. Irrespective of political parties ruling from time to time, all successive governments undertook land alienation schemes under different names such as jayabhoomi, swarnabhoomi grant programs whereupon people have been benefitting insomuch to date. Initially, the priority was given to low income peasant community but later was extended to more categories of people. The main purpose of land alienation has been to ensure access to land by the landless primarily for living and development of the allotments for enhancing the livelihood of the occupants. In addition, it was also expected that the grantees would develop those state lands by undertaking various development activities to boost the value of undeveloped state lands.

Land alienation has been a refreshing topic which received abundance of attention in the rural development literature. However, hardly any attempts have been made to look at from the perspective of whether the land alienation objectives have been achieved or not from the state's or the granter's viewpoint. Thus, the present study was carried out to assess how far those objectives have been met under varying conditions island-wide, particularly on the basis of climatic variations. Special attention was given to see whether land residence, development and utilization have been consistent with the objectives of land alienation.

This inquiry into the accomplishment of the land alienation objectives originated from the perception held by the land administrators who are uncertain about whether that happens as anticipated. Though unconfirmed, there is a widespread perception that alienated lands are used contrary to land alienation objectives. There may be some truth to them and therefore, it is important to examine the truth and falsity of the said perception, and this study was designed in such a background. The study sample consisted of 401 households that received LDO grants during the seven-year period from 2012 to 2018. A proportionate random sample was chosen from Anuradhapura, Kurunegala and Galle districts based on the total number of grants issued during the said period for the study. The districts selected were respectively to represent the dry, intermediate and Wet zones of the country, and then the highest number of grants distributed within the corresponding climatic zone within the reference period. The summary of findings, conclusions and recommendations proceed henceforth.

7.2 Summary of Findings

1. The study locations represented rural areas of the country, and the analysis found that the majority of the grantees are characterized by lower educational attainments. They made their living through on-farm or off-farm agricultural activities as own account workers or laborers both agricultural and non-agricultural. The sample included only 22 percent grantees having access to stable employment opportunities.
2. In terms of residence, 78 percent allotments have been used for living purpose at the time of the survey in 2019. Another 21 percent allotments have been agriculturally developed while just one percent being unutilized. These allotments were named as residential, agricultural and bear allotments for the purpose of this assessment. Accordingly, a vast majority of allotments (99%) have been occupied and/or agriculturally developed. Only few allotments (1%) remain undeveloped for residence or agriculture due to lack of essential infrastructure facilities.
3. The study found that only 88 percent of the allotments have been used by the original grantees with their families whilst the rest is used by the relatives (11%) or non-relatives (1%). This means that 99 percent of the allotments are within the immediate family and the kinship.
4. Even though, grants were issued during the past seven years (2012 to 2018), the allotments have been utilized over a long period from three to 72 years. Altogether 74 percent of the allotments possessed a duration of utilization over 20 years. However, the average lapse between the issuance of the permit and the grant was 15 years. The long-held legal processes undertaken by the state agencies in granting ownership rights to permit holders has been a severe setback for achieving goals of LDO.
5. Among the allotments assessed in the study 312 residential allotments have been currently occupied by 408 families with a family density of 1.3. This indicates how intensively the allotments have been occupied by more than a family in an allotment.
6. Referring to family size, the members of the family range from one to 12 including those of nuclear and extended families. The study sample consists of occupants of maximum of three generations with two generations being the most common (59%). These findings verify that land alienation under LDO (1935) has immensely contributed to fulfill the residential needs of the people.
7. The present assessment dealt with 337ac of state land distributed among 401 LDO allottees. The size of allotments varied from eight to 400 perches with an average of 135 perches per allotment. In terms of allotment size, Kurunegala headed with an average of 168 perches per allotment whilst Galle had the least with averaging 8 perches per allotment denoting the differences in average allotment size between the districts being statistically significant ([F(2,398) = 19.827, P = 0.000]. Alienation of large allotments has been basically

for agricultural development depending on the availability of land and the scheduling of the distribution. Further analysis revealed that the majority of allotments have been 0.5≤0.75 acres whilst around 90 percent of the allotments being larger than 0.25 acres. This means that these allotments can be used for agricultural activities, at least for home gardening, in addition to the residential uses.

8. In majority of allotments (95%) the boundary poles have been fixed but only 42 percent have fully fenced either with *Gliricidia* or *Hibiscus* as bio-fencing indicating that people are much interested in boundary demarcation by establishing strong fences such as barbed wire or parapet walls with gates instead '*kadulla*' that block entrance to the residence.
9. Land fragmentation defined as "subdivision of the original allotments into two or more plots by demarcating their boundaries either formally by a surveyor or informally through the separation/demarcation of sub allotments as they preferred" has been prevalent in LDO allotments too. In the present study only thirteen percent of allotments have been fragmented. The fragmentation ratio was estimated as 2.6.
10. The fragmentation of LDO allotments was significantly associated with the size of the allotment (χ^2 (2, N = 401) = 9.599, P (0.008) <0.05) and the family size (χ^2 (2, N = 50) = 7.576, P (0.023) <0.05). This leads to conclude that fragmentation is common amongst the larger allotments and larger families. The majority of the fragmented allotments (96%) have been used for housing construction by the children or the non-relatives indicating that land fragmentation has largely catered to satisfy the residential needs of the people.
11. Majority of the grantees in the sample (80%) has not been aware of the minimum unit of sub-division applicable to each DS. There were twelve percent allotments having reached the minimum unit of the subdivision, however, fragmentations in none of the districts have exceeded the limit although the trend of subdividing LDO allotments continues.
12. With regard to development activities undertaken in residential allotments (312 out of 401), the constructions varied in type such as houses, small boutiques, premises for small businesses and self-employment, sheds for animal husbandry and warehouses. Therefore, it is evident that the residential allotments have been utilized for housing as well as for income generating purposes.
13. The description of housing as assessed by a number of parameters revealed; permanent houses (94%), more than two rooms (83%), permanent and costly roofing material (89%), floors with cement or tiles (92%) and plastered inner and outer walls (75% and 71%) for houses. Electricity supply (97%) and proper sanitary facilities were also considered descriptors for assessing housing facilities. Housing quality score was constructed based on the above criteria as a key indicator for describing the status of the development of allotments as well as the living quality of the households. The estimated housing quality

score indicated that majority of the households (95%) have average or above-average living conditions.

14. Residential allotments are granted not only for the fulfillment of housing needs of the grantees but also to support various livelihood opportunities. It was observed in the study sample that about twelve percent engage in animal husbandry (12%) while ten percent take part in small businesses, skilled employment and self-employment activities. Animal husbandry practices include cattle (8%), poultry (4%) and buffalo (0.3%) farming and the frequency of such varied among districts. Anuradhapura predominated for cattle rearing. However, the analysis found that milking cows have not being adequately productive because the annual average production of milking cows has been 348 liters of milk, which is par below the national average. Backyard poultry farming has been conducted at a smaller scale except for the two large scale layer farms and one buffalo rearing household. Accordingly, most of the income generating ventures carried out in LDO allotments have been at a subsistence level and thus the contribution to household income has been insignificant.
15. The results showed that the availability of space in the allotments for agricultural activities vary among districts. There were sufficient free spaces in the residential allotments (94% on average) for home gardening after housing and other constructions being attended. However, the average CII estimated for the residential allotments was around 61 percent with district wise averages being insignificant [$F(2,309) = 1.447, P=0.237$].
16. The home gardens were found to be more or less similar in Anuradhapura and Kurunegala districts where vegetables and OFCs are mainly grown with few perennials characteristic to climatic regions. Galle district has been an exception due to cultivation of tea, cinnamon, and pepper and fruit crops such as banana and avocado mainly for commercial purposes. Among the three districts home gardens have been relatively successful in the Galle district owing to more conducive weather conditions for cultivation of variety of crops.
17. The study sample consisted of 21 percent agricultural allotments spread over 17 acres of land however, only 72 percent of which have been used for cultivation purpose. Majority of agricultural allotments (93%) has been under mono cropping or multiple cropping with different crop types such as perennials (71%) including fruits, plantation crops and export agricultural crops, annual crops (16%) and both (13%). Overall, the cropping intensity of agricultural allotments was estimated as 85 percent which significantly vary among the three districts [$F(2, 60) = 3.716, P=0.03$] (Anuradhapura -71%, Kurunegala- 93% and Galle - 81%).
18. The study revealed that in order to develop all types of land in general there has to be several challenges overcome. Water scarcity for both drinking and cultivation has been the key issue in Anuradhapura and Kurunegala districts. In

general majority of grantees (66%) have no access to a secured and assured water sources and they have depend on common tap lines, filtered water and water canals. The threat of wild animal damage to farmlands as experienced by farmers all over the country has been equally common to about 23 percent of the LDO allotments.

19. About 21 percent of the participants in the study sample have not been able to invest on land development. The obvious reason being most grantees can only cover their daily household needs with their little earnings from farming and informal occupations. This issue has been affecting the development of LDO allotments to a considerable extent.
20. Review of pertinent literature reveals that the government tends to select infertile lands for the purpose of alienation. In the study sample too out of total allotments, eleven percent claimed that their lands are infertile. Moreover, among 98 percent of the allotments having road access about nine percent of the grantees showed dissatisfaction for reasons such as unavailability of access roads (2%), inadequate road width and poor road maintenance.
21. Most of the grantees (43%) have been not only asking not just financial and kind assistance for developing LDO allotments from the state but also taking permanent measures avoid wild animal threats, ensure supply of water, provide proper access roads and create awareness on agricultural development and other income generating activities.
22. Qualitative findings highlighted the difficulties faced by the grantees due to partial ownership in LDO allotments because of overdue state driven legal procedures in granting full proprietary ownership. Especially, they have been unhappy because of embarrassing situations they have to face when obtaining permission to mortgage the land, build and renting a house and sub dividing the premises.

7.3 Conclusions

1. Land alienation under LDO has been a great success in terms of land utilization. Majority (99%) of LDO allotments have been used for agricultural and/or residential purposes. However, this does not imply that the original grantees occupied or developed all the allotments granted.
2. LDO of 1935 has prohibited selling of LDO allotments. Often, the residence or the development of allotments has been retained within the family and the kinship. Illegal land transactions have been seldom (1%). This may be due to the reason that transferring property to outsiders is rare in the country side because owning a land is a sign of richness and prosperity in the rural community.
3. The housing quality score has been impressive among LDO grantees indicating that the majority has a high standard of living implying that land alienation has

indirectly contributed towards elevating the quality of life among people of the country.

4. The findings of the study suggest a long history of utilization of allotments disregarding the full proprietorship testifying the commitment of grantees developing land. On average time for issuing legal ownership for LDO allotments has been over 15 years of utilization by the permit holders. This prolonged legal process has been an embarrassment for the state of affairs of the system causing displeasure among the public towards the state.
5. The family density 1-3 observed in the sample is a good indication of the intensity of land utilization for residence implying that the LDO allotments have been intensively used to fulfill residential needs of the people over generations.
6. Residential allotments have also been used as income generating alternatives such as animal husbandry, small businesses, and skilled employment and self-employment activities despite majority of being less productive ventures providing an insignificant contribution to household income.
7. The extent of majority of allotments has been between 0.5-0.75 acres, and 90 percent being larger than 0.25 acres. The average allotment size, 135 perches by normal benchmarks is large enough for agricultural development in par with the modern day home gardening concepts.
8. The average CII of residential allotments is 61 percent and this implies that a large majority of allotments have space for housing and fulfilling other needs. Absence of residential allotments with zero CII is an indication that people are keen on maintaining a home garden to their capacity despite less land use intensity, low productivity and poor income. Field observations confirmed that presence of home gardens has been a characteristic feature of the study locations.
9. CII of agricultural allotments (85%) has been relatively greater compared to residential allotments (61%) and varying significantly among districts. These allotments have been diversified with perennial crops characteristic to study locations. The survey observations as well as analysis suggest that in agricultural allotments too the productivity is low and the incomes are poor.
10. Regardless of already mentioned residential implications, inferences can also be made from the agricultural development perspective. From a conventional view point the problems and proposed solutions with regard to constraints that hinder development of LDO allotments; wild animal threats, financial scarcity, water shortage, poor access roads and soil infertility needs to be addressed and rectified. However, those issues are not limited to LDO allotments alone. Those are common challenges faced by the entire agriculture sector of the country. Therefore, it is rather senseless to bring about those issues as an outcome of this study and make suggestions for rectifying those issues for LDO allotments incurring additional cost to the state. What emerges

from the overall context is a serious dilemma which needs more cautious attention in the passage of developing the agriculture sector in the country.

11. The study revealed that land fragmentation has been taking place in LDO allotments at a lower (13% allotments) at a ratio of 2.6. This has been more common in larger families and bigger allotments. This suggests that land fragmentation is occurring mainly to fulfill the residential needs of the generations.
12. The awareness of grantees on minimum unit of sub-division spelt out in the LDO of 1935 has been almost nil yet none of those fragmented their lands exceeded the limits of the minimum size in any of the district. However, it is undeniable that the minimum unit of sub-division will exceed in the future with the generations to come particularly in larger families.
13. There are several aspects to consider when home gardening in residential allotments because home garden is a system that generates many social, economic and environmental outcomes and also it reflects the aspirations of the householders. Moreover, home gardening is a practice, dependent environmental factors such as droughts and other extrinsic factors. It has been observed that these factors equally apply to the LDO allotments as most of the residential allotments are home gardens developed at varying magnitudes despite being less successful and sustainable. If the state expects the LDO allotments to be agriculturally developed the most achievable option is to impose regulations.
14. In par with statutory powers there are provisions to request or impose regulations for LDO grantees to develop home gardens under Sawubhagya one million home garden program. Around 36,000 allotments have been considered within the study period (2012-2018) and the success accounts for around four percent.
15. According to existing regulations, LDO lands cannot be sold; sub divided beyond the minimum unit of subdivision, and unless the heir is named, only the eldest son will inherit. Permission must be sought from the Divisional Secretary before transferring the inheritance, renting the buildings, mortgaging the grant and obtaining loans. However, it is important to examine the legitimacy of these conditions imposed on alienated allotments because as long as state institutions are not involved enforcing these rules and regulations they will be violated at varying extents. This has been confirmed by the study as well since regulating agricultural development in LDO allotments has become a futile exercise. It is more realistic if the grantees be allowed to follow the regulation (agricultural development of the LDO allotments) within their capacity.
16. Taking into account of the constraints raised by LDO that impede agricultural development in LDO allotments, it is unrealistic to expect that all grantees can achieve marked improvements in agricultural activities in their allotments.

Therefore, it is more appropriate to consider LDO allotments as residential units rather economic units of residence and agriculture production.

17. As obvious the present assessment also specifies that LDO grantees too prioritize residential needs beyond agricultural development in their allotments. It was not realized in this study whether priorities of LDO grantees have an ethnic stimulus since the survey covered only the Sinhala Buddhist rural community of which in modern days priority has been every child to own a piece of land. In these allotments the preference of married children to live separately in their own houses. It is noteworthy in the sample assessed that even though more than one generation have lived in the allotments, many of them have not ended their desire for constructing a house of their own and this has been true for both parents and the children as life time contract.
18. It is fact that the growing population of a country creates a demand for land. In the sense of equal opportunity for every person the society is of the opinion that every citizen should have a foothold. Thus, the state is bound to provide a piece of land for every landless citizen. The landless also expect the same from the state. Considering sociological perspective as well as basic human survival need principle the state is obligated to provide a piece of land for every landless citizen. However, one should bear in mind that land is not just a piece of non-living matter, but it is a precious non-renewable resource. Once it is converted for some use it cannot be replenished within a person's life time. Therefore, the country should protect, preserve and conserve its precious land resource for the betterment of the livelihood of the people.
19. It is groundless to expect everyone LOD grantee to use its allotment as an economic unit. Considering performances in agricultural development perspective, it is arguable whether land alienation should be continued as per the LDO of 1935 with anticipated objectives of residential and agricultural development. By allocation of large allotments as in the past it is achievable making a living for the entire household, but as of today by granting a small piece of land it is hardly possible to achieve the above dual objective. Hence, this study proposes that it is not advisable to waste state's precious land resources imprudently. Looking from this perspective land alienation appears to be futile from the development viewpoint and hence the state should look for alternative avenues to address the problem of livelihood of landless people in the country.
20. From the people's perspective uppermost most need of the landless in the past has been to own a piece of land for residence and hence the priority has been residential needs beyond the agricultural development. They supposed to be spending every single cent and the second to realize the dream of owning a good quality house. This leads to the conclusion that land alienation has indirectly ensured the shelter needs of the people, which is one of the basic survival needs of the humans as stated in Maslow (1943). If so, the question remains; what are the feasible options to fulfill the shelter needs with minimum use of lands? The successive governments have addressed shelter

needs of the people under various mottos for instance 'shelter for homeless' or '*hisata sewanak*' is one such popular slogan. However, with the findings of this study it is rather skeptical to promote the same as it is.

21. A country must choose whether to give land to some people and to develop housing for others of the same stratum. The truth to be understood therefore is that whether the problems that fall within the same scope should be addressed separately and there should be separate ministries for that.
22. During the survey it became evident to some extent that the settlers in the LDO allotments do not feel that they are treated equally as those having their own lands. This is another reason for why there is a need to address this issue differently. In certain cases, the grantees appear to have been living like those in a colony of a low stratum of the society somewhat wrested from the colonial status.
23. The grantees have not been satisfied with the conditional access to lands they occupy. Only a few knew certain conditions stipulated in the LDO of 1935. Some are confused because they are unable get a loan without the permission of the Divisional Secretary moreover has to face various problems at the DS's office. The land cannot be divided among children even the grantee wishes. Whatever they wish to do such as mortgaging and sub division is barred. This situation needs to be changed in order make LDO grantees to relieve from undesirable barriers in built in the system of functioning activities under LDO.
24. In principle, the state should cater to essential needs of the public such as shelter rather than integrating things they dislike or what they cannot accomplish instituted in the prevailing system. This study shed light on highlighting the ways and means of how conventional land and housing policies of the country must undergo a drastic change. Primarily such a change should explore win-win solutions that free the general public from the hassles they face and then address on meeting the residential needs. The perspective is the need to conserve states' valuable land resources while solving residential needs of the general public knowing their affordability n a cost effective manner.

7.4 Recommendations

7.4.1 Scenario One: Grants already issued

- Offer title deeds with free holding land rights to the LDO grantees with immediate effect, while adding value to the lives of the affected by considering the one percent of illegal land transactions.
- Expedite the above process by holding land *kachcheries* frequently with immediate effect at the DS level.
- Identify the LDO allotments subject to over fragmentation and solve the issues at DS level through land *kachcheries* and by imposing strict regulations.

7.4.2 Scenario Two: Grants about to be issued

- Direct issuance of free holding rights instead of grants expected to be issued in the near future. This needs to be handled at the ministerial level.

7.4.3 Scenario Three: Fulfilling the shelter needs of future generations

- Review the existing land and housing policies of the country and explore alternative means of ensuring shelter needs of the people at national level.
- Introduce and launch affordable housing schemes as housing clusters or flats by the state for the rural youth, who represent the lower strata of the society, and thereby the state will not have the burden of costly operations in finding solutions to constraints raised by LDO grantees with regard to development of the allotments. This will be a solution for numerous and diverse problems associated with the land alienation process at both ends, the state and the grantee. Create an attractive landscape for the future generations to live without the burden of life time housing construction with urgent consideration.
- Allocate the saved lands through above sheltering options adjacent to those housing schemes to be developed as more productive community farms by the residents, as promotion sites of good agricultural practices for interested parties, as learning sites for children about farming, as recreational sites for elderly, and as on-site direct marketing ventures of healthy food commodities.
- Operationalize the process as suggested in above 7.4.2 if the land alienation process continues unchanged.

7.4.4 General Recommendations

- Create awareness through low cost mass communication programs to educate people about the rules and regulations associated with land alienation process and the accountability of the state and the public in protecting country's land resource.

7.5 Directions for Future Research

The selection of study areas in this research study was based on the climatological variation of the country. Accordingly, Anuradhapura, Kurunegala and Galle districts have been selected to represent dry, intermediate and wet zones and also because of relatively larger numbers of land allotments have been granted in each district. Therefore, the current status of land use pattern of some areas such as Northern Province, where the coverage of state land alienation is poor have not been addressed in this research study. This exclusion deprived the assessment of LDO allotments where people of other cultures inhabit In order to fill this gap it is

worthwhile to extend this study to assess current status and land use pattern of state lands in areas where fewer numbers of state lands alienated.

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APPENDICES

Appendix 1.1 Distribution of the study sample by Grama Niladhari Divisions in the three districts Anuradhapura, Kurunegala and Galle

District	DS	GNDs	No of Grant	Total
Anuradhapura	Rajanganaya	457 Track 15	45	184
		455 Track 13	21	
		458 Track 17	13	
	Nuwaragampalata	Karawakkulama	21	
		Kirikulama	18	
		Pothanegama	16	
	Thalawa	Moragoda	26	
		Mawatha wewa	24	
Kurunegala	Mahawa	Thalagalla	28	135
		Kadambawa	22	
	Abanpola	Palapathwala	24	
		Abanpola North	19	
	Wariyapola	Walpaluwa	25	
		Amunugama	17	
Galle	Nagoda	Gammeddegoda	26	82
		Urala	18	
	Karandeniya	Kurudugahahetakma	15	
		Galagodaaththa	7	
	Niyagama	Niyagama	16	
Sub-total			401	401

Source: HARTI, Survey Data, 2019

Appendix 3.1: The parameters used to develop the scoring matrix as a measure of housing quality of LDO allotments

Study Parameter	Measuring Variable	Measurement	Points
Housing Conditions	Number of rooms	>=5	3
		3-4	2
		1-2	1
	Material for walls	Fully completed	3
		Permanent material but partially completed	2
		Temporary materials	1
	Material for floor	Tile	3
		Cement	2
		Clay/Cow dung	1
	Material for roof	Tile	3
		Asbestos sheets	2
		Metal sheets/Coconut cadjan	1
Drinking Water	Source of drinking water	Protected well	3
		Tap line	2
		Other sources (Filters/Water canals)	1
Energy Used	Energy source of cooking	Only LP Gas	3
		Firewood and LP Gas	2
		Only Firewood	1
Sanitary Facilities	Nature of lavatories	Fully constructed	3
		Partially constructed	2
		Not constructed (Used neighbors lavatories)	1

**Appendix 5.1: Sources of Energy for various household purposes in LDO allotments
in the three districts Anuradhapura, Kurunegala and Galle**

Energy Source	Anuradhapura	Kurunegala	Galle	Total
	%	%	%	%
Electricity	97	97	95	97
Kerosene Oil	3	3	5	3
Total	100	100	100	100
Fuel Source				
Firewood	60	76	46	63
LP Gas	6	2	13	6
Firewood/LP Gas	34	22	41	31
Total	100	100	100	100
Toilet Materials				
Water sealed commode	6	15	17	11
Squatting Pans	93	84	83	88
Pit Method	1	1	0	1
Total	100	100	100	100

Source: HARTI Survey Data, 2019