



Data and Information of Home Gardens in Sri Lanka



Land Use Policy Planning Department
Ministry of Lands and Land Development



**Data and Information of Home Gardens
in
Sri Lanka**

**Land Use Policy Planning Department
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FOREWARD

Home gardens occupy about 18% of the total land area of the country. The size of the home gardens and management status are varying due to various reasons. All home gardens have not been fully utilized. There are significant number of home gardens is underutilized. These underutilized home gardens are having the potential to develop further by introducing various crops. In addition, improper management of tree crops makes some home gardens are less productive as they are having a shady environment.

As a first step, the Presidential Task Force on Economic Revival and Poverty Eradication has given an attention to improve the home gardens under the National programme to enhance food production through land development. At present, the lack of detailed information about home gardens is the main barrier to plan the programme. Therefore, it is important to have compiled data and information of the home gardens of the country.

Thus, LUPPD has been requested by the Chairman of the Presidential Task Force to collect data and information of home gardens in the country within a short period. Due to time limitation, Geographical Information Systems based techniques were mainly used in data collection. The collected data was validated at the field by Land use Planning Officers or Development Officers attached to Districts with the guidance of District Assistant Directors and Head Office staff of LUPPD. In addition, with the directions of Government Agents and Divisional Secretaries field data collection was supported by Grama Niladaris, Economic Development Officers, Development Officers, Samurdhi Officers and other officers who are working at the field level.

In this survey, home gardens were classified into three main categories depending on the size of them as parcels less than 0.05 ha (<20 perches), size of the parcels between 0.05 - 0.4 ha (>20 - 160 perches) and parcels larger than 0.4 ha (>160 perches). Collected data were compiled at the Head Office and prepared as a Main Report and as annexes with district data. This information may help to plan the programme to enhance food production by developing home gardens.

Since the information on home gardens is urgent, data collection was limited to the data which are needed for the planning. This may help to bridge the gap of unavailability of data/information on home gardens in Sri Lanka. It is also expected to establish a computerized land use data base in the future by compiling all land use data collected by LUPPD under various programmes. Therefore, feedback from data users is highly appreciated to develop this exercise further.

July 2020

Land Use Policy Planning Department

Secretary's Message

As we all aware local food security and family nutrition are very important for the country today. Therefore, agricultural production has to be increased by intensifying agricultural land use. Home gardens in Sri Lanka play a significant role in food security and family nutrition since they occupy about 18% of the total land area of the country. As there are about 4 million home gardens available, the collective production from home gardens may be higher than the expected. Therefore, the development of home gardens is crucial under the present situation.

Presidential Task Force on Economic Revival and Poverty Eradication has requested to collect data of home gardens in order to plan the home garden development programme. This task has been given to the Land Use Policy Planning Department (LUPPD) under the Ministry of Lands and Land Development. All districts and divisional administration and relevant line agencies were coordinated by the Ministry to obtain support from the officers at the field level for this survey. Necessary policy decisions were taken by the Ministry to complete the task successfully. In addition, frequent discussions were held at the Ministry to review the progress of the work and to provide guidance. Meantime, the Task Force was continuously informed about the progress.

LUPPD has successfully completed the study within a short period and presented the data and information in an attractive manner. Hence, I would like to use this opportunity to thank Mrs. A.S. Ilangange, Director General, LUPPD and her staff for the completion of this valuable exercise as requested. As a technical Department LUPPD has a very important role in planning land use of the country. This is now clearly identified and therefore more responsibilities have been given to the Department. I hope LUPPD will accept this challenge and make a better environment through proper planning in order to achieve the present-day needs of the country.

R.A.K.K. Ranawaka
Secretary,
Ministry of Lands and Land Development

ACKNOWLEDGEMENTS

I thank to Chairman of Presidential Task Force on Economic Revival and Poverty Eradication for giving an opportunity and a responsibility to Land Use Policy Planning Department (LUPPD) to provide data and information on home gardens in order to support current agricultural development programme. I must express my gratitude also to Mr. R.A.K.K. Ranawaka, Secretary, Ministry of Lands and Land Development for overall coordination and encouragement throughout the process.

Collection of data of home gardens all over the Island within a short period is not an easy task. However, the task was accepted by my staff with positive attitudes, considering the difficult situation the country has faced at present. They all carried out field data collection with several restrictions. Hence, I must acknowledge to all District Assistant Directors and Land Use Planning Officers/Development Officers attached to Districts and D.S. Divisions for their support given to complete this task within a short period.

LUPPD Head Office staff also has a huge task to compile all the data gathered from the field in order to prepare a comprehensive report. I am grateful to Director (LUP), Deputy Directors, Assistant Director and all other staff at the Head Office, particularly in the Planning & Development and Computer Divisions for their continuous support for the completion of this mission.

Further, I should acknowledge to all Government Agents/District Secretaries for their coordination in order to obtain assistance from other officers in districts and divisions. I am also grateful to Grama Niladaris, Economic Development Officers, Samurdhi Officers, Agriculture Research and Production Assistants and other officers at field level for their support given to our staff in data collection.

I would also like to express my sincere thanks to Mr. H.D. Sisira, Assistant Director (Agriculture Economics) for his valuable support given to compile this report and support extended during the entire process.

At last but not least, I thank to Dr. Ajith Gunawardane for designing an attractive cover for the main report with short notice by using photographs from his photo collection.

A.S. Ilangame
Director General

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Part I – Main Report

1. Introduction and Background

Ensure local food security is crucial since global food production and importation of foods has been disturbed mainly due to epidemic situation and other climate change phenomena. Mainly two approaches are available to increase the food production i.e. (a) enhance the production of existing cultivation lands by using improved cultural practices and (b) expand the cultivation into new areas. Nevertheless, both approaches are having some limitations. Enhance the production of existing cultivation lands by increasing unit production is fairly a long-term process. Meanwhile, the expansion of cultivation into new areas also restricted due to limited land resource. However, presently underutilized lands including home gardens can be used to increase food production to a certain extent. This has also been highlighted in the page number 38 of National Policy Frame Work – “Vistas of Prosperity and Splendor”¹

The total land area under home gardens is about 18% of the total land area of the country². Further, some home gardens are underutilized and not reached its full potential due to various reasons. Since, a significant land area comes under home gardens, it is crucial to develop these lands by cultivating appropriate crops to ensure local food security. As a policy it was suggested in the “Vistas of Prosperity and Splendor” to develop 2 million home gardens using organic fertilizer in order to promote at the household level consumption of organic vegetables and fruits in the country³. This was mainly aimed for food security and family nutrition in 2019, even without knowing the present situation. This policy statement is very vital and crucial today than before. However, the lack of data about the status of the home gardens is one of the main limitations to prepare a sound programme in home garden development. Therefore, an Island- wide survey was carried out to collect the data of home gardens including the size of the home gardens, water availability, status of utilization etc.

¹ National Policy Framework, Vistas of Prosperity and Splendor, 2019. 38p.

² National Land Use Survey, 2019. Land Use Policy Planning Department.

³National Policy Framework, Vistas of Prosperity and Splendor, 2019. 39p.

Land Use Policy Planning Department (LUPPD) of the Ministry of Lands and Land Development has been entrusted by the “Presidential Task Force on Economic Revival and Poverty Eradication” to provide the data and information about the home gardens of Sri Lanka in order to plan the proposed home garden development programme. It is suggested to use these data and information to plan the programme which will be commenced in coming *Maha* season (2020/21).

Some home gardens are large enough to plant few tree crops like coconut, jack, mango etc. But some are rather small and they are only good for urban agriculture practices. These data and information provide the sizes of home gardens under three categories and therefore they can be used to estimate approximately the requirements for the said programme.

All the data and information collected Island wide were compiled as district basis by giving Grama Niladari Divisions (GNDs) level information. The data and information presented as two parts. Part one is the Main Report which provides a general picture of home gardens in Sri Lanka. Part two presented as an annex to the Main Report includes twenty-five district reports with all the data tables.

Main objective: Estimate number of home gardens available in Sri Lanka and their present status in order to plan the proposed home garden development programme, suggested to commence in 2020/21 *Maha* season.

Secondary Objectives of the survey;

- I. Collect the required data of home gardens covering all districts to identify the number of home gardens available and their sizes.
- II. Categorize the home gardens into three categories based on the size of the home gardens
- III. Collect the information such as water availability, the status of utilization, availability of space which helps to determine the status of the home gardens.
- IV. Compile all the data and provide them to relevant parties in order to facilitate the implementation of the home garden development programme.

2. Methodology

The methodology was designed by considering the objectives of the programme and the time period given to provide the information. The main objective of collecting the data is to estimate roughly the planting materials (inputs) requirements for the home garden development programme. In addition, data was collected to visualize the status of utilization and to identify the main limitations of the home gardens. Based on the designed methodology, a set of guidelines were prepared by the LUPPD Head Office to guide the district and divisional staff. In addition, two online discussions were carried out to discuss the issues of the survey and to incorporate their views to develop the guidelines further.

Practically, it is not possible to collect data from each and every home garden one by one within a short period. Therefore, tools of Geographical Information Systems (GIS) were used to obtain some of the information and they were validated by field exercise.

2.1 Data Collection process

The home garden layer (scale of 1:10,000) prepared under the National Land Use Survey (2019) was used as a base layer for the study. The GND boundary layer was overlaid on the home garden layer to demarcate GNDs. Top of these two layers building layer of Department of Survey was overlapped to identify the home gardens clearly. These map layers were overlapped with satellite images of the same area to ensure the clear identification of home gardens. By using the number of houses available and the total extent of a particular polygon, the sizes of the home gardens were approximately calculated initially as a desk work. In some cases, small size home gardens (<20 perches or <0.05 ha) were identified as clusters. Large home gardens were identified individually when they are scattered (An example is given in Fig. 1a and 1b). However, all outputs from the desk work were validated from field work and also the information from other sources. In some districts, assistance from Gram Niladaris and other field officers (Samurdhi Officers, Economic Development Officers) in the divisions was obtained to collect the data.

The following data were mainly collected on GND level basis. The data to be collected were carefully decided and confined to the most required data and therefore unnecessary data collection was avoided. Reasons for collecting the data are given within the parentheses.

- a. Extent of the home garden (To categorized the home gardens based on their sizes)
- b. Major crop/crops in the home garden (To determine the present status)
- c. Status of the utilization and reasons for underutilization (To determine the present status of the home garden)
- d. Availability of water sources (To determine the cultivation potential)
- e. Space availability for tree crops (To estimate the need of the tree crops)



Fig. 1a. Clusters of home gardens demarcated on the satellite image in Lankapura DSD of Polonnaruwa District.

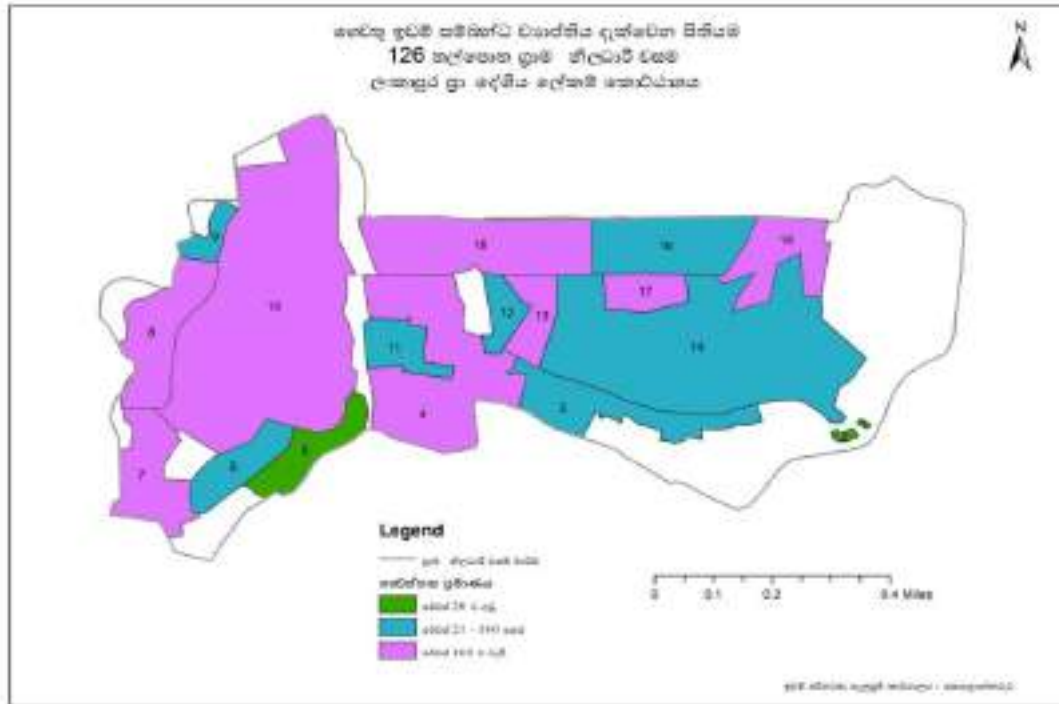


Fig. 1b. Same area of above Fig 1a is shown as a map. Number of home gardens is shown by a number given in the polygon.

2.2 Tabulation and presentation of data

The data mainly the number of home gardens and the extents of them were tabulated under three categories based on their size as (1) home gardens smaller than 0.05 ha (20 perches), (2) Size of the home gardens more than 0.05 ha and less than 0.4 ha (160 perches) and (3) Size of the home gardens larger than 0.4 ha. These data were given at GND level under each Divisional Secretary Divisions (DSDs) and summarized to form district level data tables.

2.3 Major limitations of the study

There are several limitations that were faced during the study. The limited time period for the entire process (about one month) was the main barrier to the study. The prevailing pandemic situation of the country also limited the activities particularly training of officers and field data collection. It was unable to have frequent technical discussions to guide the officers as usual due to gathering restrictions. Field work also somewhat restricted due to transport issues and due to

the vacancies in some DSDs. However, all these limitations were overcome as much as possible with the help of devoted officers of the LUPPD and other stakeholders.

3. Definitions of Home Garden

Home gardens are considered one of the popular and sustainable land use systems in Sri Lanka. This system in most cases involves the optimum utilization of land and resources around the household, satisfying both the production and environmental functions. The home garden consists of annual, biennial and perennial crops including livestock production. Plants with different canopy depths are located in these home gardens and then known as multi- species and multi-storied cropping system. The basic structures of the home garden varied from place to place, based on their ecological, socio- economic and cultural factors. Most of the dry zone home gardens are poor in terms of their composition mainly due to existing climatic conditions while home gardens in the wet zone are comparatively rich in terms of the composition. However, some of the home gardens in the wet zone are not managed properly and therefore overgrown trees create an unfavorable shady environment for the growing of crops.

The size of the home garden area can vary considerably from 0.05 ha to several hectares (even over 2.5 ha)⁴. There are several definitions available for home gardens. Weerahewa et al. defined home garden as a complex sustainable land use system that combines multiple farming components, such as annual and perennial crops, livestock and occasionally fish, of the homestead and provides environmental services, household needs, and employment and income generation opportunities to the households⁵.

⁴ Pushpakumara, D.K.N.G., A. Wijesekara and D.G. hunter. 2010. Kandyan home gardens: a promising land management system in Sri Lanka. In: Sustainable use of biological diversity in socio-ecological production landscapes. Background to the 'Satoyama Initiative for the benefit of biodiversity and human well-being. Eds. C. Belair, K. Ichikawa, B.y.L. Wong and K.J. Mulongoy. pp 102-108. Secretariat of the Convention on Biological Diversity, Montreal. Technical Series No. 52

⁵ Weerahewa, J., G. Pushpakumara, P. Silva, C. Daulagala, R. Punyawardena, S. Premalal, G. Miah, J. Roy, S. Jana and B. Marambe. 2012. Are home garden ecosystems resilient to climate change? an analysis of the adaptation strategies of home gardeners in Sri Lanka. APN Science Bulletin. 2:22-27.

Another definition (Anonymous) brief the home garden as a subsystem within larger food procurement systems which aims to produce household consumption items, either not obtainable through permanent shifting agriculture, hunting, gathering, fishing, livestock, husbandry or wage earners

However, most of the definitions brief mainly the composition of the home garden without giving the size of the home garden area. The definition given by the Department of Census and Statistics is more practical and it was used for this study with certain modifications. The definition that was used is given below.

Definition⁶ of the home garden that was used for the study

1. A piece of land which has a dwelling house and some form of cultivation can be considered as a home garden if the total area of the piece of land is twenty or less than twenty perches.
2. A piece of land which has a dwelling house and some form of cultivation, if total land areas are more than twenty perches can also be considered as a home garden if the following two conditions are satisfied.
 - a. It is mainly meant for residential purposes.
 - b. A produce of cultivated land in the home garden is largely for home consumption.

Examples for Home Garden

- a) A land of extent 20 perches or less has a dwelling house and a few bearing coconut trees.
- b) A land of 20 perches or less, has a dwelling house and having extensive cultivation mainly for commercial purposes

By definition (1) this land can be considered as a home garden.

- c) A two-acre land has a dwelling house. Although the extent covered by a house is comparatively small and few crops are grown mainly for home consumption.

According to definition (2) this land is also a home garden.

⁶ Department of Census and Statistics, Sri Lanka.

d) A small house in two roods land. But the usable land has been intensively cultivated with vegetable crops which are mainly for sale.

Although this land has a dwelling house and also extent is small, as the produce from the land is not mainly for home consumption, it will not be treated as a home garden.

However, in this survey cases like (d) have been treated as a home garden by excluding the area under commercial cultivation. For example, a one-acre land with cinnamon cultivation (commercial purpose) also having a dwelling house, a small area around the house, may be 20 perches or less was separated out from the total land and considered as a home garden. The rest of the land was not counted to the home garden area and it was treated as the land area under commercial cultivation.

4. Types of Home Gardens available in Sri Lanka

Home gardens in Sri Lanka are varying in terms of composition and size according to climatic zones. Dry zone home gardens are different from home gardens in wet and intermediate zones. Hence, it is important to identify these differences in order to design an effective home garden development programme.

4.1 Home gardens in the Dry Zone

According to the climatic characteristics in the country, Dry Zone is recognized as the area receiving average annual rainfall less than 1,750 mm and an average temperature of 28⁰ C and geographically this zone is located within the entire northern half of the country and south-eastern belt of the eastern and southern province.

Home gardens in the dry-zone can be grouped mainly into three categories (Dharmasena, 1994)⁷. According to his classification basic characteristics of the dry-zone home gardens are as follows.

⁷ Dharmasena, P.B. 1994. MPTS in Sri Lanka, Proc. of Regional Workshop PMT, (Ed.) H.P.M. Gunasena, University of Peradeniya, pp 76-90.

(a) Traditional Village Home gardens (*Gangoda*)

This type of home gardens is located immediately below the irrigation tank bund and closure to the paddy fields in imperfectly drained soils. Many of the traditional home gardens are consisted with perennial vegetation and depend on the availability of ground water. Due to this reason, plant density and multi-story character is much clearly visible in traditional home gardens.

(b) Recently Evolved Dry-Zone Home gardens

These are located on well drained soils in uplands which have been formerly cultivated as “Traditional Chena” for many years. These home gardens are presently reflecting somewhat poor plant densities and thin vegetative cover due to continuous land use practices under Chena cultivation. The major limitations of the crop growth in this home garden type are low soil moisture availability and poor soil fertility due to the nature of previous farming practices.

(c) Colony Home Gardens

These are located within planned Irrigation Settlements in the Dry-Zone. Land parcel size is uniform. However, land parcel size is differing from one scheme to another according to the time period of their establishment. The majority of these home gardens are located in inter-connected land areas in highlands as well as not irrigable. However, due to close proximity to tanks or irrigation canals, some of these home gardens are having relatively high plant density and crop diversity.

Generally, home gardens in the dry zone are having moisture limitations during dry spell except the home gardens located near water sources with the elevated groundwater table. Therefore, moisture stress seems to be one of the main limitations in developing these home gardens.

4.2 Home gardens in the Wet and Intermediate Zones

The Wet-Zone covers the south-western region including the central hill country and receives relatively high mean annual rainfall over 2,500 mm without a pronounced dry period. The intermediate zone located in between the Dry and Wet-Zones and can be recognized as the transition zone of two major climatic zones. The intermediate zone receives mean annual rainfall between 1,750 mm to 2,500 mm with a short and less prominent dry season.

In differentiating home gardens in these two zones (wet and intermediate) many features considered and factors considered by various researches due to their complexity. However major characteristics of these two types are briefed below focusing on the objective of this work.



Fig. 2. A photograph of a Dry Zone home garden obtained from Internet to show poor land cover.

(A) Home Gardens in the wet-Zone

This zone was divided into three sub-zones such as (a) Up Country Wet-Zone, (b) Mid Country Wet-Zone and (c) Low Country Wet-Zone.

(a) Up Country Wet-Zone

Geographically, Up Country wet-zone home gardens are found mainly in Kandy, Matale and Nuwara Eliya Districts. In most of the home gardens in these regions, five vertical strata are visible.

- i. At the top (level 5) 15 to 30 m height and dominated by Durian, Jack and Coconut.
- ii. Level 04 - upper middle layer 9 to 18 m height and dominated by Bamboo, Areca nut, Nutmeg, Clove, Rubber, Wild bread-fruit and Mango.
- iii. Level 3 - The lower middle layer 6 to 12 m height and dominated by Pepper, Avocado, Mangos-teen, Breadfruit, Rambutan, Citrus and Papaw.
- iv. Level 2 - lower layer 1 to 6 m height and dominated by Cocoa, Coffee, Passion Fruit, Betel vine, Vanilla
- v. Level 1 - ground layer <1m height and dominated by Cassava, Ginger, Turmeric, flower plants such as Anthurium and fruits like Pineapple and vegetables, tubers and grass fodder.

(b) Mid Country Wet-Zone

Home gardens in Mid Country Wet Zone are mainly consisted with four vertical strata.

- i. Level 4 - canopy is less than 10 m height and dominated by Alstonia, Coconut and Jack fruit.
- ii. Level 3 - Third layer 2.5 to 10m height and dominated by Gliricidia, Areca nut, Cloves, Avocado, Mango.

- iii. Level 2 - The second layer, 1 to 2.5m height and dominated by Papaw and Coffee.
- iv. Level 1 - The ground layer, 1m height and consisted with leafy vegetables and grass.

(c) Low country wet zone

Low country wet zone home gardens are mainly found in Gampaha, Colombo, Galle and Matara Districts of South-west belt in the island. This type of home gardens is located among highly populated part of the country and has suffered a considerable degradation in the past two decades due to fragmentation and urbanization (Forestry Sector Master Plan, 1995). Several studies pointed out that the labour shortage prevailing in urbanized wet zone hampering the agriculture sector in general and thus the influence might be the same in home gardens. Due to this reason many of the low country wet zone home gardens are seems to be less productive and appropriate measures would be required to restore the situation.

(B) Home gardens in intermediate Zone

Home gardens in intermediate zone divided into two sub-types, based on the topographical conditions. They are; Up Country Intermediate Zone home gardens and Low Country Intermediate Zone home gardens. Low country Intermediate Zone home gardens are found in the northern part of Kurunegala district and the Eastern part of Matara District. Up Country Intermediate Zone home gardens are found in the Eastern part of Matale, Kandy, Nuwara Eliya Districts and some areas in Badulla, Monaragala and Rathnapura Districts.

Up country intermediate zone home gardens are usually having five levels. They are named as; emergent, canopy, sub-canopy, shrub layer and ground cover. Also, plant diversity is ranging from high to very high depending mainly on agro-climatic condition. Plant density and diversity in the Low Country Intermediate Zone is relatively high in areas with favorable climatic conditions such as Bingiriya, Kuliypitiya and Dambadeniya in Kurunegala District. But in other areas not only due

to climate but also due to low soil fertility, plant density and diversity is low and therefore many home gardens are less productive. Therefore, development potential in all areas of the intermediate zone has to be carefully studied considering mainly agro-climatic and socio-economic situations in the area.



Fig. 3. Photograph obtained from internet to show the typical home garden in Mid Country Wet Zone of Sri Lanka.

5. Use of Home Gardens to ensure the food security

Food security, being one of the Millennium Development Goals, requires a nutritionally adequate and safe food supply at both national and household levels. Food security has three main facts, namely availability, access and utilization. This can be easily achieved by home gardening. Home gardens directly contribute to household food security increasing food availability, accessibility, and utilization⁸.

Home gardens ensure food security in several ways such as (a) Developing direct access to a diversity of nutritionally-rich foods, (b) Increased purchasing power from savings on food bills and income from sales of garden products, and (c) Fall-back food provision during seasonal lean periods.

⁸ Ginigaddara G.A.S, Sri Lankan Home Gardens and Household Food Security. (Unpublished)

Home gardens in both rural and urban sectors can be used to ensure food security and family nutrition. The home garden is a multi-farming system of crop farming and animal husbandry. Home gardens provide easy day-to-day access to family nutrition of fresh, healthy and nutritious foods for the household.

The production potential of the home gardens is high and it may not be correctly estimated. For example, present study revealed that the total number of home gardens in Sri Lanka is about 4,400,000. If each home garden produces 100 grams of green chili, the total production may be 440,000 kg or 440 metric tons. This is just a rough calculation to show the production potential of the home gardens. However, the country's requirement of green chili is about 63,000 metric tons/year⁹.

Sometimes, it has been observed that continuous maintenance of home gardens, particularly in urbanized areas, is difficult due to various reasons such as labour shortage due to busy schedule of the people, lack of good planting materials and other inputs and reduction of the market price of some vegetables drastically in some seasons which discourage the people for home gardening.

Cultivation of leafy vegetables and fruits alone in the home gardens could help to maintain the family nutrition. Therefore, the home garden concept improves family nutrition and their food security status.

6. Distribution of Home Gardens in Sri Lanka

Generally home gardens in Sri Lanka are widely distributed and scattered all over the country. The distribution pattern of the home gardens is given in Fig. 4. In the figure white areas are mostly under forest & urban uses and therefore these areas do not have home gardens except housing apartments. Approximate land use allocation is shown in Fig. 5 and it reveals that home gardens are about 18% of the total land area of the country.

⁹ Department of Agriculture, ETC Web Site.

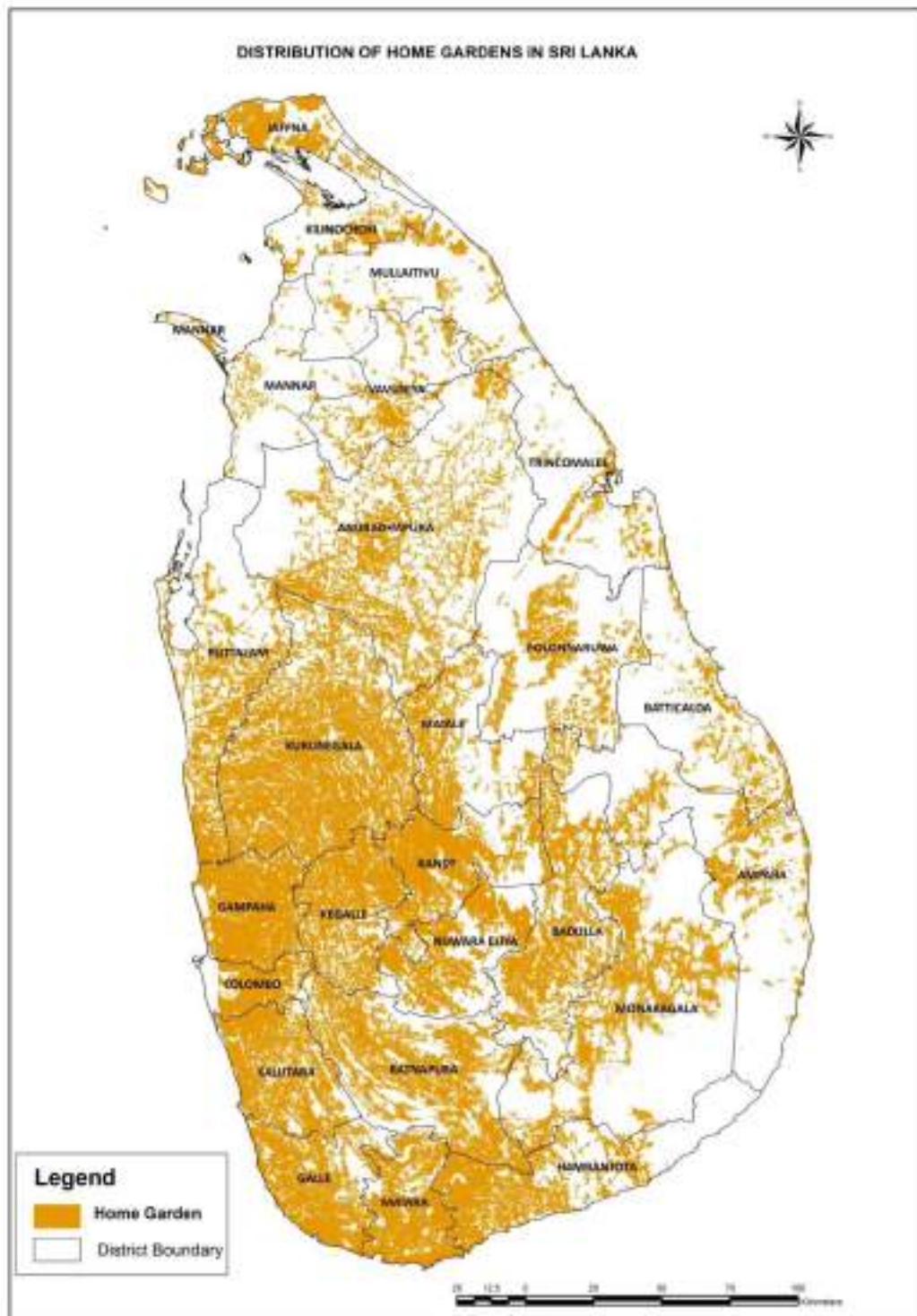


Fig. 4. Distribution of home gardens in Sri Lanka (Source, LUPPD)

Table 1. Number of home gardens and their extents according to their sizes in the Districts.

No.	District Name	Category - 1 No. of Home Gardens ≤ 0.05 ha. (≤ 20 Perches)		Category - 2 No. of Home Gardens > 0.05 - ≤ 0.4 ha. (21-160 Perches)		Category - 3 No. of Home Gardens > 0.4 ha. (> 160 Perches)		No of Home Gardens in all categories	
		No. of Home Gardens	Total extents of all Home Gardens (ha)	No. of Home Gardens	Total extents of all Home Gardens (ha)	No. of Home Gardens	Total extents of all Home Gardens (ha)	Total No of Home Gardens	Total extents (ha)
1	Colombo	255,008	12,072	48,152	5,419	1,700	1,190	304,860	18,680
2	Gampaha	374,843	9,915	159,975	23,346	21,793	11,067	556,611	44,327
3	Kalutara	179,568	5,926	89,350	14,039	2,190	1,745	271,108	21,710
4	Kandy	74,417	2,517	69,974	11,193	4,585	3,936	148,976	17,646
5	Matale	33,885	1,636	70,271	15,347	13,427	9,615	117,583	26,598
6	Nuwara Eliya	10,694	270	32,737	5,637	8,782	7,376	52,213	13,283
7	Galle	213,288	6,552	68,095	7,764	15	25	281,398	14,340
8	Matara	33,110	1,430	167,465	34,775	13,686	7,037	214,262	43,242
9	Hambantota	29,431	1,468	102,746	23,146	20,997	11,963	153,174	36,578
10	Jaffna	75,609	4,309	86,803	19,391	5,672	3,871	168,084	27,570
11	Mannar	18,795	774	21,160	3,218	366	294	40,321	4,286
12	Vavuniya	2,678	118	26,656	5,658	24,936	17,747	54,270	23,524
13	Mullaitivu	75	5	23,383	6,028	16,022	14,871	39,480	20,904
14	Killinochchi	3,315	161	24,417	7,030	12,415	10,774	40,147	17,965
15	Batticaloa	85,150	3,923	57,104	7,478	3,657	2,525	145,911	13,925
16	Ampara	82,876	2,576	105,652	18,403	17,332	11,753	205,860	32,732
17	Trincomalee	36,364	1,282	30,182	5,750	17,291	9,981	83,837	17,013
18	Kurunegala	80,739	3,655	308,305	81,900	56,657	45,368	445,701	130,922
19	Puttalam	82,096	3,715	92,697	32,239	24,759	20,451	199,552	56,404
20	Anuradhapura	26,122	12,432	173,696	41,295	39,769	21,452	239,587	75,178
21	Polonnaruwa	17,203	2,130	101,366	31,690	4,468	2,564	123,037	36,383
22	Badulla	86,720	5,852	58,182	15,986	16,627	8,435	161,529	30,273
23	Monaragala	10,438	615	84,762	22,229	29,118	24,307	124,318	47,152
24	Ratnapura	71,944	6,187	211,542	41,270	28,156	16,804	311,642	64,261
25	Kegalle	23,459	914	32,708	5,668	1,952	1,883	58,119	8,465
	Total	1,907,828	90,432	2,247,381	485,897	386,372	267,032	4,541,580	843,362
	Total (Acres)		223,368		1,200,165		659,570		2,083,103

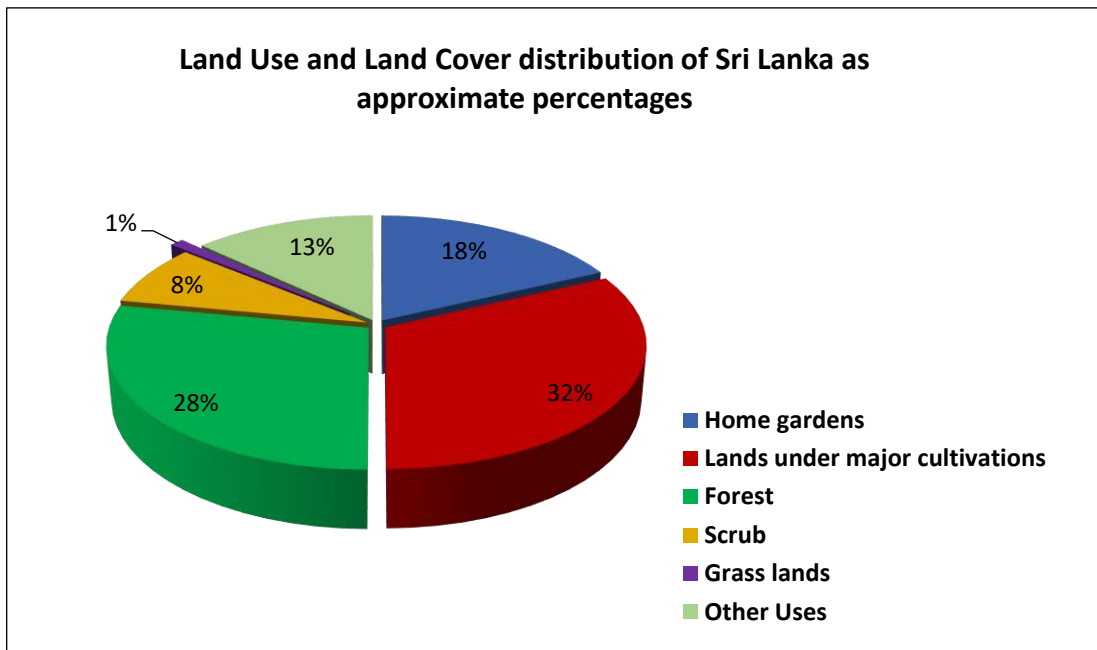


Fig. 5. Land Use and Land Cover distribution of Sri Lanka as approximate percentages (Source, LUPPD).

There are about 4,541,580 home gardens available in the country (Table 1). The total extent of all home gardens is roughly 843,362 ha. The distribution pattern of home gardens is graphically presented in Fig. 6 and 7. Data revealed that Gampaha and Kurunegala districts are having a greater number of home gardens compared to other districts. Size of the majority of the home gardens (about 50%) belongs to the second category i.e. larger than 0.05 ha (>20 perches) and less than or equal to 0.4 ha (160 perches or 1 acre).

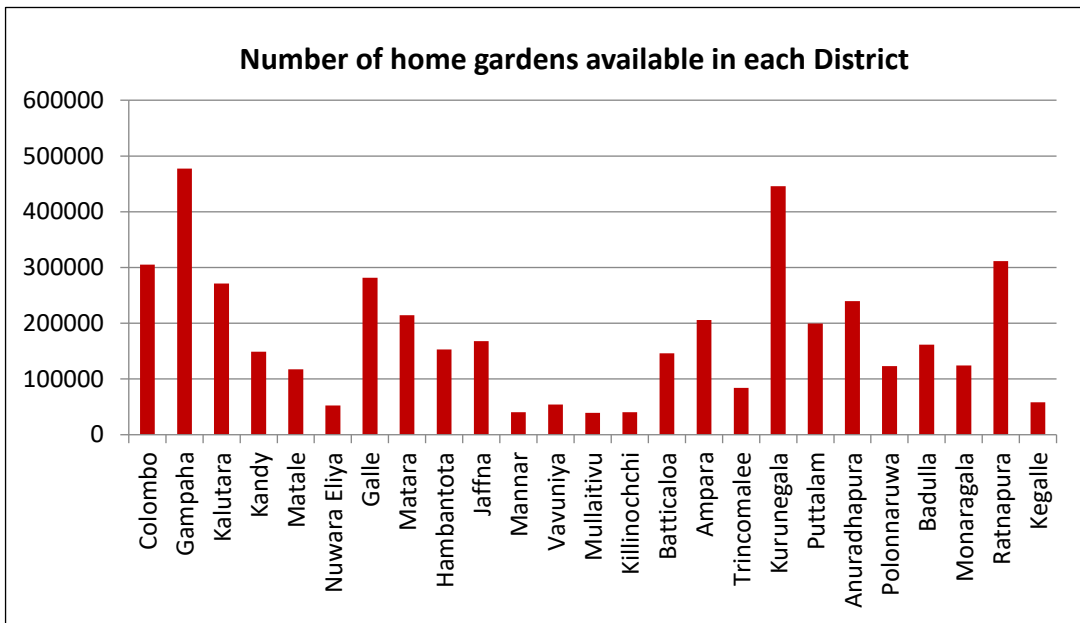


Fig. 6. Number of home gardens available in each District.

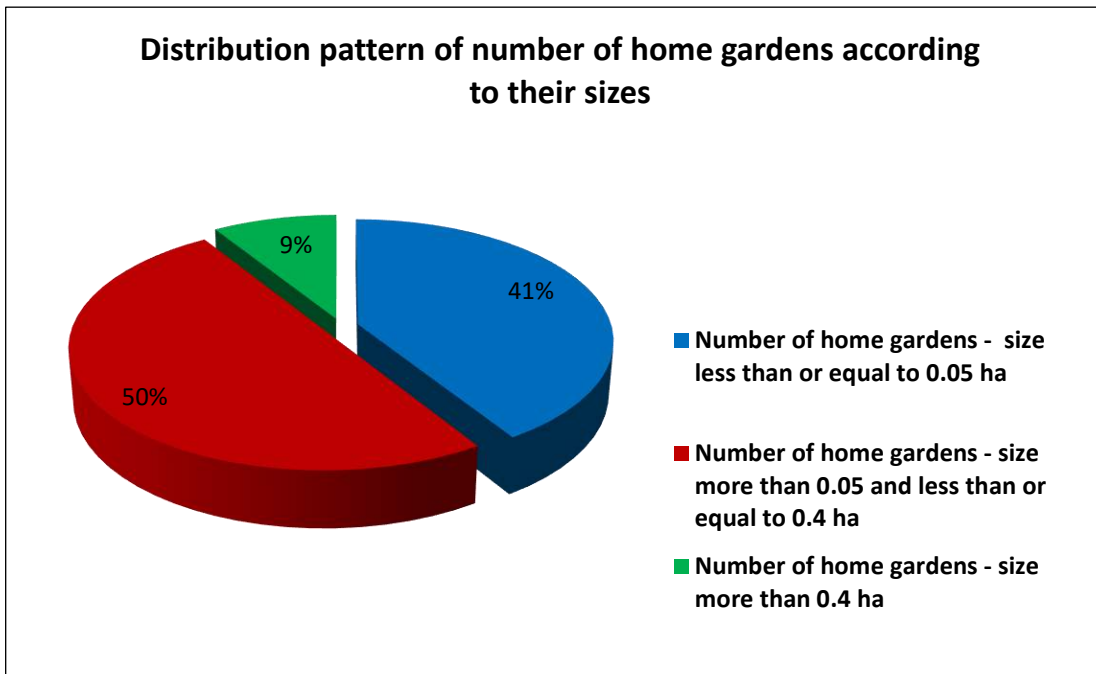


Fig. 7. Distribution pattern of home gardens according to their sizes

7. Present status of Home Gardens in Sri Lanka.

The present status of the home gardens is varying from one area to another depending on the agro-climatic condition, availability of resources, size of the land parcel, attitude of the owner and other socio-economic factors. However, to realize the objectives of the study three parameters were considered to determine the status of the home gardens. They are (a) water availability, (b) space availability for tree crops and (c) status of utilization. These factors are useful to plan the home garden development programme.

(a) Water availability

In Sri Lanka majority of home gardens are having wells and pipe borne water supply. There are 12 % of home gardens do not have water sources within the home garden and getting water from outside for their day to day activities. Some are getting water from either common wells or from irrigation canals nearby. Some of the home gardens do not have any water supply at all and completely depend on the rain. Some home gardens are having rain water harvesting tanks to collect rainwater mainly used for drinking purposes. These rainwater harvesting systems have been observed in some of the divisions in the Kurunegala district. The number of home gardens as a percentage of the total number according to their water availability is given in Fig. 8.

In this study pipe borne water includes both water supply obtained from the National Water Supply and Drainage Board and water obtain from community water supply projects. Wells include shallow wells, deep tube wells, agricultural wells and shallow ponds (*“Pathas”*).

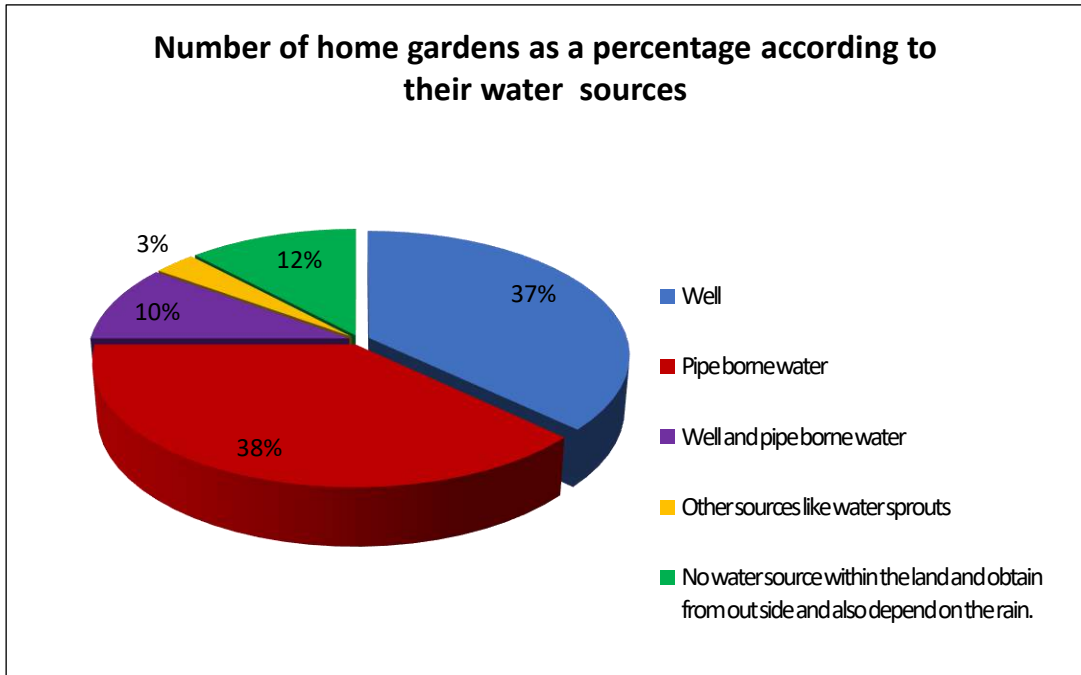


Fig. 8. Number of home gardens as a percentage, according to their water sources.

(b) Space availability for tree crops

The purpose of obtaining this information is to determine roughly the requirement of tree crops like coconut, jack etc. In some home gardens space is not available because the size of the land parcels is small. It was observed that in some home gardens, sizes of the home gardens are large but they don't have enough space due to existing high tree density. Guidance should be provided to improve the management of such home gardens may be removing unnecessary trees and by pruning of overgrowing trees. The number of home gardens which are having space for tree crops is shown as a percentage in Fig. 9. In addition, a comparison has been done with the total number of home gardens with the number of home gardens which are having space for tree crops in the districts (Fig. 10).

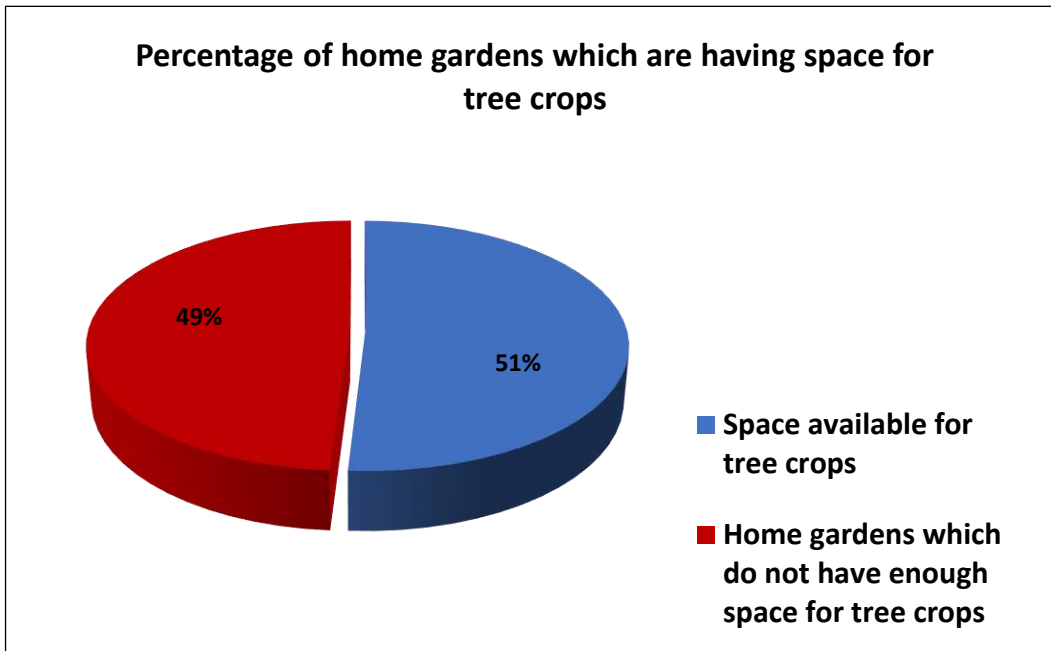


Fig. 9. Percentage of home gardens which are having space for tree crops

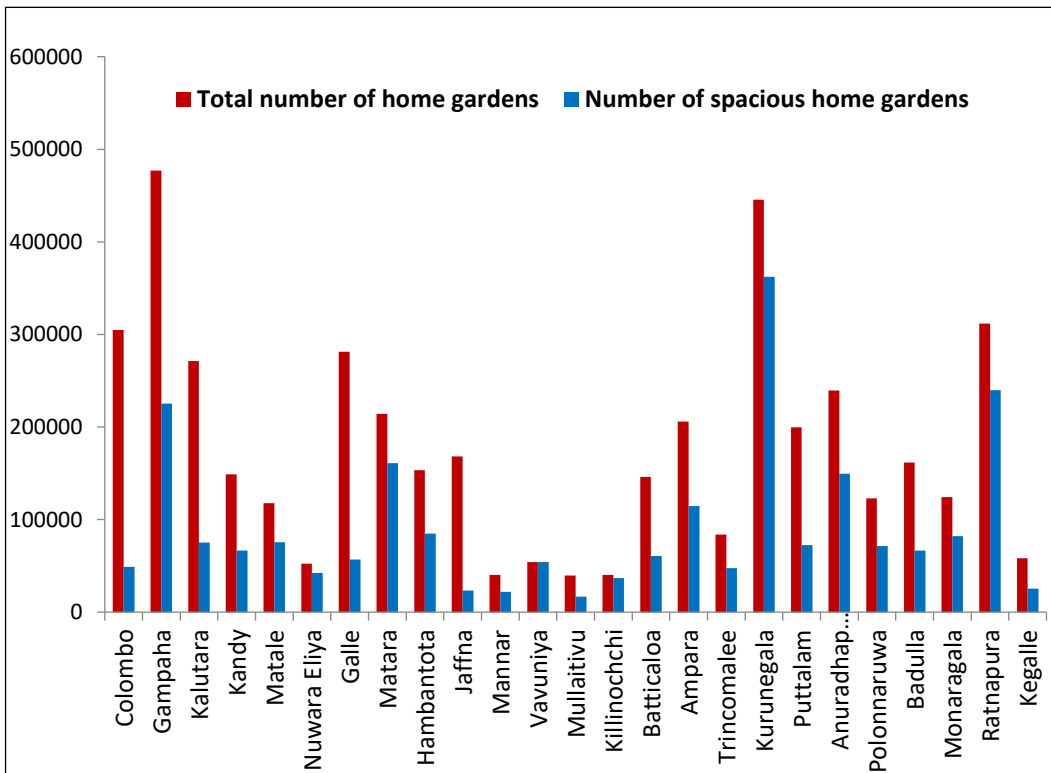


Fig. 10. Comparison between total number of home gardens with number of spacious home gardens

(C) Status of utilization

In most of the cases, the term “underutilized lands” indicates that there is a room for “development”. Therefore, knowing the rough figure about underutilized home gardens is important for planning. Underutilization can be determined by looking at several factors such as poor crop density, poor yield, poor growth, disorganized crop architecture etc. There are several reasons that can be identified for underutilization. They can be broadly classified into three categories as (a) Physical reasons, (b) Socio-economic reasons and (c) Other reasons.

(a) Physical reasons

- I. Difficult terrain of the land
- II. Degraded soil
- III. Lack of water (soil moisture stress)
- IV. Poor quality of planting material

(b) Socio-economic reasons

- I. Lack of capital
- II. Lack of inputs
- III. Lack of know-how
- IV. Poor extension services
- V. Lack of labour
- VI. Land ownership/tenure issues
- VII. Absentee landlord
- VIII. Lack of intention

(c) Other

- I. Animal damage to crops

Some of the issues can be addressed by a sound programme and by that home gardens can be improved to reach the full potential. Generally, 52% of the home gardens in the country are underutilized as an overall picture (Fig.11). Underutilization on district basis is shown in Fig. 12.

8. Major issues present in home gardens in Sri Lanka

There are several issues that were identified under this study and also from the previous exercise like village-level participatory land use planning. Some of them are common and some are specific to the location. The common issue is the wild animal threats to the crops. It has been observed that animal damage to crops is an important issue in most of the districts. The damage mainly caused by wild elephants and monkeys.

Lack of water (soil moisture stress) is a common issue in dry zone home gardens. But in some cases poor drainage also observed in dry zone particularly during rainy season. For example, in Polonnaruwa district some of the home garden areas are used for paddy cultivation due the poor drainage condition. This is mainly due to selection of land for a particular land use without a proper land use plan. In some of the wet zone home gardens, poor drainage has also been experienced.

Large home gardens may have the issue of weed infestation due to a lack of labour. This is common in the dry zone home gardens, since the cultivation is confined to rainy seasons. Soil degradation (mainly due to soil erosion and soil acidification in the wet zone) is another common issue particularly in wet zone home gardens. However, soil erosion is a common phenomenon even in the dry zone home gardens mainly due to poor land cover.

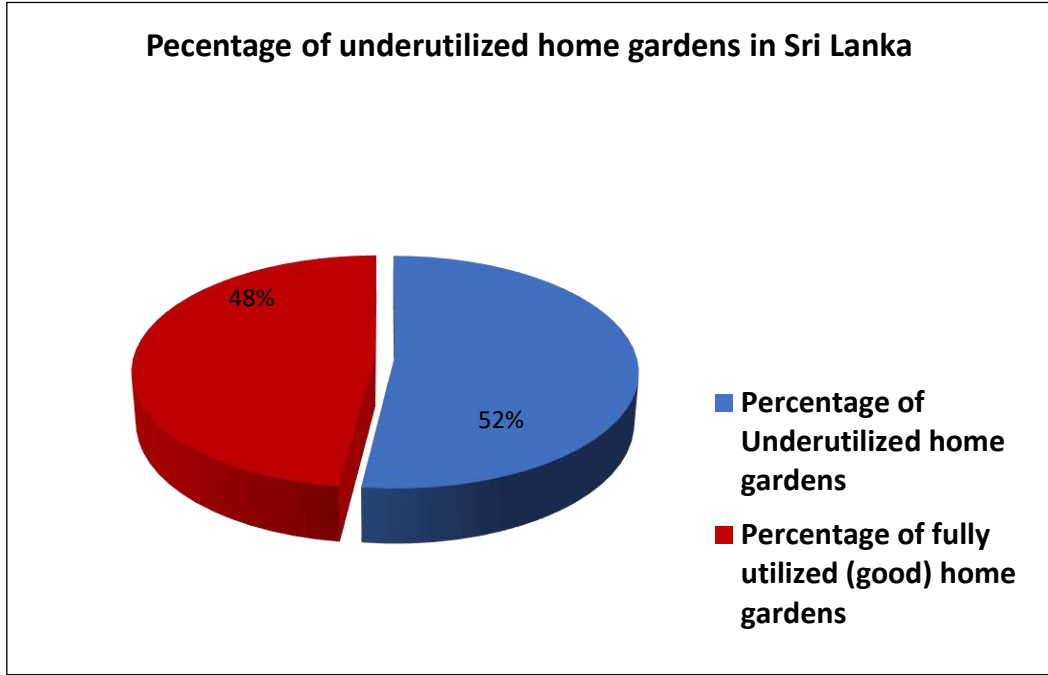


Fig. 11. Percentage of underutilized home gardens due to various reasons.

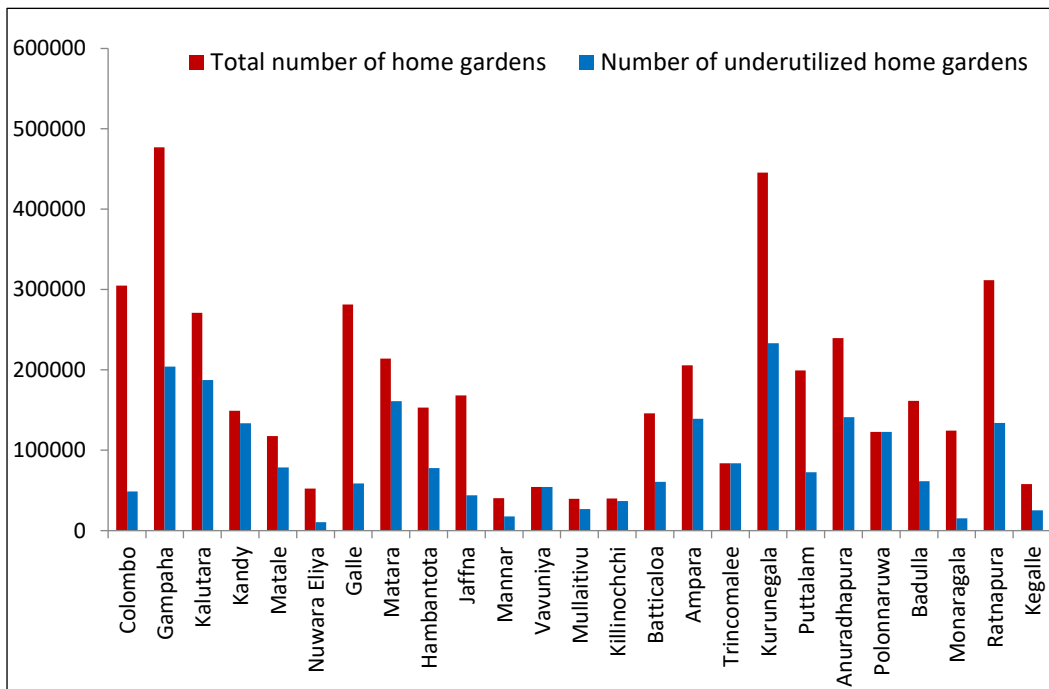


Fig. 12. Total number of home gardens Vs number of underutilized home gardens.

Part II – District Reports

All district reports with data tables are given separately as annexes according to the following order.

Annex 1	-	Colombo District
Annex 2	-	Gampaha District
Annex 3	-	Kalutara District
Annex 4	-	Kandy District
Annex 5	-	Matale District
Annex 6	-	Nuwara Eliya District
Annex 7	-	Galle District
Annex 8	-	Matara District
Annex 9	-	Hambantota District
Annex 10	-	Jaffna District
Annex 11	-	Mannar District
Annex 12	-	Vavuniya District
Annex 13	-	Mullaitivu District
Annex 14	-	Kilinochchi District
Annex 15	-	Batticaloa District
Annex 16	-	Ampara District
Annex 17	-	Trincomalee District
Annex 18	-	Kurunegala District
Annex 19	-	Puttalam District
Annex 20	-	Anuradhapura District
Annex 21	-	Polonnaruwa District
Annex 22	-	Badulla District
Annex 23	-	Monaragala District
Annex 24	-	Ratnapura District
Annex 25	-	Kegalle District

Our Vision
Optimum and Sustainable Utilization
of Land Resource in Sri Lanka

Land Use Policy Planning Department

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