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a Data Update

Working Paper 19

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Responsibility for the ideas, facts and opinions presented in this research paper rests solely with the authors. Their opinions and interpretations do not necessarily reflect the views of the Cambodia Development Resource Institute.

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Contents

Abstract

1. This paper first presents the allocation of land to different uses and then examines data on land and fisheries concessions. The registration and titling process and data are next examined. Finally, the paper retabulates and interprets data from eight socio-economic surveys conducted in Cambodia in the recent years in order to analyse the information on land that they provide. The aim of this final chapter is to make a count of the number of land parcels in the country, calculate the average size of parcels, estimate landlessness and land inequality, and make a preliminary estimate of the relationship between poverty and landlessness.

2. Economy-wide data on land use for recent years have been published for 1992–93 and 1996–97. These data are generated by measurements and calculations made out of maps drawn from aerial and satellite photographs. While these information profiles appear to be fairly accurate, there are problems in reconciling the totals in some of the data tables. Such problems usually appear when detailed cartographic maps to reconcile finer differences do not support the aerial photographs. In addition, there is a lot of misinformation on land concessions arising out of a lack of appropriate data in the public domain. Concessions for agriculture are granted by different agencies that do not always use the same approach. As a result, data from different sources do not necessarily match, nor are they consistent across different years. The absence of a central bureau that could collect and collate and finally reconcile different data sets is acutely felt here.

3. Most land in the country is not yet registered and titled. At the more aggregate level, demarcations between land under different uses - for forests, agriculture, urban areas and so forth - have to be made. Next, the boundaries of various districts, communes, and other administrative bodies have to be demarcated. In the domain of private lands, there are a little over half a million certificates issued against an estimated number of 4.5 million application receipts issued. This backlog is indeed daunting.

4. There were 2,093,152 households in the country, as per 1999 Socio-Economic Survey estimates: 1,782,350 in rural areas and the rest in urban areas. This is against a figure of 2,188,663 recorded in the 1998 Population Census. The total agricultural land area measured was 3.91 million hectares as of 1996–97, though it is not certain whether or not it is all brought under the plough each year. Rice land was estimated at about 2.7 million hectares, while the rest was presumably devoted to *chamkar* crops, plantations and other perennial crops, mainly, though not exclusively, under concessions. Forests cover about 58–59 percent of the total area of the country. The area under forests, as per estimates obtained for 1992–93 and 1996–97, has reduced very marginally. But these estimates do not reflect upon the quality of the forests, a point often made by those who monitor forests.

5. The total area given out for forest concessions, as per company-specific records available from Ministry of Agriculture, Forestry and Fisheries (MAFF), in 2001, was 4.21 million

hectares. This was 6.39 million hectares in 1999, against a figure of about 8 million claimed by an Oxfam study.[1] This discrepancy could be partly due to the fact that government records are not always available in the public domain. Area under agricultural concessions is believed to be about 0.71 million hectares, and area under fishery concessions is about one million hectares. As some of these figures are believed to be approximates, it is strongly proposed that they be inventoried again.

6. The Socio-Economic Survey of 1999 shows the total number of agricultural land parcels to be about 2.88 million hectares. This means that for every household in the country, there are 1.37 parcels of land. The average size of a parcel is small at 0.90 hectares. The total number of residential plots adds up to 2,029,160, including those that are normally possessed and those that may be the subject of some form of dispute. Homelessness works out at about three percent. The average size of residential land is about 888 square metres, about 919 square metres in rural areas and 616 square metres in urban areas. Depending upon the data source consulted, agricultural landlessness works out at about 12–15 percent: the interval could be explained by the regional/target group specific variation. The average size of agricultural land holdings in the agrarian sector is about 1–1.3 hectares per household, again depending upon the area and target group. The statistically most representative sample, the Socio-Economic Survey of 1999, shows this to be 1.33 hectares, though for other reasons there could be bias in these data as well. Agricultural land is owned by both urban and rural dwellers.

7. There is considerable confusion among the populace with regard to the legality of ownership of land. A majority of the people believe that if they are occupying land without conflict or controversy it is legally theirs, irrespective of whether they formally possess land papers. Historically, this has been the traditional position. Only one out of four surveys that inquired about possession of land papers, the PET-98 Survey, projected the true position.

8. Though the average size of agricultural land plot is not large, there is large inequality in their distribution. The Gini coefficient of inequality, which ranges between 0 and 1, is well above 0.50 in almost all surveys. The Socio-Economic Survey of 1999 shows this to be 0.57 for rural areas and the Socio-Economic Survey of 1997 shows this to be 0.66. This gap is too large and it is believed that both these surveys have a data bias or error.

9. The different socio-economic surveys studied in this paper, other than Oxfam's LADIT Survey that specifically collected information on the causes of landlessness, have collected data pertaining to land as additional information to their main concerns. For example, the socio-economic surveys of the National Institute of Statistics were essentially concerned with measurement of standards of living, UNICEF-World Food Programme surveys with nutritional and food security issues, and the Mekong River Commission surveys with fishing capacities and equipment available in the riparian communities. Also, the geographic areas covered by most of these surveys are different. As a result, there is huge inconsistency in the parameters generated from the different data sets on variables relating to land. The need for an exclusive survey on land issues is therefore paramount. Such surveys are periodically conducted in other countries. The Land Tenure Center at the University of Wisconsin, United States, maintains an inventory of such surveys which contains information on their coverage, sample design and so forth. The government may find it useful to create a central bureau of statistics that would not only collect data and collate data collected by others, but also reconcile differences that may exist when data are collected by different agencies.

[1] The source of this figure could not be corroborated.

Acronyms and Abbreviations

Acronyms

ADB	Asian Development Bank
CASD	Community Action for Social Development
CDC	Council for the Development of Cambodia
CDRI	Cambodia Development Resource Institute
CMAC	Cambodia Mine Action Center
COM	Council of Ministers
DLMUPCC	Department of Land Management, Urban Planning, Construction and Cadastre
DOF	Department of Forestry
FAO	Food and Agricultural Organisation
FinnMap	Finnish Co-operation Agency
GTZ	Deutsche Gesellschaft Fuer Technische Zusammenarbeit
IDP	Internally Displaced Person
LADIT	Landlessness and Development Information Tool
LMAP	Land Management and Administration Project
MAFF	Ministry of Agriculture, Forestry and Fisheries
MLMUPC	Ministry of Land Management, Urban Planning and Construction
MRC	Mekong River Commission
NGO	Non-Governmental Organisation
NIS	National Institute of Statistics
OLMUPCL	Office of Land Management Urban Planning, Construction and Land
PET	Protracted Emergency Targets
PFD	Partners for Development
SES	Socio-Economic Survey
UNICEF	United Nations Children's Fund
WCARRD	World Conference on Agrarian Reforms and Rural Development
WFP	World Food Programme

List of surveys discussed in the paper and abbreviations

Survey Title	Year	Abbreviation
Cambodia Mining Action Center	2001	CMAC
Government records on fisheries concessions	2001	-
Government records on land area given out on forest and agricultural concessions	1999; 2000	-
Government records on land use	1992–93; 1996–97	-
LADIT, OXFAM-GB	1999–2000	LADIT
Mekong River Commission Survey	1995–96	MRC-95–96
Protracted Emergency Target, WFP	1998	PET-98
Socio-Economic Survey, National Institute of Statistics	1996	SES-96
Socio-Economic Survey, National Institute of Statistics	1997	SES-97
Socio-Economic Survey, National Institute of Statistics	1999	SES-99
UNICEF Follow-up Survey	2000	Follow-up-00
WFP-UNICEF Baseline Survey	1998	Baseline–98

Non-English words used in text

Chamkar: Land which is used for growing crops other than rice.
Krom Samaki: 'Solidarity groups' formed during the 1980s as a form of collective farming.

Acknowledgements

This paper is one of the outputs of a larger research programme that CDRI will be pursuing on land, rural livelihoods and food security through 2001–03. The principal purpose of the programme is to generate accurate data on the conditions of livelihood of rural populations, particularly those belonging to the vulnerable sections of society. To this extent the CDRI research programme feeds into the overall priority of the government to alleviate poverty in the country. The Institute has initiated four studies under this programme to date. This is the second study to be completed; the first was the *Social Assessment of Land in Cambodia.*

In May 2001, the Ministry of Land Management, Urban Planning and Construction (MLMUPC), asked CDRI to prepare a study on the prevailing tenural conditions in Cambodia to feed into its Land Management and Administration Programme, funded by the World Bank's Policy and Human Resource Development Project Preparation Facility with a grant from the Japanese government. Hence an earlier version of this study was submitted to MLMUPC. The authors are grateful to MLMUPC for sharing the costs of preparation of the data sets and facilitating access to some of the data sets.

The authors would like to single out Mr. Sik Boreak, a former researcher at CDRI, for special thanks for introducing them to Cambodia's land database. Chapters 5 and 6 of this paper have drawn heavily on his research work completed during his association with CDRI. Thanks are also due to the Ministry of Agriculture, Forestry and Fisheries, the National Institute of Statistics and the UN World Food Programme for permitting access to their data sets. The authors are grateful to Oxfam, Phnom Penh, for sharing not only the different studies prepared by them, but also the raw data of the LADIT Survey. Thanks are also due to CMAC for sharing their data with us.

This study owes a great deal to Ms. Eva Mysliwiec and Mr. Dararith Kim-Yeat of CDRI, for encouraging the authors to undertake this study during the summer of this year against considerable odds of personnel and time, providing flexibility with regard to time, and to Ms. Eva Mysliwiec for offering useful comments on the first draft during the preparation of this report.

Phnom Penh, August, 2001

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Chapter One

Introduction

1.1. Preamble

Over three-fourths of the population of Cambodia directly depends on agriculture and allied activities for its livelihood. Land is therefore the single most important productive asset for this section of the population. The traditional method of land acquisition in Cambodia has been *acquisition by the plough* whereby a prospective user of land acquired what s/he needed for subsistence *without stifling* the collective rights of the community. While in theory all land belonged to the sovereign, in practice it belonged to the one who used it productively (van Acker 1999).[1] For the 100 years between 1884 and 1989, land had been subjected to various laws, collectivisation of different kinds and privatisation. However, the traditional method of land holding and control has not, as yet, been fully given up by farmers and other land users. With the formal privatisation of land in 1989 and, more recently, a review of the land laws to make them more exhaustive and complete, the stage is set for putting a more comprehensive land policy in place. It is in this context that taking stock of the land situation is important, so as to contribute to a smooth implementation of such a policy. The genesis of this paper, though, goes beyond the land policy: it is rooted in CDRI's larger concern with land and food security in the country, which is the focus of a major research programme to be implemented by CDRI during 2001–03.

1.2. Objectives of the Study

This paper aims to identify, scrutinise and comment upon the quality and adequacy of different existing large data sets (available from government ministries, international organisations, research institutions and so forth) that contain information on land use, tenure and related issues. It then analyses these data to establish linkages between standards of living/poverty and landholding. The reasons for undertaking this exercise are to explore what is available in terms of hard data on different tenural and socio-economic surveys of land in the country, assess their usefulness in understanding land-related issues, and suggest gaps that need to be filled in the future. The paper aims to collate *existing* data sets only, from which it draws inferences.

More specifically, the following objectives are proposed:

A. The first objective is to enumerate land use under different types and by different agents, estimate area under concessions, and provide a brief description of various types of concessions granted to date. Explication of land allocated to different uses also forms a part of this exercise. This section of the paper is essentially descriptive in nature.

B. The second objective is more analytical: it entails the re-tabulation of data from different socio-economic data sets. Here, the effort will be to make a count of the number of land parcels in the country by different dis-aggregations that the data sets permit. The average

[1] This complex debate is not elaborated here but some aspects of it are described in CDRI's study, *Social Assessment of Land in Cambodia* (So *et al.* 2001).

size of parcels for residence and agriculture and the extent of landlessness and land inequality are also calculated. Other relevant details on land that the data sets provide as well are scrutinised.

C. The third objective is to consider the question whether or not, and to what extent, land ownership is significant in determining the standard of living/poverty status of a household. For this purpose, data are re-tabulated to make an assessment of the relationship between standard of living and land ownership. Multivariate analysis is also attempted in order to judge the strength of such links.

1.3. Methodology

The different data sets analysed are as below:

1. Government records on land use, 1992-3 and 1996-7;
2. Government records on land area given out on forest and agricultural concessions, 1999, 2001;
3. Government records on fisheries concessions, 2001;
4. CMAC data surveys, 2001;
5. The Socio-Economic Survey (SES) of 1996;
6. The Socio-Economic Survey (SES) of 1997;
7. The Socio-Economic Survey (SES) of 1999;
8. The Mekong River Commission Survey of 1995–96 (MRC-95—96);
9. The WFP-UNICEF Baseline Survey of 1998 (Baseline-98);
10. The UNICEF Follow-up Survey of 2000 (Follow-up-00);
11. The PET Survey of 1998 (PET-98);
12. The LADIT for 1999-2000[2]

The data mentioned above have been collected using different methods: aerial photography, geographic information systems, administrative negotiations (e.g., the concessions) and field-based surveys. The sources listed at numbers five to 12 above are field-based studies. Of these only the three SES cover the whole country (with the exception of some areas excluded for security reasons). These three SES are sample surveys; hence only very limited dis-aggregation is permissible. The MRC-95–96 Survey covers eight provinces and concentrates on fishing communities. The Baseline-98, Follow-up-00 and PET-98 surveys similarly concentrate on identified sections of the society and geographic areas where specific programmes are in operation. The LADIT Survey is the only one of these field-based surveys that had the primary intention of collecting data on land. It covers 19 provinces (183 villages) though its coverage is not statistically representative as per its own reckoning. The eight data sets can nevertheless be simultaneously interpreted to develop a provisional profile of some socio-economic issues related to land in Cambodia.

A word about the limitations of this study is essential. The analysis is exhaustive and complete only to the extent that data are available and to the extent that they are reliable and representative. As stated above, only the LADIT Survey primarily addresses the land issue, but even this survey does not enumerate the size of land plots and their tenural status. Questions related to land in the other surveys have been asked only by way of additional

[2] This data set is analysed only from what is available from reports produced by the OXFAM Land Study Project. A retabulation of this data set has not been attempted in view of the form in which it is stored. LADIT stands for Landlessness and Development Information Tool.

information, in the samples that were scrutinised. Therefore, the inferences of this paper are tentative and provisional.

1.4. Layout of the Paper

This introductory chapter has outlined the objectives and methodology of the study. Chapter 2 analyses land use by broad categories of use. Chapter 3 details land concessions for forests, agriculture and fish. Chapter 4 describes the authorities that administer land and issue land titles, and details the number of titles issued to date. Chapter 5 provides a short description of the different sample survey data sets and Chapter 6 analyses data on land tenure and related variables. Chapter 7 attempts to undertake some preliminary multivariate analysis to seek possible association between poverty land holding. Chapter 8 concludes the paper. Descriptions and analyses in Chapters 5 and 6 are an extension of an exercise carried out by an earlier CDRI study (Sik 2000): four additional data sets are included in this analysis.

Chapter Two

Land Use

2.1. Land classification

There has been no major survey conducted in the country in recent years that has surveyed and mapped all land. Boundaries of administrative blocks are approximate, as are demarcations of land under different uses. For example, land covered by forests or under agricultural use is not always clearly demarcated.[1] In rural areas, private ownership of land and boundary demarcations are, to an extent, still recognised according to consensus within the community. It is in this context that the data are analysed.

In recent years, the government has prepared two sets of reports, maps and data on land use in the country, one pertaining to 1992–93 and the other to 1996–97. The Ministry of Agriculture, Forest and Fisheries (MAFF) has prepared both these with technical assistance from the Mekong River Commission (MRC). These are based on satellite and aerial photography.

Table 2.1 presents the MAFF data on land classification and utilisation for 1992–93 and 1996–97. This table is reproduced in the same format as it was received without formal editing. Data for both 1992–93 and 1996–97 show that forests occupied a dominant share of the land at about 58–59 percent, while agriculture accounted for a smaller proportion of about 20 percent and grasslands, shrubs and similar foliage covered about 15–16 percent. Rocky terrain, urban settlements, water bodies and so forth occupy the remaining area.[2]

According to these data, the forest area reduced from 10.86 million hectares to 10.64 million hectares, a fall of about 2.04 percent over the five year period. This area, defined as "woodland" in the table, covered 59.82 percent of the country's total land in 1992–93, declining to 58.60 percent in 1996–97. Despite the classification of forests being fairly detailed, the table does not permit the change in the quality of the forest to be determined. For example, forests categorised as "evergreen dense" and "evergreen disturbed" have reduced by 29,265 hectares and 72,138 hectares, respectively. But has there been a corresponding rise in forests under "evergreen mosaic" or "mixed mosaic" or any other heading consequent to those reductions? Or has the quality of evergreen dense forest in terms of density of trees per unit area, for instance, deteriorated? The table shows that in 10 out of the 14 categories of forests classified, the area under forest cover has decreased. But there are no clear answers to the questions raised here. These questions are important since it is alleged that fairly rapid deforestation occurred during the 1990s. [3]

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1 Statements made at Wrap-up Meeting of the World Bank Mission, MLMUPC, July 17, 2001 confirmed this.

2 RGC (1998) has also put forth figures on land use based on Landsat Satellite Imagery. These are close to the data reproduced in Table 2.1, but not identical. It is believed that both estimates come from the same source but interpretation of the satellite photographs could be different.

3 The different donor's meetings on this subject and countless media reports bear evidence to this.

Table 2.1: Land utilization classification

	1992/3 (ha)	% Overall	1996/7 (ha)	% Overall	Area Change 1992/3-1996/7 (ha)	%change 1992/3 - 1996/7
Wood Land						
Evergreen Dense	654,442	3.61	625,177	3.44	-29,265	-4.47
Evergreen Disturbed	3,255,533	17.93	3,183,395	17.54	-72,138	-2.22
Evergreen Mosaic	129,902	0.72	178,147	0.98	48,245	37.14
Mixed Dense	99,124	0.55	95,560	0.53	-3,564	-3.60
Mixed Disturbed	1,325,353	7.30	1,284,446	7.08	-40,907	-3.09
Mixed Mosaic	110,066	0.61	125,320	0.69	15,254	13.86
Deciduous	4,008,000	22.08	3,931,219	21.66	-76,781	-1.92
Deciduous	342,204	1.89	350,178	1.93	7,974	2.33
Forest Re-growth	435,618	2.40	374,197	2.06	-61,421	-14.10
Inundated Forest Re-growth	21,623	0.12	20,819	0.11	-804	-4.26
Inundated Forest	229,266	1.26	219,906	1.21	-9,360	-4.08
Mangrove Forest	77,669	0.43	72,835	0.40	-4,834	-6.22
Forest Plantation	72,307	0.40	82,425	0.45	10,118	13.99
Inundated Forest Mosaic	98,587	0.54	94,582	0.52	-4,005	-4.06
Sub-Total	**10,859,694**	**59.82**	**10,638,206**	**58.60**	-221,488	**-2.04**
Non-Wood Land						
Wood/Shrub and Evergreen	559,052	3.08	545,101	3.00	-13,951	-2.50
Grassland	476,804	2.63	488,643	2.69	11,839	2.48
Bamboo	32,224	0.18	33,730	0.19	1,506	4.67
Wood/Shrub-land Dry	1,267,770	6.98	1,165,377	6.42	-102,393	-8.08
Wood/Shrub-land Inundated	377,401	2.08	348,971	1.92	-28,430	-7.53
Mosaic of Cropping (<30%)	198,879	1.10	285,155	1.57	86,276	43.38
Mosaic of Cropping (>30%)	104,444	0.58	143,796	0.79	39,352	37.68
Agricultural Land	**3,692,356**	**20.34**	**3,901,869**	**21.49**	209,513	**5.67**
Barren Land	15,090	0.08	18,136	0.10	3,046	20.19
Rocks	2,149	0.01	2,149	0.01	0	-
Urban/Built-Over Areas	26,625	0.15	27,615	0.15	990	3.72
Water	446,163	2.46	469,138	2.58	22,975	5.15
Other	1,756	0.01	1,756	0.01	0	-
Wetland	91,079	0.50	83,340	0.46	-7,739	-8.50
Cloud	1,497	0.01	1	0.00	-1,496	-
Sub-Total	**7,293,289**	**40.18**	**7,514,777**	**41.40**	221,488	**3.04**
Grand-Total	**18,152,983**		**18,152,983**			**-**

Note: This table is reproduced without formal editing. Source: MAFF

Agricultural land area rose from 3.69 million hectares to 3.91 million hectares over this period. This is higher than 2.98 million hectares recorded in 1960. Surely, part of this additional 0.93 million hectares land, brought under rice cultivation to meet the requirements of the rising population as well as for commercial farming, has been reclaimed by cutting down the forest. Interestingly, land under "mosaic of cropping" within "non-wooded area" rose by more than 41 percent, implying that the commons are being increasingly used for subsistence purposes. Barren land, land under urban areas and under water bodies all increased in area, while wetlands fell by nearly 10 percent.

These data could lead one to believe that land use is undergoing some change towards a little less forest or less dense forest, and a little more agriculture. For sure, no major conclusions are possible in the absence of more detailed cadastral surveys. Moreover, the situation has not been recorded at the national level since 1997.

2.2. Land use under different crops

Table 2.2a presents more detailed data on land under different uses. These data, pertaining to 1992–93, show that of about 3.9 million hectares under cultivation, about 2.8 million were under one or other type of paddy crop, and a little over one million hectares under other crops. Similar data for 1996–97, presented in Table 2.2b in a somewhat different configuration, are not comparable with the earlier data for reasons pertaining to the difference in classification. Also, the coverage in 1996–97 is smaller — data are not available for the parts of the southeast (Svay Rieng and parts of Mondolkiri) and southwest (Koh Kong and parts of Kampot). While the 1992–93 data cover the whole country (181,535 sq. km), the 1996–97 data cover only 150,609 sq. km. Thus, it is not possible to calculate the change in cropping pattern or agriculture-specific land use change between these two periods. Maps showing land use in 1992–93 and in 1996–97 are presented in Maps 1 and 2 respectively. The map for 1996–97 is incomplete because, as stated above, data in some areas are not available. *The reason that these data and maps are reproduced here is to state that these data are all that is available in the public domain*. Further details either do not exist, or if they do, they have not been made available. Detailed temporal comparisons are therefore hampered.

Table 2.2a: Cambodia land-use area 1992–93

No.	Land Classifications	Area, km²
1	Urban cities	45
2	Paddy fields	26,097
3	Receding rice fields	293
4	Up land Crops	4,665
5	Swidden agriculture	1,856
6	Orchards	188
7	Plantation	746
8	Field crops	5,299
9	Evergreen forest	47,633
10	Coniferous forest	98
11	Deciduous forest	43,012
12	Mixed forest	9,773
13	Secondary forest	5,170
14	Flooded forest	3,707
15	Flooded secondary forest	2,598
16	Mangrove forest	851
17	Woodlands.	.6,563
18	Natural shrub-lands	13,501
19	Abandoned shrub-lands	2,528
20	Marshes	14
21	Grasslands	24
22	Grass savanna	468
23	Flooded grasslands	849
24	Abandoned grasslands	1,095
25	Marshes	15
26	Water surfaces	4,111
27	Barren lands	336
	Total Area	**181,535***

** This figure is not accurate; it is higher than the official 181,035 km² of total land area in Cambodia.*
Note: This table is reproduced without formal editing. Source: MAFF

Table 2.2b: Cambodia land-use area, 1996–97

No.	Land Classifications	Area, Km²
1	Agricultural plantation (rubber, tea, coffee, etc.)	68
2	Bamboo forest	218
3	Barren land	126
4	City, town and built-up areas	1,745
5	Closed evergreen forest	3,075
6	Coniferous forest (pure)	49
7	Deciduous forest; continuous cover	36,798
8	Deciduous wood and shrub-land, including thicket	14,186
9	Evergreen wood and shrub-land	616
10	Field crop	2,003
11	Flooding forest	3,051
12	Flooding secondary forest	1,054
13	Forest plantation	493
14	Grassland (dry land and flooded)	5,090
15	Mangrove forest	0.1
16	Marsh and swamp (inland)	447
17	Mixed coniferous forest with broadleaf trees	2
18	Mosaic of closed and opened evergreen forest	997
19	Mosaic of deciduous forest blocks	2,535
20	Mosaic of semi-evergreen forest blocks	929
21	Open/disturbed evergreen forest	23,978
22	Other	452
23	Permanent paddy flew (single & narks sops)	23,025
24	Receding and floating paddy field	390
25	Secondary forest	4,840
26	Semi-evergreen forest, closed cover	1,063
27	Semi-evergreen forest; open/disturbed cover	11,446
28	Shifting cultivation	4,698
29	Swamp forest	2,227
30	Upland and perennial crop	135
31	Water (lake, pond)	4,269
32	Village and build-up areas	605
	Total (excluding a few provinces)	**150,609**

Note: Data coverage in this table is incomplete. This table is reproduced without formal editing. Source: MAFF

Map 1: Cambodia's Land Cover

Map 2: Land Use of Cambodia (1997)

Reserved and protected areas can be classified into national parks, wildlife sanctuaries, protected landscapes and multiple-use management areas. A detailed classification of these for 1992–93 can be seen in Table 2.3. Protected areas - mainly reserve forests, wildlife sanctuaries and national parks and other than sites such as the Angkor Wat temple complex - are about 3.3 million hectares or 18.3 percent of the country's area. Interviews with appropriate authorities in MAFF revealed that the area under reserved forests is higher than that shown by these figures since the forest concessions of a few companies have been cancelled and this reclaimed land has not given to other companies. Since comparable data for reserve forests for 1996–97 are not available, a temporal comparison is not possible.

Table 2.3: Creation and Designation of Protected Areas

	Area, ha	Location
National Parks		
- Kirirom	35,000	Koh Kong
- Phnom Bokor	140,000	Kampot
- Kep	5,000	Kampot
- Ream	21,000	Sihanoukville
- Botum Sakor	171,250	Kampot and Sihanoukville
- Phnom Kulen	37,500	Siem Reap
- Virachey	332,500	Rattanakiri and Stung Treng
Wildlife Sanctuaries		
- Aural	253,750	Koh Kong, Pursat, Kompong Chhnang and Kompong Speu
- Beng Per	242,500	Kompong Thom
- Peam Krasop	23,750	Koh Kong
- Phnom Samkos	333,750	Koh Kong
- Roniem Daun Sam	178,750	Battambang
- Kulen Promtep	402,500	Siem Reap and Preah Vihear
- Lomphat	250,000	Rattanakiri and Mondolkiri
- Phnom Prich	222,500	Mondolkiri
- Phnom Nam Lyr	47,500	Mondolkiri
- Snoul	75,000	Kratie
Protected Landscapes		
- Angkor	10,800	Siem Reap
- Banteay Chmar	81,200	Banteay Meanchey
- Preah Vihear	5,000	Preah Vihear
Multiple Use Management Areas		
- Dong Peng	27,700	Koh Kong
- Samlaut	60,000	Battambang
- Tonle Sap	316,250	Kompong Chhnang, Pursat, Battambang, Siem Reap, Kompong Thom
Grand Total	**3,273,200**	

Source: Preah Reachkret (Regulation) on Creation and Designation of Protected Areas, 1st Nov. 1993.
Note: This table is reproduced without formal editing.

Table 2.4 provides a province-specific breakdown of land under forest. The total figures shown in this table do not match with those in Table 2.1; hence comparisons between Tables 2.1 and 2.4 can be hazardous. However, comparisons do show that the size of forests has reduced in every province in the country over the five-year period.

2.3. Landmine-affected land

Areas affected by landmines can hardly be classified under “land use.” However, the report of the Cambodia Mine Action Center (CMAC) (CMAC 2001) states that the presence of landmines is confirmed in 109,775 hectares of land in Cambodia. This may not a very accurate estimate of the total mine-affected areas in the country since new mine-affected areas are being discovered continuously. In fact, the CMAC report states that there are 199,974 hectares of land where mine action is still needed. While 109,775 hectares may not appear to

be an area of significant size, the fact that mines are such a hazard — thousands of people are affected or killed each year — makes mine-affected areas an acute concern. Also, as seen from Map 3, mine-affected areas are spread across the whole country, which makes their presence even more problematic. Data on estimates of confirmed and suspected mine-affected areas, as obtained from CMAC, can be seen in Table 2.5.

Table 2.4: Forest Area 1992–93 and 1996–97, by province

Province	1992–93	1996–97	Change	Total Area	% Forest, 1996–97
Banteay Meanchey	199,889	175,122	-24,767	671,476	26.08
Battambang	588,499	581,349	-7,150	1,244,621	46.71
Kompong Cham	266,097	265,174	- 923	942,466	28.14
Kompong Chhnang	173,829	172,305	-1,524	529,095	32.57
Kompong Speu	356,375	339,147	-17,228	681,773	49.74
Kompong Thom	647,594	633,898	-13,696	1,244,748	50.92
Kampot	239,416	233,292	- 6,124	468,582	49.79
Kandal	21,363	20,890	- 473	357,112	5.85
Koh Kong	1,079,154	1,048,454	-30,700	1,238,532	84.65
Kratie	908,370	904,291	-4,079	1,197,278	75.53
Mondolkiri	1,132,455	1,125,913	-6,542	1,366,385	82.40
Phnom Penh	1,118	1,118	-	37,313	3.00
Preah Vihear	1,252,260	1,242,088	-10,172	1,401,540	88.62
Prey Veng	9,076	7,607	-1,469	481,553	1.58
Pursat	811,255	807,597	-3,658	1,159,674	69.64
Rattanakiri	1,012,241	985,339	-26,902	1,189,730	82.82
Siem Reap	617,415	596,120	-21,295	1,196,390	49.83
Sihanoukville	88,186	85,937	-2,249	139,125	61.77
Stung Treng	1,067,283	1,055,410	-11,873	1,189,669	88.71
Svay Rieng	5,026	4,641	-385	285,626	1.62
Takeo	15,600	5,218	-10,382	349,389	1.49
Oddar Meanchey	360,756	340,858	-19,898	511,349	66.66
Kep	3,273	3,273	-	14,704	22.26
Total	**10,856,530**	**10,635,041**	**-221,489**	**17,898,130**	**59.42**

Note: reproduced without formal editing. Source: MAFF

Table 2.5: Areas suspected and areas confirmed as landmine affected, 2001

Province	Suspected (hectares)	Confirmed (hectares)
Battambang	29065	27056
Oddar Meanchey	27223	16028
Kampot	10361	15017
Banteay Meanchey	6923	11408
Kompong Speu	3873	8236
Pailin	2448	7678
Kompong Cham	1915	5205
Preah Vihear	1751	5178
Siem Reap	1251	4095
Kompong Thom	1193	2274
Svay Rieng	1174	2038
Pursat	1098	1427
Kep	897	1382
Takeo	701	658
Sihanoukville	284	575
Koh Kong	35	561
Kratie	0	507
Kompong Chhanang	0	444
Stung Treng	0	0
Rattanakiri	0	0
Prey Veng	0	0
Phnom Penh	0	0
Mondolkiri	0	0
Kandal	0	0
Total: (Cambodia)	**90199**	**109775**

Source: Obtained from CMAC files

Map 3: Potential Mines Contamination in Cambodia (July 2001)

Chapter Three
Land Concessions

3.1. The concession system

It should be recalled that forest concessions have been given out to international and national companies for scientific logging of forests, agricultural concessions have been and are given out to companies for commercial farming and growing farm products for both international and national markets, and fishing concessions are given out to create marketable surplus for fish. All concession agreements are additionally meant to generate revenues for the state. The concession system in Cambodia, especially of fishing lots, goes back to the earlier part of the twentieth century.

3.2. Forest Concessions

The system of granting forest concessions is as follows:

a) The company applies directly to Council of Ministers (COM) or to MAFF;

b) MAFF consolidates all applications;

c) MAFF orders Department of Forestry (DOF) to examine the technical matters;

d) With reports from DOF, MAFF makes recommendations and forwards them to COM for decision;

e) If satisfied, COM makes an agreement with the company;

f) MAFF then issues a license to the company to use the forest;

g) The company is expected to produce a master plan with DOF/MAFF.

According to data obtained from MAFF pertaining to 1999, there were 30 companies to whom forest concessions were granted up to that date. It is widely believed that no fresh concessions have been offered since. These 30 companies and the size and location of the concessions granted to them are listed in Table 3.1. This table shows that the total land under forest concessions was 6,370,099 hectares. This figure falls short of the eight million hectares identified to be under concessions for 1998 in an Oxfam report (Williams 1999: Table 2)[1] by about 1.63 million hectares. The Oxfam study quotes the government's National Environment Action Plan (RGC 1999:5) to support its figures. However, this government document states that concessions cover "more than six million hectares." Concessions could be extended for a period of about 30 years. Individual contracts are not accessible, from which the period and other terms and conditions could have been determined.

[1] Also, it is not clear why this figure of eight million has been quoted in some of the donors' meetings.

In Table 3.1 the companies are categorised into three groups: concessions inventoried and exploited, concessions being inventoried but not yet in commercial activities, and concessions not yet inventoried. As per the concession regulations, only the first category of companies should be in commercial activities. This means that commercial exploitation, as in 1999, should not have extended to beyond 2.2 million hectares. Indeed, were these records to be believed, as of 1999 at least, the loggers' axes had yet not touched more than two-thirds of the contracted forests. These data are in deviation from the popularly held notion in the late 1990s, that if deforestation continues at this rate, there will not be any forest left in Cambodia by 2003. Next, this table shows that most large concessions are concentrated in the northeastern parts of the country, that is, the provinces of Rattanakiri, Mondolkiri, Kratie, Stung Treng and Preah Vihear, though they also exist in the western provinces of Koh Kong, Pursat and Kompong Speu. These are also the provinces that are densely wooded and have sparse populations. Individual concessions are generally large, exceeding 100,000 hectares.

The concessions of many companies have been cancelled and in some cases transfers to other companies have been effected, only for the concession to be withdrawn from the new company. The dynamics of concession transfers and cancellations have been fairly rapid in the last two years, as interim figures, not presented here, suggest. The total cancellations, as of 2001, were for about 2.16 million hectares of land – more than a third of the total concessions land – leaving about 4.12 million hectares under forest concession. Some of the concessions cancelled were large: ministry data (not reproduced here) show that the largest concession, now cancelled, was about 1.4 million hectares. Some concession contracts have been cancelled either due to violations in the terms of reference and/or non-utilisation of the resource. Such a situation is not healthy for the rural economy. It would be useful to obtain a final verification of data in Table 3.1 and set to rest the popularly held notions about the use or misuse of forests in the country. Also, the release of a list of companies holding concessions and their coverage to the public domain by the appropriate authorities on a periodic basis would avoid any unwarranted controversy in the future, as well as to maximise the returns from forests to the state and society.

Map 4: Forest and Land Cover 1996/97 Concessions

Table 3.1. Forest Concessions Granted

	Company	As in 1999 Area, (ha)	As in 2001* Area, (ha)	Location
I.	**The Concessions being Inventoried and Exploited**			
1	GAT International Co., Ltd	215,720	215,720	Koh Kong & Pursat
		149,780	149,780	Kompong Thom & Kratie
2	Colexim Enterprise	147,187	147,187	Kompong Thom
3	Casotim Co., Ltd	131,380	131,380	Kratie
4	Samling Cooperation, SDN. BHD.	467,484	467,484	Kratie, Kompong Cham & Mondolkiri
		298,598	298,598	Kompong Speu & Koh Kong
5	Mieng Ly Heng Investment Co., Ltd	198,500	198,500	Kompong Thom, Preah Vihear & Kompong Cham
6	Long Day Machinery Industry Co., Ltd	98,000		Kampot & Kompong Speu
7	Pheapimex Funchan Cambodia Co., Ltd	358,725	358,725	Kratie, Stung Treng, Preah Vihear & Kampot Thom
8	Lang Song International Co., Ltd	132,000		Preah Vihear
	Sub-Total	**2,197,374**	**1,967,374**	
II.	**The Concessions being Inventoried but not yet in Commercial Activities**			
9	Hero Taiwan Co.	60,150	60,150	Rattanakiri
10	Lang Song International Co., Ltd	119,300		Kompong Thom
11	King Wood Industry Pte., Ltd	301,200	301,200	Kratie, Stung Treng & Mondolkiri
12	Cambodia Chender Plywood MFG Co., Ltd	103,300	103,300	Preah Vihear
13	Som Rong Wood Industry Pte., Ltd	200,050	200,050	Siem Reap
14	Evenbright CIG Wood Co., Ltd	136,376	136,376	Kratie & Stung Treng
15	Super Wood IPEP Ltd	94,419	94,419	Pursat & Kompong Speu
16	Talam Resource SDN BHD	111,500		Kompong Speu & Koh Kong
17	Timas Resources Ltd	161,450	161,450	Kompong Cham, Kratie & Preah Vihear
18	Silverroad wood Product Ltd	10,000	10,000	Koh Kong
		215,460		Koh Kong & Pursat
	Sub-Total	**1,513,205**	**1,066,945**	
III.	**The Concessions not been Inventoried**			
19	Chung Shing Cambodia Co., Ltd	374,350		Kratie, Preah Vihear & Mondolkiri
20	Pacific Craft Co., Ltd	24,537		Stung Treng
21	Thai Boon Rong	119,700		Mondolkiri
		297,000		Kratie & Mondolkiri
22	Mekong Sawmitt Furniture and Particles Boards Enterprise Pty., Ltd	99,400		Siem Reap & Preah Vihear
23	Samling Cooperation, SDN. BHD.	218,059	218,059	Mondolkiri
24	YouRysaco Co.	214,000	214,000	Pursat & Battambang
25	TPP Cambodia Timber Products Pte., Ltd	395,900	395,900	Siem Reap, Preah Vihear & Pursat
26	Woot Tee Teanich Import Export Co., Ltd	63,050		Koh Kong
27	Chang Ling Lumber Co., Ltd	236,500		Stung Treng
28	North Eastern Forest Devt. Ltd	232,100		Rattanakiri & Stung Treng
29	Phearpionex Fuchan Cambodia Co., Ltd	350,000	350,000	Stung Treng & Rattanakiri
30	Cambodia Timber Product Pty., Ltd	34,924		Kampot
	Sub-Total	**2,659,520**	**1,177,959**	
	Grand-Total	**6,370,099**	**4,212,278**	

** Based on information provided by MAFF officials. Some remaining concessions have been reduced but no ready data are available.* Source: Dept. of Planning and Statistics, MAFF, 1999

3.3. Agricultural Concessions

There is no single procedure applied or practised in granting agricultural concessions. The procedure most often practised is as below:

a) The company contacts local authorities (commune, district and/or province) for the land;

b) The company then writes to MAFF attaching agreements from local authorities;

c) MAFF conducts a physical/feasibility study of the area proposed;

d) After conducting feasibility study MAFF writes to COM detailing the objectives of the company, and to seek "agreement in principle" from COM;

e) COM concurs with MAFF;

f) With agreement from COM in hand, MAFF again approaches COM to request for concession rights;

g) If COM approves, MAFF draws up a contract with the company. The company then has to pay a deposit to MAFF. The actual contract is based on another detailed study jointly carried out with MAFF technical staff. Any land occupied by the farmers or other dwellers or holders is to be excluded from the land before a final contract is signed;

h) Finally, the company makes a master plan to submit to MAFF for synchronisation with the contract.

Other procedures that have also been followed are that the company goes directly to COM, to reach an agreement in principle with the Prime Minister's office. COM sends the case to the Council for the Development of Cambodia (CDC). CDC then convenes a meeting with other concerned ministries to ensure that the land can be granted without problems. After clearance in this inter-ministerial meeting, CDC writes to COM for granting approval of the concession. Yet another procedure of granting concessions is when the company goes to CDC first, and then CDC sends the case to MAFF for technical clearance. In these two approaches, the local authorities are bypassed. It would appear that going through local authorities is time-consuming and expensive. Nonetheless, MAFF officials maintain that it is a more effective way. This routine bypassing of local authorities by companies is an irritant to local authorities as well as to village communities (So *et al*. 2001).

Table 3.2 shows that the total area under agricultural concessions as in 1999 was 662,496 hectares, given out to 46 companies. Again, the distribution of these concessions shows that they were located in forested areas rather than in the main rice belts. Almost all were in plantations or diversified perennial crops: only four were into rice production. Most of these concession lands are large, many are more than 10,000 hectares, a limit that the government would like to impose according to its officials interviewed in 2001. The largest concession, to a company called Pheapimex, was 315,000 hectares according to the data in Table 3.2. Agricultural concessions can extend up to 70 years.

Interviews with MAFF officials in July 2001 and the latest data released by them reveal that the number of agricultural concessions had reached 55 before falling to the current number of 39 (Table 3.3). Sixteen concessions were cancelled or were withdrawn some time during the last two years. The remaining 39 companies are holding a total area of 705,394 hectares. A few more companies are likely to lose their concessions or withdraw (two are in the process of withdrawing themselves). There is again some discrepancy between the latest figures (Table 3.3) and the 1999 data (Table 3.2); either there has been a major reorganisation of agricultural concessions, or there is problem with accuracy in the database. In any case, there is a need to conduct detailed surveys to ascertain the reality.

Agricultural concessions are held both by foreigners - mainly Chinese and Malaysian - and Cambodians.

Table 3.2: Agricultural concessions, 1999

No.	Name	Area, ha	Location	Crop
1	Pheapimex	315,000	Kompong Chhnang	Cashew
2	Talam Plantation Holding SDN BHD	36,700	Koh Kong	Rubber & Palm oil
3	Cambodia Haining Group	23,000	Kompong Speu	Potato
4	Angkor Industrial Crop Development	20,000	Kompong Speu	Sugarcane & Grazing
5	Mensarun Friendship & Rama Khmer	20,000	Rattanakiri	Palm oil
6	Unique International Commerce	20,000	Mondolkiri	Rubber & Coffee
7	Chiel Jadang	18,300	Kompong Speu	Sweet Potato
8	Un Borin Trading & Agr. Devt.	16,600	Kompong Speu	Potato
9	Cambodia Palm Oil	15,200	Koh Kong	Palm oil
10	M. Consolidated Plan	12,700	Kompong Speu	Cassava & Rice
11	Development of Industrial Crop	12,506	Kompong Speu	Cashew
12	Cambo Came	11,400	Kompong Thom	Rice
13	Mong Rithy	11,000	Sihanoukville	Palm oil
14	Maca Plantation	10,800	Kompong Speu	Agricultural Crops
15	Cambodia Eversky	10,000	Kompong Thom	Agricultural Crops
16	Shing Yue Commercial	10,000	Kampot	Rubber & Palm oil
17	Sokimex	9,900	Kompong Cham	Rubber
18	China National Coecld	8,000	Kompong Speu	Agro-industrial Crops
19	China Cambodia State Farm 999 Int.	7,500	Koh Kong	Grazing
20	Potato Powder Ltd.	7,400	Stung Treng	Cashew
21	Sin Thai Kampot	5,700	Kampot	Cashew & Durian
22	Cambodia Tapioca Ent.	5,100	Kampot	Palmoil
23	Bopha Angkorimex Trankong	5,000	Kompong Cham	Rubber
24	Henan Economic	4,200	Kompong Speu	Agricultural Crops
25	Asia Golden Dragon	4,000	Kompong Cham	Cassava
26	China Evergreen Cambodia Agr.	4,000	Kampot	Agro-industrial Crops
27	S.K. Chamreung Devt.	4,000	Rattanakiri	Rubber
28	Cambodia Shan Shoei	3,830	Koh Kong	Orchard
29	Yea Jan Trading Co.	3,800	Kampot	Cassava
30	Mieng Ly Heng	3,000	Kompong Cham	Rubber
31	Ratana Visal Devt.	3,000	ursat	Cashew
32	Wat Vanny	3,000	Kompong Thom	Rice
33	Agrostar	2,400	Kompong Cham	Cashew
34	Hur Hong Investment	2,040	Kompong Speu	Agricultural Crops
35	Nacorice	2,000	Battambang	Rice
36	Tay Seng Import-Export	2,000	Rattanakiri	Rubber
37	Chung Shing Cambodia	1,600	Koh Kong	Palm oil
38	Khem Len Imp. Exp.	1,600	Kampot	Palmoil
39	Sor Uth	1,550	Kompong Speu	Tee & Coffee
40	TTY	1,070	Kompong Cham	Rubber
41	Lim Kry	1,050	Takeo	Rice
42	Chung Thai Investment	550	Koh Kong	Cassava & Fruit
43	Family Agr. Devt. Community	500	Kompong Cham	Rubber
44	Heng Savath	500	Kompong Cham	Cashew
45	Ly Seng	500	Takeo	Cashew
46	Sour Kear	300	Pursat	Cashew
47	Ford Thai	200	Mondolkiri	Agriculture
Total		**662,496**		

Source: Department of Planning and Statistics, 1999

Table 3.3: Statistics and activities of companies invested concession land with MAFF (31/01/2001)

No	Name of companies	Location	Land size, ha	Type of crop	Date of contract	Remarks
1	Agrostar	Kompong Cham	2400	Cashew	09/01/95	Has been growing
2	Heng Sarath's Family Association	Kompong Cham	500	Cashew	23/01/92	Lost relationship
3	Sokimex Investment on rubber	Kompong Cham	9900	Rubber	27/05/98	Ready to determine concession land
4	TTY Company	Kompong Cham	1070	Rubber	02/05/00	Lost relationship
5	CAMBODA EVERSKY	Kompong Thom	10000	Agricultural crop	03/11/98	Provincial workgroup is taking statistics
6	Cam Chi International Agri. Dev.	Kompong Thom	26500	Cassava	03/03/00	Provincial workgroup is taking statistics
7	Leng Ho Hong Industrial and Processing Development	Battambang	8000	Sugar cane & potato	07/06/00	Provincial workgroup is taking statistics
8	RATANA VISAL Dev. Co LTD	Pursat	3000	Cashew & caster oil plant	15/10/99	Lost relationship
9	PHEAPIMEX Co; LTD	Pursat & Kompong Chhnang	315028	Tree cultivation & Paper Factory	08/01/00	Ministry is intervening with provincial level
10	Mong Rithy Investment CAMBODIA OIL PAMT Co LTD	Sihanoukville	11000	Palm oil	09/01/95	Has been growing
11	Mong Rithy Investment Cambodia Cassava	Sihanoukville	1800	Cassava	18/03/00	Lost relationship
12	China Cambodia State Farm 999 International	Koh Kong	7500	Agricultural crop & livestock	06/10/98	Ministry intervenes to province
13	TALAM Plantation Holding SDN BHD	Koh Kong	36700	Rubber & palm oil	05/10/98	Provincial workgroup is taking statistics
14	The Green Rich Co; LTD	Koh Kong	60200	Palm oil & acacia	25/11/98	Requested to postpone contract; pay insurance
15	HENAN (Cambodia) Economic & Trade Development Zone	Kompong Speu	4100	Agricultural crop & livestock	29/07/99	Provincial workgroup is taking statistics
16	Cambodia Haining Group Co, Ltd	Kompong Speu	23000	Cassava & palm oil	23/07/99	Intervened to MLMUPC
17	Corporation ស៊ី ជេ Cambodia Ltd	Kompong Speu	3000	Cassava	15/11/99	
18	Produce Cassava Powder Ltd	Stung Treng	7400	Tea & cashew	13/11/99	Ministry is studying company's main plan
19	Meng Sarun Fellowship and RAMA Khmer	Rattanakiri	20000	Palm oil	21/12/99	Lost relationship
20	CHINA NATIONAL. COECLD Co; LTD	Kompong Speu	8000	Agro-industrial crop	26/09/00	Ready to determine concession land
21	KIMSVILLE CORP	Kompong Speu	3200	Cassava	24/10/00	Determine concession land, is taking statistics
22	Keim Lein Import Export	Kampot	16400	Palm oil	26/10/00	Lost relationship
23	FORD THAI	Mondolkiri	200	Agriculture	Has not contracted yet	Lost relationship
24	Shing Yui Commercial	Kampot	10000	Rubber & palm oil	Has not contracted yet	Lost relationship

25	China Evergret Cambodia Agriculture Development	Kampot	4000	Rubber & palm oil	Has not contracted yet	Lost relationship
26	ហ្គ្រា អង្គ្រីមុិចត្រង់ កុង	Kompong Cham	5000	Rubber	Has not contracted yet	Lost relationship
27	Cambo Victor & Investing Developing	Kompong Speu	28500	Agricultural crop	Has not contracted yet	Has provisional right & is protesting about location overlapped
28	Ok Khun Industrial Crop Development	Kompong Speu	12506	Cashew	Has not contracted yet	Is requesting signature on contract
29	Hong Hourt Investment	Kompong Speu	2040	Agricultural crop	Has not contracted yet	Lost relationship
30	Unborin Trade Agriculture Development	Kompong Speu	16600	Potato	Has not contracted yet	Lost relationship
31	Tai Sang Import Export	Rattanakiri	2000	Rubber	Has not contracted yet	Lost relationship
32	Mean Ly Heng Corporation	Kompong Cham	3000	Rubber	Has not contracted yet	Had met to be readied for rechecking location
33	Lim Kris Agricultural Development	Takeo	1050	Rice growing	Has not contracted yet	Had met to be readied for rechecking location
34	Sour Kea Co, LTD	Pursat	300	Cashew	Has not contracted yet	
35	Cambodia Tapioca Enter	Kampot	5100	Cassava	Has not contracted yet	Intervenes to committees dealing with land problems at provincial and municipal levels
36	Sin Thai Kampot Co; Ltd	Kampot	5700	Cashew & durian	Has not contracted yet	Lost relationship
37	Chung Shing Cambodia	Koh Kong	16000	Palm oil growing	Has not contracted yet	Lost relationship
38	M. Consolidated Plantation	Kompong Speu	12700	[Suntan], potato & rice	Has not contracted yet	Request for giving right
39	NAACO Rice	Battambang	2000	Rice growing	Has not contracted yet	Lost relationship
40	Angkor Industrial Crop Development	Kompong Speu	20000	Sugar cane & animal food	Contract cancelled	Announcement nº 406 ប្រក.កសក.ធ.ជក on 15/9/98
41	Sor Out	Kompong Speu	1550	Coffee & tea	Contract cancelled	
42	Ly Seng Import Export	Takeo	500	Cashew	Agreement cancelled	Cite the letter nº 442 សជណ.កស on 20/3/00
43	Yean Jan Trading Co; Ltd Cambodia Tapioca Corporation Limited	Kampot	3800	Cassava	Agreement cancelled	Cite the letter nº 442 សជណ.កស on 20/3/00
44	Chel Jadang (C & J Cambodia)	Kompong Speu	18300	Cassava	Agreement cancelled	Cite the letter nº 442 សជណ.កស on 20/3/00
45	S K Prosperous Development	Rattanakiri	4000	Rubber	Agreement cancelled	Cite the letter nº 442 សជណ.កស on 20/3/00
46	Yunex International trade Unity	Mondolkiri	20000	Rubber & coffee	Agreement cancelled	Cite the letter nº 442 សជណ.កស on 20/3/00
47	Asia Golden Dragon	Kompong Cham	4000	Rubber	Agreement cancelled	Announcement nº 333 ប្រក.កសក.ធ.ជក on 31/5/00
48	គ.ឈ ហ្សេស៊ុិន Enterprise	Kompong Cham	6250	Cassava	Agreement cancelled	Announcement nº 333 ប្រក.កសក.ធ.ជក on 31/5/00
49	Cambodia Palm Oil	Koh Kong	15200	Palm oil	Agreement cancelled	Announcement nº 333 ប្រក.កសក.ធ.ជក on 31/5/00
50	Agricultural Development Association	Kompong Cham	500	Rubber	Agreement cancelled	Cite the letter nº 1381 សជណ.សរ on 14/8/00
51	Vat Vanny	Kompong Thom	3000	Rice growing	Agreement cancelled	Cite the letter nº 1381 សជណ.សរ on 14/8/00

52	Cambo Can Co; LTD	Kompong Thom	11400	Floating rice	Agreement cancelled	Cite the letter nº 1381 ស.ជ.ណ.ស.រ on 14/8/00
53	Maca Plantation	Kompong Speu	10800	Rubber	Agreement cancelled	Cite the letter nº 1381 ស.ជ.ណ.ស.រ on 14/8/00
54	Chung Thai Investment	Koh Kong	550	Cassava & fruit tree	Agreement cancelled	Cite the letter nº 1381 ស.ជ.ណ.ស.រ on 14/8/00
55	Cambodia Shan Shoei	Koh Kong	3830	Fruit tree & livestock	Agreement cancelled	Cite the letter nº 1381 ស.ជ.ណ.ស.រ on 14/8/00
	Total for the whole country		829074			

Note: This table is a literal translation from Khmer to English, without formal editing. Source: MAFF

3.4. Role of the military in giving land concessions

In 1994, the government extended rights to the military to control parts of the forest and other lands for security reasons. Consequently the military began to control considerable areas of land. After the restoration of peace in 1997, the military continued to hold on to an unspecified area of land, part of which has been given out for concessions. The military has its own maps for land concessions, which may be different from the maps that MAFF has. The military often bypasses MAFF in the process of granting agricultural concessions and hence MAFF does not report on many of the contracts granted by the military. However, the military does seek concurrence from the Prime Minister's office. In some cases though, the military does consult both the local authorities and MAFF. The military has not granted and does not grant forest concessions, according to officials in MAFF.

3.5. Reasons why some companies do not implement contracts

There are a number of reasons why companies are not able to implement contracts. The single main reason is that many parties claim possession or ownership of the land under consideration. A typical story is that after a company carries out its own pre-feasibility study and obtains approval from COM and MAFF, other claimants erect new fences on the land. While it is acknowledged that some pre-feasibility studies done by the companies are not conducted properly, in others the companies are unaware of the local land control systems. In a few cases, locally influential people also indulge into land grabbing. The problem is worsened when such people are able to obtain papers for these lands. In a few cases, companies withdraw because they have over-estimated the revenues from the venture. Instances of companies holding on to land for speculation rather than using it productively have also been reported.

3.6. Fishing concessions

Cambodia has large fresh water resources — the inundated area is estimated to be about 10 percent of the total area, for all or part of the time.[2] In this regard the country is among the best endowed with fresh water resources in the Asian region (World Bank 2001). The ecology of water in the Tonle Sap region, which is the main freshwater fish catching area, is unique. The river Sap, which flows from a great lake, joins the larger Mekong in Phnom Penh to flow further south into Mekong and Bassac. When the Mekong is in spate in the summer and monsoon months, it pushes the waters of the Sap backwards; hence the Sap reverses its direction and fills up the lake. In the lean seasons the Sap again changes its direction to flow from the filled up lake to drain into the Mekong. This has created some of the most ideal ecological conditions for freshwater biological activity — fish as well as crops and vegetation — to thrive. Consequently, despite its small geographic size, Cambodia is ranked rather high in the production of freshwater fish in the world. However, in recent years, Cambodia's water systems are becoming affected by excessive siltation and deforestation and by uncertain water

[2] Table 2.1 shows a figure of about only 0.5 million hectares covered by water. This may be the permanently covered area only.

availability. It is therefore difficult to obtain the exact size of the inundated area in some regions.

Fishing contracts are granted for a period of between one and five years. There are three sizes of fishing lots: large, medium and small. It is estimated that a total of 1,000,000 hectares of water surface is given out under fishing contracts each year (government records). The number of fishing lots, at 168, is large. A frequency distribution of the fishing concessions by their size can be seen in Table 3.4 and a map of their spread across the country can be seen in Map 5. This table shows that individual contracts are fairly small in size compared to areas mentioned in the forest and agriculture contracts. It is also evident that both Tonle Sap and Mekong bank regions are given out for fish exploitation.[3]

The Department of Fisheries under MAFF regulates fishing and management of all inundated areas. Since 1993, a Royal Decree protects all the inland water bodies. There are three categories of operators: large, industrial scale operators who are expected to operate within designated fish concession areas (two-year permits), medium scale operators who operate in open access as well as demarcated areas under license, and small scale (family) operators who operate in open access areas only.

In recent years the riparian communities have faced shrinking access to their fishing areas, compared to the enlarged spans of the bigger operators. Additionally, due to population pressure, there is spread of crop agriculture at the expense of forestlands around the Tonle Sap and other water-catchment areas. The ADB (2001) believes that runoffs from rice fields (which may include silt, fertilisers and pesticides) can have serious negative effects on Tonle Sap's fishing potential. Dredging of the river or parts of the lake is considered unfeasible.

In 2000, the government announced cancellation of a number of fishing lots, effective from June 2001. This would increase open access areas and is a welcome step in the direction of strengthening household level food security in rural areas.

[3] The main river areas are not given out on concession. Rivulets, lakes and other water bodies are.

Map 5: Fishing lots and 10 km buffer

Table 3.4: Size and number of fishing lots, 2000

Size of fishing lots	Number of fishing lots	Percentage of lots per total lot area
(Km²)		
<10	39	23
10 - <20	20	12
20 - <40	33	20
40 - <60	18	11
60 - <80	19	11
80 - <100	8	5
100 - <150	17	10
>150	14	8
Total area = 9,634 km²	**Total = 168**	**100**

Source: Department of Fisheries, 2001

3.7. A word about who controls land

The discussion so far suggests that 4.12 million hectares of land are under forest concessions and 3.20 million are under reserve forests. It follows, after comparing these data with those in Table 2.1, that forests under government ownership other than those under concessions and protection stand at 3.32 million hectares. Fishing lots cover about one million hectares, cultivated areas with farmers are 2.71 million hectares and cultivated areas with concessionaires are about 0.83 million hectares. Urban areas, infrastructure, waterways and so forth cover about 1 million hectares, and landmine-contaminated areas account for about 0.1 million hectares. This means that scrub lands, other non-wooded lands, undergrowth and similar unused areas not yet declared to be under any specific land use or formal ownership or control other than that of the government, total about 1.73 million hectares, based on data analysed so far. This land can be used for providing agricultural plots to the landless, establishing industrial or urban centres or expanding commercial farming, *without disturbing the existing land use*. However, an important caveat is that part of this land is probably already under concessions given out by the military and such land will have to be deducted from this 1.73 million hectares for any calculation on redistribution of surplus land.

Chapter Four

Administration of Land—Responsibilities and Titles Provided

4.1. Background

Before discussing the administration of land and the titling system in detail, a point about the land distribution of 1989 requires mention. Land distribution in the late 1980s was partly a *de facto* recognition of lands that people already controlled under the *krom samaki* system, though fresh lands were also distributed. The country had just emerged from a decade and a half of different forms of collective and co-operative agriculture, and the concept of private property was not uniformly recognised or practised, by either the populace or the administration. Thus, while lands were distributed and private ownership of plots recognised, no clear demarcation of each plot was officially made. The authorities were plainly not equipped for this,[1] and farmers were not concerned, because all knew their neighbours and boundaries. Also, most farmers and village communities are not very literate and were not exposed to legal practices. Hence, they preferred to control their lands through traditional systems and did not care for official papers.

The system of land registration and titling in Cambodia is somewhat different from that found in many other countries. For example, the same authorities are in charge of, and do registrations for, agricultural and residential land in both rural and urban areas. During 1989–94, the Department of Cadastre was located within the Ministry of Agriculture. The provincial and district offices of the Department of Cadastre carried out the work and the provincial governor was the final authority for the issue of certificates, both for agricultural and residential lands. During 1995–98, the Department of Cadastre was shifted to the Council of Ministers. The final authority also shifted from the provincial governor to the director of the Department of Cadastre. In 1998, the Department of Cadastre (now referred as General Department of Cadastre and Geography) was again relocated, this time to the newly established Ministry of Land Management, Urban Planning and Construction (MLMUPC). One of the main tasks of this ministry is to undertake a comprehensive survey, mapping and registration of all land in the country.

4.2. Sporadic registration

The formal mechanism of land titling and registration *under the sporadic registration system* according to the current policy is as follows:

a) An applicant has to make application to his/her commune chief in a standard form. Completed application forms are certified by the commune chief and forwarded to Office of Land Management, Urban Planning, Construction and Land (OLMUPCL) at the district. The owner receives a receipt for his/her application.

[1] The Central Cadastral office confirmed this statement

b) A sub-committee is formed consisting of the commune chief as its chair, the village chief (of the applicant's village), one or two officials of the staff of the OLMUPCL (district cadastral office) and one older person from the community whose knowledge and authority in the village is respected.

c) The sub-committee, in consultation with the applicant, fixes a date for site inspection. Owners of neighbouring lands to the applicant's land parcel are also called to ensure correct and mutually acceptable boundary demarcation during the measurement process.

d) Prior to the visit, an announcement is made by the district chief about the intent of the applicant to title his/her land. A notice period of 10 to 15 days is allowed for any party to raise objections or contest the claim. A notice to this effect is displayed on or near the site (for example, in the village concerned, or at the relevant commune office or district office).

e) During the visit, the applicant must erect signposts at appropriate places in order to demarcate his/her land and also identify the shape of the land. Neighbours can raise objections, if they have any, at this stage. The land survey is completed upon satisfactory completion of the boundary demarcation. A standard form is then filled in and duly authenticated by neighbours and others on the sub-committee. The background of the applicant, his/her family details and the mode of land acquisition (for example, through inheritance or purchase), are noted. Any plantations or construction on the land are also recorded. In the event that one or more of the neighbours is a state authority, their representative(s) are called for the boundary inspection.

f) In the event of a dispute concerning the applicant's claim, the processing of the claim is halted until the dispute is resolved. Otherwise, the form is signed by the commune chief in his/her capacity of chairperson, and forwarded to the district OLMUPCL Cadastral Office with a recommendation to issue a certificate. The relevant documents are then forwarded to the district chief.

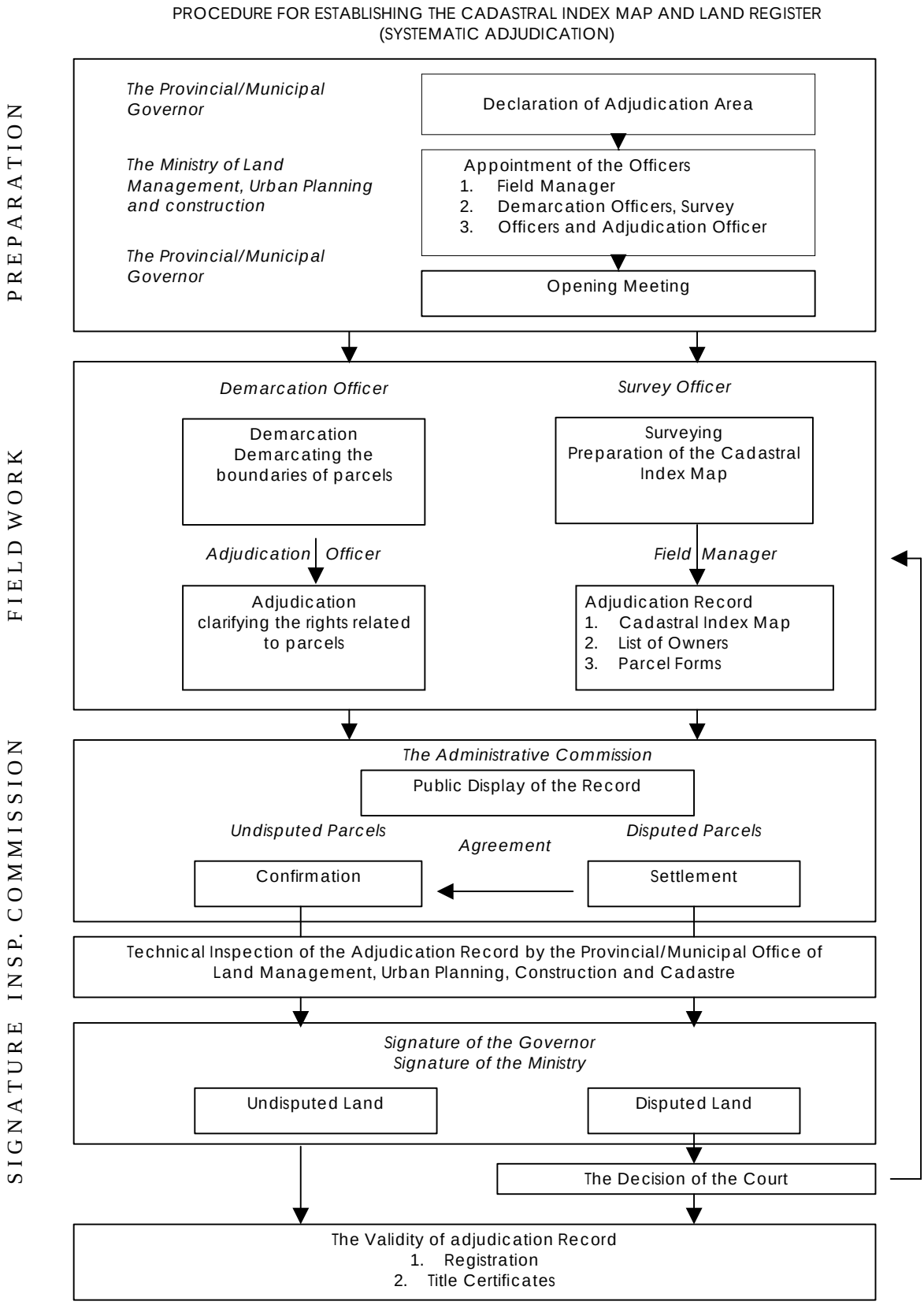
g) In the case of agricultural land, the district chief can approve issue of the certificate if s/he is satisfied. S/he can call for clearance from other concerned parties if s/he deems it necessary, for example, from forestry or fisheries departments. In the case of residential land, the chief of the district cadastral office recommends the matter to the district chief for verification, who in turn refers the case to Department of Land Management, Urban Planning, Construction and Cadastre (DLMUPCC) at the provincial level. This department then submits the papers to the provincial governor for final approval for issuing a certificate.

h) The process, however, does not end here. In the case of agricultural land, the district OLMUPCL routinely refers the matter to the provincial DLMUPCC, which in turn refers the case to the central authorities (i.e., the Central Cadastral Office, MLMUPC) to verify the legalities and that procedures have been properly followed. In the case of residential lands, the provincial authorities refer the case to the same central authorities, again for checking on procedures and legalities. In both cases, certificates are issued after the Central Cadastral Office has verified the procedures and legalities and entered the case details in the immovable property register. A file is created at the Central Cadastral Office for each land parcel for which a certificate is issued.

4.3. Systematic registration

In the case of systematic registration, a system that has been put into practice recently with technical assistance from the German Agency for Technical Co-operation and the Finnish Cooperation Agency, the procedure relies on aerial photographs for drawing maps. Thus far it has been implemented in parts of Sihanoukville, Takeo, Kandal, Kampot and Kompong Thom provinces. The procedure, presented in a diagrammatic form, is shown in Figure 1:

Figure 1: Procedure for establishing the cadastral index map and land register (systematic adjudication)



The basic differences between systematic and sporadic registration systems are that the former does not rely only on physical measurement using measuring tapes; detailed maps drawn from aerial photographs are used extensively. Also, the process of consultation appears to be more broad-based and decentralised in the case of systematic registration. In terms of cost, as well, systematic registration is cheaper on a per title basis (Central Cadastral Office, personal communication).

The number of titles issued so far is given in Table 4.1. It is evident that there is a huge skew in the distribution of titles across provinces.

Table 4.1: Progress in Land Registration: (From 1989 to December 31, 2000)

Province / Municipalities	A. Certificate of Possession (1989-95)	B. Certificate of Possession (1995 - 2000-end)	Total A &B
Kandal	109,749	9,675	119,424
Kampot	54,462	1,668	56,130
Takeo	43,336	2,770	46,106
Svay Rieng	38,530	1,808	40,338
Prey Veng	36,884	2,061	38,945
Siem Reap	28,098	5,041	33,139
Kompong Chhnang	25,981	3,291	29,272
Kompong Speu	22,469	4,204	26,673
Battambang	19,432	6,683	26,115
Kompong Cham	16,618	6,505	23,123
Sihanoukville	11,659	5,779	17,438
Banteay Meanchey	13,641	3,745	17,386
Pursat	10,857	4,140	14,997
Koh Kong	6,490	2,756	9,246
Kompong Thom	4,973	2,152	7,125
Phnom Penh	1,028	4,621	5,649
Kratie	3,064	1,261	4,325
Rattanakiri	436	1,056	1,492
Kep	570	783	1,353
Stung Treng	00	128	128
Preah Vihear	00	104	104
Oddar Meanchey	00	95	95
Pailin	00	31	31
Mondolkiri	00	00	00
Total	448,277	70,357	518,258

Note: Data relate to both, sporadic and systematic registration. Source: MLMUPC

There are a disproportionately large number of titles issued in Kandal, Takeo, Kampot, a few other more populated provinces in the southern parts of the country, and Siem Reap. In surprising contrast, no land titles were issued in Mondolkiri. The table also shows that there were many more certificates issued in the period 1989–95 than in the period 1995-2000. While no official reason is available for this, it seems likely that the easy cases were quickly finished in the earlier period. Increasing conflict after 1992–93, difficult terrain and lack of equipment and personnel have been among the factors inhibiting land title issue. Lastly, it needs to be mentioned that the total number of titles made, both by sporadic and systematic processes - a little over half a million - contrasts with about 4.5 million applications made. In short, about 12 percent of the requests have been processed and acceded to.

Chapter Five

A Description of Data Sets Relating to Land Holdings and Tenure[1]

It must be mentioned at this stage that the data sets described below have originated from different sources, they do not necessarily cover the same populations, and also that the surveys were launched with varied purposes. Hence it is difficult to compare results across the different surveys. Loose comparability is of course possible across all the samples. There is some comparability between the three SES surveys and close comparability between Baseline-98 and Follow-up-00. But PET-98, MRC-95–96 and LADIT-00 are not comparable to any other survey. The analysis carried out below is with this explicit understanding. Such an exercise in another setting would have required detailed scrutiny of agricultural census reports, land records and urban land surveys, in addition to other specialised sample surveys that may have been carried out but, in Cambodia, such data are yet to emerge. A brief description of each of the eight data sets is described below.

5.1. Household socio-economic survey in fishing communities, Mekong River Commission, 1995–96 (MRC-95–96)

A socio-economic household survey of fishing communities in Cambodia was conducted by the Mekong River Commission (MRC) under the project Management of Freshwater Capture Fisheries of Cambodia. The primary purpose of the survey was to assess the socio-economic conditions of households living in fishing-dependent communes in order to provide necessary information and an appropriate perspective for the sustainable management of freshwater capture fisheries in Cambodia.

The study identified eight provinces (Siem Reap, Battambang, Pursat, Kompong Chhnang, Kandal, Phnom Penh, Kompong Cham and Kompong Thom) with a population of about 4.19 million people in freshwater fisheries communities. From those provinces, a total of 5,117 sample households covering 83 sample communes in 51 fishing districts were randomly selected to represent 328 fishing-dependent communes. The selected communes also covered the two major water systems involved in freshwater capture fisheries: the Great Lake and Tonle Sap River system, and the Mekong-Bassac Rivers and adjoining flood-lands system.

5.2. Cambodia socio-economic survey of 1996 (SES-96)

SES-96 was essentially a demographic and labour survey carried out by the National Institute of Statistics (NIS). It adopted a two-stage stratified random sampling design with villages as the primary sampling units and households as secondary units. A sample of 9,000 households was drawn from 750 sample villages. While the sample was to cover the whole country, two

[1] Data descriptions for four out of the eight data sets are taken *verbatim* from Sik (2000).

provinces were dropped and several villages in the provinces covered were left out for security reasons. There is little substantial information collected on land in this survey. Hence its mention in this text is scant, and mainly in footnotes.

5.3. Cambodia socio-economic survey of 1997 (SES-97)

SES-97, the first large-scale multi-objective household survey in the country, was conducted by the NIS between May and June 1997. The principal objective of the survey was to collect data needed for the measurement of living standards and for monitoring and analysis of poverty. The survey was based on a two-stage stratified random sampling design, with villages as primary sampling units, and households as secondary sampling units. The truncated frame used for the survey covered 100 percent of villages in Phnom Penh, 91.2 percent of villages in other urban centres and 86.3 percent of villages in rural areas. For security reasons, however, two provinces and a number of communes in the other 15 provinces were excluded from the survey frame. The proportion of households excluded was low, amounting only to 4.8 percent of the households in "other urban areas" and 1.6 percent of the households in rural areas.

Based on the above criteria, 6010 households were selected for interview. These were distributed as follows:

Phnom Penh: ..... 120 sample villages and 1,200 sample households

Other urban centres: ..... 100 sample villages and 1,000 sample households

Rural areas: ..... 254 sample villages and 3,810 sample households

Total: ..... 474 sample villages and 6,010 sample households

This being a representative sample, it is possible to generate parameters from it for the whole country, using appropriate multipliers.

5.4. Cambodian baseline survey of community action for social development (CASD) project and World Food Programme (WFP) target areas, 1998 (Baseline-98)

The Joint UNICEF-World Food Programme Baseline Survey was conducted by WFP between May and June 1998. The main purpose of the survey was to provide a comprehensive set of information for use in the development, targeting and evaluation of two of their programmes: (1) the Community Action for Social Development (CASD) programme for health and nutritional status, and (2) the WFP programme on food security and vulnerability. The survey focused on some provinces in which selected villages had a CASD or a WFP project. The survey limited the target sample to those who had at least one child less than five years of age.

The survey design was based on a multi-stage random sampling procedure, with the village as the sampling unit. A random sample of approximately 50 villages was selected from the six CASD-UNICEF provinces. In addition, 13 villages of CASD-PFD were randomly selected in Kratie and Stung Treng provinces. Another sample of 62 villages was drawn from five WFP food economy zones, based on the national distribution of villages by zone. A total of 125 villages were selected for the survey.

In these sampled villages, households with children under five years of age were randomly selected as the target group. The number of households selected depended on village size: in some cases there were as many as 300 eligible households while in others there were as few as 50. The survey limited the number of families to be interviewed to eight if the village had 80 households, 10 if the village had 80-120 households, and 12 if the village had more than 120 households. A total of 1,230 households were selected for interview.

5.5. Protracted emergency target survey of 1998 (PET-98)

The Protracted Emergency Target (PET) Survey was conducted by WFP in December 1998. The main objective of this survey was to provide baseline information on social conditions and on the nutritional status of returnees and internally displaced persons (IDP)[2] against which programme impacts could be measured in the year 2000. Like the Baseline-98 Survey, the PET-98 Survey also targeted parts of selected provinces in which the surveyed villages were randomly selected from PET communes. The targeted households were those that had at least one child less than five years of age and with the mother present.

Based on regional grouping, homogeneity of social conditions and IDP origin, the sample was stratified into four zones and a two-stage random-sampling methodology was used to select samples. In the first stage, five communes from each PET zone were randomly selected. In the second stage, two villages per commune, which were eligible according to WFP criteria, were selected and non-PET villages were eliminated. Then the PET villages were randomly selected for interview by using a random number table. However, communes and villages with unacceptable levels of risk from landmine hazards, such as landmines on the main road into the commune, were eliminated from the sample.

Within these sampled villages, 26 households were selected from each village in order to draw up a total sample of 1,040 households. The households that fell within PET criteria, with at least one child under five years of age and the mother of that child in the house, were randomly chosen by interval selection. In the very few cases, where villages were too small to provide enough mothers and children to reach the target of 26 households, a third village was randomly selected. The remaining households were selected from these and included in the survey process.

5.6. Cambodia socio-economic survey 1999 (SES-99)[3]

The SES-99 followed a two-stage stratified sample design with villages as the first stage units and households as the second stage units. A truncated frame, which excluded 4.5 percent of the villages, was used because of the difficulty of conducting fieldwork due to security reasons in the excluded villages. SES-99 covered 6,000 households distributed in 600 villages in the country. The survey was conducted in two rounds to capture seasonal changes in the characteristics studied. The sample design provided for estimates to be prepared for both urban and rural sectors and the city of Phnom Penh, as well as for the four ecological zones of the Plain, Tonle Sap, Coastal and Plateau and Mountain regions.

Sample layout

Phnom Penh: ..... 120 sample villages and 1,200 sample households

Other urban: ..... 172 sample villages and 1,720 sample households

Rural: ..... 308 sample villages and 3,080 sample households

Data were collected through visits to sampled households where several members of the household were interviewed by the investigators. Fieldwork for Round 1 was conducted between January and March 1999 and for Round 2 between June and September 1999. The survey, it is claimed by the authorities, has produced adequate comprehensive and complete data on income and expenditure. This is a representative sample; hence it is possible to make calculations for the whole population by using appropriate multipliers.

Like in its predecessor — the SES-97 — the sections on land are limited, though there is a major departure in the questionnaire on questions related to agricultural land. In 1999,

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[2] WFP-Cambodia defined internally displaced persons (IDP) as "those persons who have been displaced from their normal place of living by fighting in the period since 1989" (Helmers and Kenefick 1999:12).

[3] This information, taken from RGC (2000), clearly says that the primary aim of the survey was to obtain estimates of expenditure and income. Data on land are collected only by way of additional information.

separate information sheets were provided for residential and agricultural lands. The blank questionnaire sheets pertaining to land for SES-99 can be seen in the Appendix to this report.[4]

5.7. Follow-up survey, 2000 (Follow-up-00)

The survey instrument used in the Follow-up-00 Survey was the same that was used in Baseline-98 mentioned above. Its survey design was exactly the same as that of the Baseline-98, and in this regard this is the second data set after SES that permits a two-point comparison. This survey included 1,298 households from 124 villages – 59 from WFP communes, 52 from CASD communes and 13 from Kratie and Stung Treng provinces. After cleaning the data, there are 1164 usable observations.

5.8. The LADIT Survey (LADIT-00)[5]

This survey was conducted under the aegis of Oxfam in 183 villages in 19 provinces through 1999-2000. An initial sample of 146 villages (about one percent of villages in Cambodia) was researched during the period September 1999 to April 2000. The sample was neither purposive nor random. An attempt was made to cover as many of the lowland rural provinces as possible, but the selection of villages was wholly dependent on where Oxfam's research partners were working. During July 2000, rural development officials from Ministry of Rural Development and its provincial departments were trained into LADIT research. They then extended the research to another 37 villages in 18 provinces.

LADIT, meaning Landlessness and Development Information Tool, is a research process developed by Oxfam-GB in collaboration with Cambodian NGOs. It aimed at evolving an understanding of the causes of landlessness and about the effectiveness of development work to the poor. The LADIT research was designed to facilitate dialogue between researchers and villagers. There is a caution stated: that the tool is designed for lowland rural Cambodia, and it is not effective in urban areas as it focuses on agricultural land and it is not effective for upland areas where complex patterns of tenure and access apply.

"Each LADIT provides information on the extent and cause of landlessness and the impact of development activities on landlessness in one village" (Biddulph 2000). Researchers collected data using the following methods:

- An interview with the village chief;
- House to house survey of all landless families in the village, which yielded information about when and why they became landless; and
- A LADIT discussion group (12 villagers: six men, six women - four old people, four leaders, and four landless families).

An overview of what these data sets mean for an analysis of land can be seen from Table 5.1. This table shows that not all data sets permit a full study of land. The SES-99, SES-97 and PET-98 appear to the most comprehensive in the coverage of items. SES surveys have the added advantage of being representative of the country.

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[4] Out of the eight surveys, questions pertaining to land from the questionnaires for SES-96, SES-99 and LADIT-00 are reproduced in the Appendix. For Follow-up-00, the questionnaire was the same as that for Baseline-98. Extracts from questionnaires for the other four surveys can be seen in Sik (2000).

[5] Details presented here are obtained from Biddulph (2000).

Table 5.1: Overview of data availability on land from different data sets

Item	SES-97	SES-99	MRC-95–96	Baseline-98	Follow-up-00	PET-98	LADIT-00	SES-96
# Parcels		+						
# Owners	+	+						+
Type of owner	+	+	+	+	+	+		+
Acquisition						+		
Plot size	+	+	+	+	+	+		
Ownership claim	+	+				+		
Distribution	+	+	+	+	+	+		+
Landlessness	+	+	+	+	+	+	+	
Tenancy	+	+	+	+		+		
Price	+	+						

Chapter Six

Key Results on Land Holding Obtained from the Field Surveys[1]

6.1. Numbers and average size of agricultural and residential land

The total number of farmland parcels[2] in the country was 2,877,076 in 1999 according to SES-99, the most comprehensive survey in terms of geographical coverage. The average area of a parcel was enumerated at 0.8996 hectares. Data on parcels has not been collected in any of the other surveys, including SES-97, hence it is difficult to say whether or not, and to what extent, land fragmentation or atomisation has occurred in recent years. This average size in absolute terms is small given the extant land-labour ratio in the country (Godfrey *et al.* 2001). A standard deviation of 1.10 and a corresponding coefficient of variation of about 81 percent,[3] both imply that the size dispersion of parcels is very high.

The average size of agricultural land parcels calculated for different provinces is shown in Table 6.1 (Column 6). The average plot size is greater than one hectare in 13 out of 24 provinces and urban centres. These provinces (and urban centres) are Banteay Meanchey, Battambang, Kratie, Mondolkiri, Preah Vihear, Prey Veng, Rattanakiri, Siem Reap, Sihanoukville, Stung Treng, Takeo, Oddar Meanchey, and Pailin. The average plot size is smaller than one hectare elsewhere. There is some inverse association of population density (population per hectare) with the average size of land, but at best it is weak. Some exceptions are: Mondolkiri, which has a very small population and large area but does not have the largest agricultural plots, and some of the lower Mekong provinces where the reverse is found to be true. Also, the coefficient of variation, as in the case of the aggregate, is fairly large in most provinces as well. This means that there are wide differences between the sizes of parcels, both at the national level as well at the provincial levels. However, care should be exercised in interpreting data dis-aggregated at the provincial level since the samples are so drawn that they are *representative* only at the national level.

The total number of households according to SES-99 was 2,093,152, of which urban households were 310,802 and rural households were 1,782,350.[4] A province-specific breakdown can be seen in Table 6.2. Considered in the context of the previous paragraph, there are many more parcels than the number of households. Since at least 25 percent of the labour force is engaged in non-agricultural activities, *a priori* the ratio of households to parcels is not unfavourable. This aspect is discussed in more detail later.

According to SES-99, the total number of residential plots, that includes "owned with title and occupied," and "ownership unsettled/held for free," adds up to 2,029,160, which is about 97 percent of the total households enumerated above. Thus it appears that about three percent of the households share their abode with others or are homeless. A province-specific

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1 This chapter is an extended version of CDRI's earlier work on some of these data sets. See Sik (2000).

2 A parcel of land is a contiguous piece of land under a single ownership.

3 A coefficient of variation is calculated by dividing the standard deviation by the mean and multiplying the fraction by 100. The central tendency is considered to be weak if the coefficient of variation is greater than 10-15 percent.

4 The Population Census counted 2,188,663 households.

breakdown of the number of residential and industrial/commercial holdings can again be seen in Table 6.2. In this sample, of the total number of plots identified by the respondents as non-agricultural, about 90 percent fall under the category "owned with title and occupied;" the rest are under the category "ownership unsettled/held for free." It is inferred that encroachments would fall into the latter category. Over 98 percent of all plots recognised by the respondents as "owned with title and occupied" are residential; it is implied that industrial and commercial plots hardly exist in the country. In the category of "ownership status unsettled or are held for free," over 95 percent are used *for residence*. In other words, residence occupies most non-agricultural plots. Of all the plots used for residence, about 90 percent are under "owned and occupied" while the rest have their ownership status "unsettled or are held for free." Leasing is rarely reported: the total leased plots are less than one percent of the total number of plots.

Table 6.1. Average land per household and parcel size, by province (in hectares)

Province	MRC-95–96 (LH)	SES-97 (rural) (LH)	SES-99 (rural) (LH)	SESC-99 (LH)	SES-99 (Parcels)	Baseline-00 (LH)	Follow-up-00 (LH)
Banteay Meanchey		2.05	1.81	1.82	1.64		1.63
Battambang	1.76	1.15	1.81	1.64	1.33	1.32	1.38
Kompong Cham	0.51	0.63	1.51	1.47	0.79	0.91	0.96
Kompong Chhnang	0.81	0.43	1.10	1.05	0.64	0.44	1.10
Kompong Speu		0.91	0.66	0.64	0.56	0.71	0.80
Kompong Thom	0.97	1.31	1.41	1.46	0.54	0.91	1.38
Kampot		0.77	1.21	1.22	0.75	0.83	0.35
Kandal	0.45	0.79	1.00	0.96	0.69	0.55	0.57
Koh Kong		4.38	0.52	0.43	0.75		
Kratie		1.23	1.38	1.24	1.29	0.48	
Mondolkiri			-	1.36	1.10		
Phnom Penh	0.35		0.24	0.12	0.74		
Preah Vihear			1.40	1.47	1.07		
Prey Veng		1.09	1.38	1.37	1.22	1.21	0.84
Pursat	1.63	1.81	1.27	1.31	0.76		
Rattanakiri		0.42	2.41	2.41	1.78		
Siem Reap	1.10	0.97	1.95	1.66	1.24	0.99	1.34
Sihanoukville		0.40	-	0.79	1.31		
Stung Treng		1.87	1.99	1.52	1.09	1.04	
Svay Rieng		1.28	1.42	1.38	0.60	0.57	1.00
Takeo		0.83	1.35	1.34	1.22	0.92	0.48
Oddar Meanchey			1.08	1.61	1.36	0.86	
Kep			-	0.93	0.72		
Pailin			-	1.81	1.47		
Total	0.75	1.07	1.33	1.24	0.90	0.98	0.96

Note: Average farm size is the agricultural land size in hectares per household. LH refers to land holding by household.

The average size of an "owned with title and occupied" residential plot is computed at 888.13 square metres as per the SES-99 sample. In rural areas the average size is 918.50 square metres, while in urban areas it is 616.15 square metres. Province-specific data are given in Table 6.2. Seen in the international context, these areas appear rather large. But it is important to note that traditional Khmer houses, particularly in rural areas, are built in relatively large plots that are also used for growing *chamkar* crops. In this regard, homestead land is also used for productive purposes.

Table 6.2: Number of households and residential holdings and average size, by province

Province	Households	Residential holdings	Average size (m2)
Banteay Meanchey	104874	99992	917.10
Battambang	129900	113603	1014.12
Kompong Cham	284298	280943	822.65
Kompong Chhanang	79831	78637	1402.77
Kompong Speu	92098	91413	801.67
Kompong Thom	105204	102708	1289.70
Kampot	103020	101705	1017.76
Kandal	212806	207902	711.22
Koh Kong	20909	20737	368.32
Kratie	52278	51592	795.68
Mondolkiri	2444	2084	-
Phnom Penh	173815	169407	209.22
Preah Vihear	21660	21660	1290.21
Prey Veng	206622	206622	796.60
Pursat	61977	47200	1150.09
Rattanakiri	20611	20407	1444.23
Siam Reap	117135	112665	1077.11
Sihanoukville	23093	22517	927.14
Stung Treng	12379	11832	1219.81
Svay Rieng	92298	92298	1208.92
Takeo	151338	149303	824.79
Oddar Meanchey	12496	12158	1069.04
Kep	8128	7935	1180.25
Pailin	3940	3841	2113.21
Total	2093152	2029160	888.13

Source: SES-99

A number of surveys have collected data on farmland holdings. A collation of average size of agricultural land per household is presented in Table 6.3.[5] General comparability is permissible across all the data sets since one rural area is not very different from the other. The average land size per household is around one hectare, with a deviation of 25–30 percent from one survey to another. PET-98 shows the largest average land per household at 1.32 hectares, which is *a priori* inexplicable since the PET respondents were mainly the internally displaced and could not be expected to hold relatively large plots. Despite statements earlier, SES-97 and SES-99 may not strictly be comparable. The data-collecting format for agricultural land was different in the two surveys which may have allowed some differences to creep in. Also, since SES-99 contains some provinces that were not included in SES-97 in which land holdings are larger than elsewhere, the average could be different. But SES-97 and SES-99 show a significant difference of 0.27 hectares in the average size of holdings. In fact farmland per household in rural areas was reported to be *larger in 1999* (1.33 hectares) than in 1997 (1.07 hectares). It appeals to *a priori* logic that SES-99 is more accurate since its questionnaire was better designed to collect data on agricultural lands, implying that more trust can be placed in its estimates. However, it has been strongly stated by some that there was some data error in SES-99 in its collection. In this regard, both these SES data sets lack some degree of credibility.[6] Baseline-98 and Follow-up-00 have comparable samples and they also yield comparable results: land per household in these samples is about 0.97 hectares. Lastly the MRC-95–96 yields the smallest average land size (0.79 hectares), which is

[5] The average size of land per household is the mean of farm holdings across households. Households without land are also included in the calculation since the purpose here is to determine the average land availability and distribution rather than other considerations like the economics of farm management.

[6] It is important to note that in SES-97, data on agricultural land were not collected parcel-wise, but by aggregate land owned. Also, data for agricultural land were recorded in square metres. These could have caused some error. In SES-99, investigators were given the freedom to fill in the size of land in *rei, kongs*, metres or hectares; there is high probability of error creeping in due to this. Also, some of the local measures, like *kong*, are not standardised, thereby increasing the probability of error.

understandable given that this survey targeted fishing communities. All the surveys show that the average size of land holdings is smaller in female-headed households than in male-headed households.

Table 6.3: Average size of agricultural land per household (in hectares)

	Average size of agricultural land holding per household		
	Male-headed	Female-headed	Total
PET-98	1.32	1.28	1.32
SES-97 (rural)	1.18	0.67	1.07
SES-99 (rural)	1.41	0.98	1.33
SES-99	1.33	0.87	1.23
Baseline-98	0.97	1.13	0.98
Follow-up-00	0.96	0.83	0.96
MRC-95–96	0.79	0.56	0.75

A province-specific dis-aggregation of the land size per household, as seen from different data sets, can be seen in Table 6.1 (columns 2, 3, 4, 5, 7 and 8). SES-99 data show that at both aggregate and provincial levels, the size of land per household is larger than the size of a parcel. On the average there are 1.37 parcels per household. Only in Koh Kong, Phnom Penh and Sihanoukville is the average parcel size larger than the average size of land per household. Second, average land size per household in different provinces has some, though limited, consistency across the data sets, meaning that those provinces that show larger land size per household in one data set also show larger sizes of land in another data set and vice versa. However, since none of the sample designs of the data sets statistically permit a breakdown by province, data in Table 6.1 are presented only for illustrative purposes and only very limited inferences should be drawn.

6.2. Land acquisition

The 1989 land distribution was based on land availability in villages and the number of members in a family:

> *To ensure fair distribution, the government ordered local authorities to allocate 1-2 hectares of agricultural land in each village, according to population density and land availability. This was for future re-distribution to returnees from the border camps, demobilised soldiers, and Cambodian returnees from overseas. Therefore it is reasonable to assume that most people legally acquired land through re-distribution in 1989 and were officially recognised as landowners by local authorities. (Sik 2000:11).*

Table 6.4: Agricultural land acquisition

Mode of acquisition	% Households
Given by relatives & friends	43
Given by authorities	28
Purchased	11
Cleared land themselves	10
Given by *krom samaki*	5
Unused agriculture land	3
Total	100

Source: PET-98 quoted in Sik (2000)

PET-98, which primarily focused on internally displaced persons and is the only survey to collect data on how land was acquired, shows that people in its survey areas have acquired land by varied means: 43 percent of the households were given land by relatives, 28 percent of the households were given land by authorities while only five percent of the households were given land by *Krom Samaki*. The reason put forward by Sik (2000) lies in the sample design itself, which was biased towards specific targets. Next, this survey was conducted in 1998, long after the land distribution in 1989. Since the demographic characteristics changed

considerably during the 1990s — for example, a very large number of new families emerged — the initial distribution may not have been reflected in this survey. In view of the specific coverage of PET-98, its general usefulness for land analysis is limited and the data have to be interpreted with care.

6.3. Land tenure

The land law prevailing at the time of writing this paper permitted *possession rights* for agricultural lands and *ownership rights* for residential lands. For each of these a certificate is issued against claims made (for which receipts are issued).

Table 6.5 shows the responses of respondents as to whether or not they owned land and how much land they owned, by type of land and rural and urban locations. This table, drawn from SES-97, shows that an unusually large number of respondents stated that they *owned their lands with titles* for agricultural as well as residential holdings in both rural and urban areas. This appears to be unrealistic and clearly contradictory to the findings of Chapter 4 (Table 4.1) above. This is particularly worth noting because SES-97, by and large, is a representative sample and has no apparent slant in its survey design, unlike PET-98.

Table 6.5: Percentage of households reported to have owned land by ownership status

Owner status	Residential Land		Agricultural Land	
	Urban	Rural	Urban	Rural
Ownership with title	77	82	79	87
Ownership unsettled/held for free	22	17	19	12
Rented/leased	1	1	2	1
Total	100	100	100	100

Source: SES-97 quoted in Sik (2000)

Sik (2000) argues that the question asked in the SES-97 questionnaire was not very specific; as a result most of the respondents may not have differentiated between a title and an application receipt or any other paper that they may have possessed to stake claim on their land. In the questionnaire, the question allowed only three choices in the form of answers: ownership with title, ownership unsettled/held for free and rented/leased. This does not permit many who may possess application receipts and await titles to mention their exact position. For sure they would not believe that their ownership is "unsettled;" hence it is possible that they chose the first alternative.[7] Additionally, many genuinely take application receipts to be possession papers, as was found in a recent study, "Social Assessment of Land in Cambodia" (So *et al.* 2001).

The same question was asked in SES-99 as well but the format was the same only for residential lands. The responses showed that some respondents possessed two or more plots as well, which were distributed across "ownership with title" and "ownership unsettled/held for free." As a result, the totals did not neatly add up to 100, as in Table 6.5. For agricultural lands the questions asked were directed towards land use, though the data could be regrouped into a format similar to that in Table 6.5. In each case, for SES-99 the data *do not* pertain to "distribution of households." In the case of residential lands they are "distribution of holdings" (grouped by "owned with title," "ownership unsettled/held for free" and "rented/leased") and for agriculture the distribution is by parcels. This is how the next two tables are drawn-up and labelled.

Data in Table 6.6a and Table 6.6b show that in 1999, an even higher proportion of people in the population were reported to have stated that they possessed titles than the number reported in 1997 by SES-97. This reinforces the belief that normal possession of land with

[7] SES-96 also asked this question. It found that 96 percent of households owned residential land, 0.4 percent rented it, 3.2 percent held it for free and 0.4 percent had their ownership status disputed. About 95 percent held documentation from the Department of Cadastre. For agricultural land, 46 percent owned or occupied it, out of whom 98 percent held documentation from Department of Cadastre. Many of these figures appear erroneous at face value.

some paper to support claim of ownership or control has been reported to be "ownership with title." In the case of agriculture there is an added column in SES-99, which permits the tabulation of the number of leased out land parcels as well. The table reports this to be a little over one percent. An interesting observation regarding these data is that about seven percent of all agricultural land parcels are owned or controlled by people residing in urban areas. This could mean that some people who own or control agricultural lands had moved to urban areas at the time of the survey, and/or that some urban residents acquired agricultural lands.

Table 6.6a: Percentage of residential holdings by ownership status

Owner Status	Residential Land		
	Urban	Rural	Total
Ownership with title	77.44	91.13	89.07
Ownership unsettled /held for free	19.72	8.42	10.12
Rented/leased out	2.84	0.45	0.81
Total	100	100	100

Source: SES-99

Table 6.6b: Percentage of agricultural land parcels by ownership status

Owner Status	Agricultural Land		
	Urban	Rural	Total
Ownership with title	84.6	89.8	89.5
Ownership unsettled /held for free	8.5	5.5	5.7
Leased out	2.6	1.2	1.3
Leased in	3.5	3.1	3.1
Not reported	0.8	0.4	0.4
Total	100	100	100

Source: SES-99

PET-98 appears to report a more realistic picture of land ownership, in the sense that those possessing certificates or proper papers are closer to the reality reported in Chapter 4. Table 6.7 shows that only about 2 percent of the respondents possessed formal certificates of their residential land and 1 percent of their agricultural land. Nearly three-fourths do not possess any paper to establish claim on their land officially.

Table 6.7: Percentage distribution of households by the type of papers possessed

Ownership status	Residential Land			Agricultural Land		
	Male-headed	Female-headed	Total	Male-headed	Female-headed	Total
No paper	74	60	73	75	62	74
Receipt	14	18	15	13	16	13
Application for possession	2	4	2	2	6	2
Land investigation record	1	3	1	1	1	1
Certificate	2	0	2	1	0	1
No land	7	15	7	8	15	9
Total	100	100	100	100	100	100

Source: PET-98 quoted in Sik (2000)

This table also exhibits some peculiarities with regard to gender. There are more male-headed households who possess certificates but more female-headed households who possess application receipts. Again, there are many more male-headed households than female-headed households who do not possess any paper to support their claim on land are. The fact that this sample has a large in-built self-selection must have biased the results. Despite this, PET-98 results are certainly closer to the extant rural reality than the SES surveys on this question.

6.4. Possession of land

The question of land ownership has been addressed differently in different data sets, in accordance with their primary purpose in conducting the survey. The MRC-95–96 survey, aimed at fishing communities, concentrated on land in the context of livelihood derived from land and water. Hence, as seen from Table 6.8 below, the classification of land ownership is drawn up accordingly.

Table 6.8: Percentage of households reported as possessing land

Land	Male-headed	Female-headed	Total
Residential land	99.1	99.2	99.1
Agricultural land	76.9	70.2	75.6
Orchard land	15.4	13.2	15.0
Other land	0.5	0.3	0.5
Fishpond in homestead	3.6	2.6	3.4
Fishpond outside homestead	0.5	0.1	0.4

Source: MRC Survey 95-6, quoted in Sik (2000).

These data show that residential landlessness does not appear to be a problem in this sample area. About three-quarters of households possess agricultural lands — a higher proportion of male-headed households than female-headed households do so. Surprisingly, few households own fishponds — though again, more male-headed than female-headed households own them. In fact, many more households own *orchard lands* compared to *fishponds* despite the fact that most respondents belong to riparian communities. These statistics lead one to believe that the riparian communities tend to place considerable reliance on fishing in common waters and that exclusive dependence on fishing is not high.

Tables 6.9a and 6.9b again reiterate that residential landless is small, though these data show that there are more people who are residential land-less in the general populace compared to fishing communities (Table 6.8). Both these sets of the SES data show that residential landlessness is 2 to 4 percent, higher in urban areas than rural areas and higher among female-headed households than among male-headed households.[8] Since both SES-97 and SES-99 are highly representative of the population, there is reason to put faith in these numbers.

Table 6.9a: Percentage of households reported as possessing residential and agricultural land

Land	Urban			Rural		
	Male-headed	Female-headed	Total	Male-headed	Female-headed	Total
Residential land	95.7	94.9	95.4	97.4	97.3	97.4
Agricultural land	27.6	26.5	27.3	87.0	83.7	86.2

Source: SES-97 quoted in Sik (2000)

Table 6.9b: Percentage of households reported as possessing residential and agricultural land

Land	Urban			Rural			Overall		
	Male-headed	Female-headed	Total	Male-headed	Female-headed	Total	Male-headed	Female-headed	Total
Residential land	96.0	96.3	96.1	97.2	97.6	97.3	97.0	97.4	97.1
Farm land	42.1	29.5	39.3	85.4	79.4	84.2	79.1	71.2	77.6

Source: SES-99

Regarding the possession of agricultural land there is some significant digression between the two SES data sets. While for rural residents the difference in overall possession of agricultural land is not so large — it was 86.2 percent according to SES-97 and 84.2 percent SES-99 — for urban residents it was 27.3 percent according to SES-97 and 39.3 percent according to

[8] On this aspect data from SES-96 are close to those here.

SES-99. Does this fall in the possession of land among rural residents and a corresponding rise in land occupancy by urban residents mean that the former are losing land to the latter? Are demography and migration responsible for these changes? Is it just a difference arising out of how the questions were asked and perceived? Or is it just that data error is again showing up? These are questions that need further probing. With regard to gender, the usual pattern again holds: more male-headed households possess agricultural land compared to female-headed households.

Baseline-98, Follow-up-00 and PET-98 surveys also collected data on farmland possession. Data presented in Table 6.10 pertain to agricultural land only, with a breakdown by type of land use. Access to "any land" in these households is seen to be higher here compared to that found in Tables 6.8 and 6.9a & 6.9b. Could the self-selection in these latter samples be the reason for the difference? Reasons for significant access to land among PET-98 sample respondents are seemingly unclear. A comparison of Baseline-98 and Follow-up-00 is statistically permissible, and this comparison reveals that respondents' access to wet rice fields visibly increased over these two years. At the same time, access to *chamkar* lands fell while access to house garden plots rose. Is a change of magnitude of such proportions possible in such a short period? The gender differences appear to be particularly sharp and *a priori* inexplicable. Some error may have crept in because about five percent of the observations were dropped while cleaning the Follow-up-00 data. Also, possibility of data error cannot be ruled out because nutrition rather than land ownership was the main focus of Baseline-98 and Follow-up-00 surveys and the accuracy of some variables outside nutrition issues may not have been very high.

Table 6.10: Percentage of households possessing rice and chamkar lands

Land type	Baseline-98			Follow-up-00			PET-98		
	Male-headed	Female-headed	Total	Male-headed	Female-headed	Total	Male-headed	Female-headed	Total
Any land	-	-	-	92.5	96.0	92.6	93	83	92
Wet-season rice	82	86	82	89.9	96.0	90.0	74	62	73
Dry-season rice	8	8	8	6.9	2.0	6.7	2	4	2
Chamkar	24	19	24	16.2	6	15.7	42	31	41
House garden	32	32	32	47.9	36	47.4	61	62	61

6.5. Landlessness

In an economy like Cambodia's, questions such as "What is landlessness?" and "Who are the landless?" can be ambiguous. In other countries—Indonesia, Philippines and Bangladesh for example—there is a category of farmers termed as landless farmers, who regularly hire out their services to landowners for a wage. This category is small or even negligible in Cambodia; it was 1 percent of the total agricultural workforce according to the population census of 1998 (RGC 1999). Literature suggests that there are people who sell land in order to use the proceeds to make a better living outside agriculture and that there are others who are landless and not in agriculture (such as fishermen/women, loggers and petty traders) and who wish to acquire land in order to make a better living. Should these categories of persons be termed as landless? There are also people who dwell in urban areas and own agricultural land in rural areas. Should they be called landless if they sell or lose their land? In the strictest sense only those who have involuntarily lost land, possess no skills other than in farming and face uncertain livelihood because of the loss of land, can be termed landless. No major survey, other than perhaps LADIT-00, has collected data to suit this definition. However, this survey does not address the full array of issues raised in this paragraph. The data are discussed below.

It is easier to define populations without residential lands: they are pavement dwellers, people living in conditions of temporary or insecure tenancy, or they are squatters. Part of the information on possession of residential land is given in the section on ownership of land above. Data from all the surveys on households not possessing land are consolidated in Table 6.11. The PET-98 data shows high residential landlessness—understandably so given the

sample. Since this aspect has been talk about earlier while discussing Tables 6.8, 6.9a and 6.9b and are not elaborated further here.

Table 6.11: Percentage of households without residential land

	Percentage of households without residential land		
	Male-headed	Female-headed	Total
PET-98	10.8	21.6	11.6
SES-96	-	-	4.6
SES-97 (urban)	4.3	5.1	4.6
SES-97 (rural)	2.6	2.7	2.6
SES-99 (urban)	4.1	3.7	4.0
SES-99 (rural)	2.8	2.5	2.8
SES-99 (total)	3.0	2.7	3.0
MRC-95–96	0.9	0.8	0.9

An aggregate and province-specific picture of agricultural landlessness compiled from different surveys can be seen in Table 6.12. The province-specific presentation is only illustrative since none of the sample designs of the data sets strictly permits this dis-aggregation. MRC-95–96, for obvious reasons, shows maximum landlessness. SES-97 (rural) and SES-99 (rural) show figures that are not very far apart—13 percent and 15.8 percent, respectively. Could one conclude that there has been a 2.8 percent increase in landlessness over the period 1997-9? Baseline-98 and LADIT-00 show figures quite close to SES-97 (rural). A lower total from Follow-up-00 compared to Baseline-98 is a *priori* inexplicable. In short, these data suggest landlessness to be of the order of 12-15 percent. However, since there are so many controversies regarding the interpretation of landlessness, no further explanation of this table is offered; instead the reader is invited to make his/her own interpretations.

LADIT-00, as mentioned earlier, comes closest conceptually to explaining the true meaning of landlessness.[9] Regarding gender, LADIT-00 states that landlessness is highest among families headed by single women—21.2 percent on the aggregate. Based on recall, LADIT-00 also suggests that landlessness rose from 4.01 percent in 1969 to 11.97 in 1999; it was 2.48 percent in 1984. It further states that a significant number of families have had to leave their villages consequent to becoming landless.

LADIT-00 finds that those among the landless who also did not possess a house plot are 43.6 percent. Again, among the landless, *54.8 percent never had land, while the rest lost it due to one or another reason*. For those who *never had land* the reasons were reported as: new marriage[10] (42.3 percent), returnees (27.3 percent), changed village (26.8 percent), returned from military service (1.4 percent), were internally displaced (0.7 percent), and other reasons (1.5 percent). Of those who *lost land* the reasons for the loss are: expenses due to illness (43.7 percent), lack of food (20.1 percent), expropriation (13 percent), indebtedness (4.6 percent), business failed/changed business (3.5 percent), natural disaster (3.4 percent) and other reasons (11.7 percent). The report notes that land loss may be caused by a number of factors operating simultaneously. The parties who expropriated land are listed as: military (36 percent), provincial authorities (35.6 percent), former owners (12.6 percent), local authorities (12.2 percent), relatives (2.1 percent), and others (1.4 percent).

[9] LADIT-00 uses a family as the unit of enumeration rather than the household unit used in the other surveys. This could expose some landlessness that may be concealed when the household is the enumeration unit.

[10] Newly married refers to persons married after the land distribution of the 1980s.

Table 6.12: Agricultural landlessness by province (landlessness is the percentage of households without agricultural land)

Province	MRC-95–96	SES-97 (rural)	SES-99 (rural)	SES-99 (total)	Baseline-98	Follow-up-00	LADIT-00
Banteay Meanchey		13	15.8	19.0		19.2	12.7
Battambang	25	27	28.8	36.1	29	33.3	19.5
Kompong Cham	20	19	14.2	15.9	4	13.5	10.7
Kompong Chhnang	25	16	14.3	18.0	17	0.0	12.0
Kompong Speu		6	3.5	4.8	7	0.0	10.4
Kompong Thom	16	9	8.8	10.0	1	2.6	11.0
Kampot		2	5.3	8.0		0.0	5.6
Kandal	35	17	15.9	17.8	13	9.5	15.6
Koh Kong		50	37.9	48.6			24.5
Kratie		23	39.3	37.6	37		12.1
Mondolkiri				15.5			-
Phnom Penh			74.3	88.2			3.1
Preah Vihear			2.4	2.4			-
Prey Veng		7	8.9	9.3	8	3.6	5.7
Pursat	7	13	26.2	26.2			13.0
Rattanakiri		3	7.9	10.7			-
Siem Reap	12	8	8.3	19.5	4	0.0	18.8
Sihanoukville				56.6			-
Stung Treng			5.0	24.2	2		5.6
Svay Rieng		4	4.4	6.5	6	2.0	6.4
Takeo		3	9.3	9.2	8	1.6	7.9
Oddar Meanchey			4.8	5.4	6		12.1
Kep				7.6			-
Pailin				0.0			6.5
Total	24	13	15.8	22.4	11	7.4	12.0

6.6. Land tenancy

Historically, land tenancy in peasant societies has been a means for making optimal use of different factors of production; at the same time it is a method by which those who do not possess land are able to access it for a price. Both leasing-in and leasing-out land have been practices that have existed for a long time. MRC-95–96 found that land tenancy existed to an extent of 5-6 percent in 1995–96 in the communities that were covered under that survey, while SES-97, whose coverage was country-wide, found this figure to be lower (Table 6.13).

Table 6.13. Tenancy of land – percentage of households who leased agricultural lands (MRC-95–96 and SES-1997)[11]

Percentage of households who:	MRC-95–96			SES-97 Survey		
	Male-headed	Female-headed	Total	Male-headed	Female-headed	Total
Lease-in land	10.7	5.9	9.8	3.2	2.2	3.0
Lease-out land	5.1	6.5	5.4	.	.	.

Table 6.14 shows data according to plots leased in and leased out as obtained from SES-99. Unlike in Table 6.13, it has been possible here to calculate the extent of tenancy for both residential and agricultural land. Since these data are plot-specific it is not strictly possible to compare them with those in Table 6.13. SES-99 data, like the earlier ones, nevertheless show minimal tenancy. There is higher tenancy for agricultural plots compared to residential land.

[11] SES-96 reported households who rented land to be a little over 1 percent.

Table 6.14: Tenancy of land – percentage of land plots leased (SES-99)

Percentage of households who:	Residential land			Agricultural land		
	Male-headed	Female-headed	Overall	Male-headed	Female-headed	Overall
Leased-in	-	-	-	4.1	2.3	3.8
Leased out	0.7	1.1	0.8	1.3	2.2	1.5

Source: SES-99

6.7. Land inequality

Land inequality in agrarian societies has been discussed not only from altruistic motives, but also for the survival of the populace, since land frontiers are not expanding at the same pace as populations. This is particularly true for those populations that depend on agriculture for subsistence. Data on land inequality have been collected by almost all data sets. A summary of the land distribution obtained from different data sets is presented in Table 6.15.[12] All the surveys show some significant land concentration, particularly for those groups that control more than one hectare of land. MRC-95–96 shows that, at the top, 21 percent of households control 65 percent of the land, the SES-97 (rural) survey shows that 23 percent of households control 70 percent of the land, SES-99 (rural) shows that 44 percent of households control 88 percent of the land, SES-99 (total) shows that 52 percent of households control 82 percent of the land, Baseline-98 shows that 23 percent of households control 56 percent of the land, Follow-up-00 shows that 28 percent of households control 62 percent of the land, and finally, PET-98 shows that 36 percent of households control 69 percent of the land.

The Gini coefficient of inequality is a measure of inequality that ranges between 0 and 1, where Gini = 0 implies total equality and Gini = 1 implies total equality. The MRC-95–96 Survey shows the Gini coefficient to be 0.61. It is probably high due to the presence of a large number of landless in the sample: the Gini coefficient is sensitive to the *relative* inequality and not so much to absolute sizes of land held. In fact this is true with all surveys that exhibit large landlessness other than the PET Survey. The large difference in the value of the Gini coefficient between SES-97 (rural) and SES-99 (rural) calls for greater scrutiny as to whether there has been some sample bias or data error in one or both of these SES surveys, or some significant distribution of land has occurred in the rural economy between 1997–99. In fact, there is also a large difference between the average agricultural land size (as seen earlier in the text) and land distribution (Table 6.15) between the two samples. Finally, a comparison of the Baseline-98 and Follow-up-00 shows that over the two years covered by the surveys, inequality has decreased to some extent in the sample area where these surveys were conducted.

Since SES-99 and Follow-up-00 are the latest data available, they have been subjected to a little more scrutiny. Table 6.16a shows the distribution of land as obtained from these surveys in interval classes that are more dis-aggregated than those in Table 6.15. SES-99 data for rural areas show a fairly uniform distribution of land up to the three hectares size bracket, but a huge skew thereafter. It shows that 7.4 percent of the households at the top control 30 percent of the land. In the Cambodian context this is high, though elsewhere in Asia, the skew could be still higher. Follow-up-00 data shows not much concentration for land in the one to three hectares bracket, but for the land size bracket greater than three hectares, 3.2 percent households control 15.6 percent of the land. Again, this reiterates the findings found from the SES-99 data.

The inequality is still higher for residential lands: the Gini coefficient is 0.68 (Table 6.16b). At the upper end of the size brackets, the 1.6 percent of residential plots that are larger than 5,000 square metres each, cover over 30 percent of the total residential area in the country. This is in contrast to more than 47 percent of the households at the lower end owning less than 500 square metres each. This certainly is a cause for concern.

[12] SES-96 also collected data on land holdings by size but they appear to be incomplete. Hence they are not reproduced here.

Table 6.15 Percentage distribution of households by percentage of land held and the coefficient of inequality

Land size categories	Percentage of Households			Percentage of Agricultural land holdings		
	Male-headed	Female-headed	Total	Male-headed	Female-headed	Total
MRC-95–96 (Gini coefficient of agricultural land concentration = 0.61)						
Landless	23	30	24	-	-	-
>0-0.5 ha/hh	34	37	34	12	19	13
>0.5-1.0 ha/hh	22	20	21	24	32	22
>1.0 ha/hh	21	13	21	64	49	65
SES-97 (rural) (Gini coefficient of agricultural land concentration = 0.66)						
Landless	11	15	12	-	-	-
>0-0.5 ha/hh	37	48	40	8	18	10
>0.5-1.0 ha/hh	26	23	25	19	29	20
>1.0 ha/hh	26	14	23	73	53	70
SES-99 (rural) (Gini coefficient of agricultural land concentration = 0.57)						
Landless	14.6	20.6	15.8			
>0-0.5ha/hh	15.7	23.8	17.3	3.5	7.9	4.1
>0.5-1.0ha/hh	21.9	25.6	22.6	13.0	21.6	14.2
>1.0ha/hh	47.8	30.0	44.3	83.5	70.5	81.7
SES-99 (total) (Gini coefficient of agricultural land concentration = 0.66)						
Landless	20.9	28.8	22.4	-	-	-
>0-0.5ha/hh	14.6	21.6	16.0	3.5	8.0	4.1
>0.5-1.0ha/hh	20.2	22.9	20.7	12.8	21.8	14.0
>1.0ha/hh	44.3	26.7	40.9	83.7	70.2	81.9
Baseline-98 (Gini coefficient of agricultural land concentration = 0.50)						
Landless	11	11	11	-	-	-
>0-0.5 ha/hh	34	43	35	14	14	14
>0.5-1.0 ha/hh	32	23	31	31	18	30
>1.0 ha/hh	23	23	23	55	68	56
Follow-up-00 (Gini coefficient of agricultural land concentration = 0.49)						
Landless	7.5	4.0	7.4	-	-	-
>0-0.5 ha/hh	35.1	46.0	35.5	12.6	17.1	12.7
>0.5-1.0 ha/hh	29.4	28.0	29.4	24.9	30.7	25.2
>1.0 ha/hh	28.0	22.0	27.7	62.5	52.2	62.1
PET-98 (Gini coefficient of land concentration = 0.47)						
Landless	16	30	17	-	-	-
>0-0.5 ha/hh	19	17	18	7	8	7
>0.5-1.0 ha/hh	29	23	29	24	24	24
>1.0 ha/hh	36	30	36	69	68	69

Note: hh refers to household; ha refers to hectares

Table 6.16a: Percentage of households and proportion of agricultural land holdings, SES-99 (rural) and Follow-up-00

Categories of agricultural land size	Percentage of households	Proportion of agricultural land
SES 99 (rural) (Gini coefficient of land concentration =0.57)		
Landless	15.8	
>0 – 0.5ha	17.3	4.1
>0.5 – 1.0ha	22.6	14.2
>1.0 – 1.5ha	13.6	13.8
>1.5 – 2.0ha	13.2	18.7
>2.0 – 2.5ha	5.7	10.0
>2.5 – 3.0ha	4.4	9.5
>3.0ha	7.4	29.6
Follow- up-00 (Gini Coefficient of land concentration = 0.49)		
Landless	7.4	
>0 – 0.5ha	35.6	12.7
>0.5 – 1.0ha	29.4	25.2
>1.0 – 1.5ha	11.3	16.1
>1.5 – 2.0ha	8.1	16.2
>2.0 – 2.5ha	2.1	5.4
>2.5 – 3.0ha	2.9	8.9
>3.0ha	3.2	15.6

Table 6.16b: Percentage of households and proportion of residential land holdings, SES-99

Categories of residential land size	Percentage of households	Proportion of residential land holdings
SES-99 (Gini coefficient of residential land concentration =0.68)		
Landless	3.1	
>0 – 100m^2	15.3	0.7
>101 – 500m^2	29.3	7.3
>501 – 1000m^2	22.7	15.0
>1001 – 5000m^2	28.1	46.9
>5001m^2	1.6	30.1

Chapter Seven

Attributes of Agricultural Land Holding

7.1. Land holding and standards of living - bivariate tabulations

Studies based on LADIT-00 have so far been the most quoted research works on linking poverty with agricultural land ownership in Cambodia. Statistically a relationship between these two variables has been found to hold in other agrarian economies of Asia as well as elsewhere.[1] Logically it is not difficult to believe that when agricultural land is the most dominant means of deriving income and livelihood, poverty should ensue from landlessness. However, since the LADIT Survey has neither collected any data on actual incomes, nor has it provided the sources from which different people in rural settings derive their earnings, it has not been *statistically* established that the landless are the poorest. In this regard an earlier field study in rural Cambodia points towards the fact that people derive their incomes from several sources: agriculture, forests, fishing, and wage labour, and income from farming is not predominant (Murshid 1998).[2] A *linear* relationship between poverty/standards of living and land holding may therefore not hold.

The two data sets of most recent origin, SES-99 and Follow-up-00, have been subject to further cross-tabulation with selected variables in this chapter in order to assess the relationship between land ownership and standards of living. Given the fact that Baseline-98 and Follow-up-00 were drawn from the same sample frame and their questionnaires were the same, the two samples have been merged so as to produce a better representation. The tabulations go beyond these two variables to present a broader picture of the attributes of agricultural land ownership. This analysis is restricted to rural areas where people's main occupation is agriculture.

Table 7.1 presents a two-way cross tabulation of data on the distribution of rural households by per capita household consumption — used as a proxy for measuring standards of living — and agricultural land holdings as obtained from SES-99. This table presents some unexpected results. The first row shows that for all those who are landless, only 13.8 percent fall in the poorest quintile. In the first cell in this table, the column percentage shows that among the poorest 20 percent, the landless constitute only 10.9 percent. At the same time, there are 37.7 percent landless in the top quintile of the standards of living and they constitute 29.7 percent of the top 20 percent richest (row 1, column 6). In contrast, of the “three or more hectare landowner” households, there are 23.6 who belong to the poorest quintile, though there are only 8.8 percent “three or more hectare landowner” households who fall in the poorest quintile. Even outside these corner cells, there is no discernible pattern visible. After omitting the totally landless from the sample, there is a very weak positive correlation observed between per capita expenditure and land holdings. But how can the landless, who

[1] See Visaria (1981) and Srinivasan and Bardhan (1988). A March 2001 issue of *The Economist* carried a somewhat similar argument for Africa (*The Economist*, March 31 2001:19).

[2] This has also been confirmed by the Baseline-98 and Follow-up-00 data, which provide information on incomes by source.

form the centrepiece of the debate on rural poverty, be omitted from the tabulation? Some believe that possibility of data error in the measurement of consumption expenditures cannot be ruled out.[3] To verify this, it is instructive if the same tabulation is made from another data set, namely Baseline-98/Follow-up-99.

Table 7.1: Percentage distribution of rural households by agricultural land holdings and per capita consumption expenditure (row and column %) as tabulated from SES-99

Agricultural landholding (ha)	1st(poorest) quintile	2nd quintile	3rd quintile	4th quintile	5th(richest) quintile	Total
0.00	13.8	14.2	15.1	19.2	37.7	100
	10.9	11.1	11.9	15.1	29.7	15.8
0.0001-0.50	23.1	21.6	19.1	18.4	17.8	100
	19.9	18.6	16.4	15.9	15.4	17.3
0.5001-1.00	21.7	21.8	22.8	19.3	14.3	100
	24.6	24.6	25.8	21.9	16.2	22.6
1.0001-1.50	23.9	20.9	19.9	19.8	15.5	100
	16.3	14.2	13.6	13.5	10.6	13.6
1.5001-2.00	18.0	22.6	24.5	21.7	13.2	100
	11.9	14.9	16.2	14.4	8.8	13.2
2.0001-2.50	15.5	23.6	20.2	17.4	23.3	100
	4.4	6.7	5.7	4.9	6.6	5.7
2.5001-3.00	14.8	20.8	19.8	28.4	16.2	100
	3.2	4.5	4.3	6.2	3.5	4.4
3.0001 & more	23.6	14.2	16.3	21.3	24.6	100
	8.8	5.3	6.1	8.0	9.2	7.4
Total	20.0	20.0	20.0	20.0	20.0	100
	100	100	100	100	100	100

Table 7.2 presents a two-way cross tabulation of data on the distribution of rural households by per capita household consumption and agricultural land holdings as obtained from Baseline-98/Follow-up-00. Like earlier in SES-99, these data also show that from all those landless, there are only 9.3 percent households who fall in the poorest 20 percent bracket, while 30 percent of the landless fall in the top consumption bracket. In contrast, among those who hold more than three hectares land, 14.7 percent are in the poorest consumption bracket, while 22.1 are in the highest consumption bracket. Once again there is a rather weak positive correlation observed between the per capita household expenditure and land holding, after the totally landless are deleted from the sample. But then the same question arises again: how can the landless be deleted from the sample?

The data error proposition, mentioned earlier, can be discounted in the discussion here because more than one data set has produced similar results. Then the question that follows is whether per capita consumption really measures the standards of living. Alternatively, is possession of land an adequate measure of livelihood or does it have to be qualified further with other variables like actual control of land, productivity, and access to working capital - meaning that land issues have not been adequately addressed in these surveys so as to reflect upon poverty and livelihood?

Standards of living can be gauged by other variables as well, such as education attained, existence of child labour, extant morbidity, house quality, members of the household going hungry some time in a year and seasonal migration.[4] To judge the association between agricultural land holdings and these variables, cross tabulations between size of agricultural land holdings and education level of the head of the household, between size of agricultural land holdings and prevalence of child labour and between size of agricultural land holdings and morbidity prevalence were attempted using the SES-99 data set. There was no discernible

[3] Gibson (2000) has calculated poverty based on SES-99 data. He believes that there could be some data error.

[4] Dreze and Sen (1991) adequately elaborate upon such variables that may be coterminous with poverty.

association found between any of these pairs of variables. Similarly, cross tabulations between agricultural land holdings and type of house, between agricultural land holdings and prevalence of hunger, and between agricultural land holdings and seasonal migration were attempted using the other data set, namely Baseline-98/Follow-up-00. Once again there was no discernible association found between any of these pairs of variables. These tabulations, though not presented here for brevity, are evidence to the fact that there appears no be no overt inaccuracy in the way the variable "standard of living" is defined.

Table 7.2: Percentage distribution of rural households by agricultural land holdings and per capita consumption expenditure (row and column %) as tabulated from Baseline-98/Follow-up-00

Agricultural land holding (ha)	Poorest quintile	2nd quintile	3rd quintile	4th quintile	Richest quintile	Total
0.00	9.3	16.3	25.6	18.6	30.2	100
	1.8	3.3	5.1	3.8	5.9	4.0
0.0001-0.50	19.1	19.8	20.2	20.2	20.8	100
	34.7	37.7	37.5	39.0	38.4	37.4
0.5001-1.00	19.1	22.1	20.7	18.9	19.2	100
	29.5	35.8	32.6	31.1	30.1	31.8
1.0001-1.50	30.0	18.6	18.2	19.8	13.4	100
	16.7	10.8	10.3	11.7	7.5	11.4
1.5001-2.00	27.3	14.3	16.8	17.4	24.2	100
	9.9	5.4	6.2	6.7	8.9	7.5
2.0001-2.50	23.1	17.3	21.2	17.3	21.2	100
	2.7	2.1	2.5	2.2	2.5	2.4
2.5001-3.00	22.0	12.0	18.0	20.0	28.0	100
	2.5	1.4	2.1	2.4	3.2	2.3
3.0001 & more	14.7	20.6	23.5	19.1	22.1	100
	2.3	3.3	3.7	3.1	3.4	3.1
Total	20.6	19.6	20.1	19.4	20.3	100
	100	100	100	100	100	100

Table 7.3 Distribution of rural households by agricultural land holdings and residential land holdings (row and column %) as obtained from SES-99

	Residential land in sq. metres						
Agricultural land holdings (ha)	nil	1-100	101-500	501-1000	1001-5000	5001 and more	Total
0.00	11.9	31.3	29.4	16.5	11.3	0.0	100
	67.6	43.3	15.5	10.8	6.0	0.0	15.8
0.0001-0.50	2.4	9.4	35.4	25.0	26.5	1.2	100
	15.1	14.4	20.5	18.1	15.6	7.3	17.3
0.5001-1.00	0.8	8.7	31.9	25.7	30.4	2.5	100
	6.2	17.5	24.1	24.5	23.3	20.4	22.6
1.0001-1.50	0.2	7.0	31.0	25.0	32.1	4.7	100
	1.2	8.5	14.1	14.3	14.9	22.9	13.6
1.5001-2.00	1.0	5.6	27.2	23.5	38.4	4.4	100
	4.6	6.6	12.0	13.1	17.3	20.6	13.2
2.0001-2.50	0.0	8.7	31.2	21.1	31.8	7.2	100
	0.0	4.4	5.9	5.0	6.1	14.5	5.7
2.5001-3.00	1.3	4.2	23.9	30.4	38.2	2.0	100
	2.1	1.6	3.5	5.6	5.7	3.1	4.4
3.0001 & above	1.2	5.7	17.2	27.7	44.0	4.2	100
	3.2	3.7	4.3	8.7	11.1	11.2	7.4
Total	2.8	11.3	29.9	23.8	29.4	2.8	100
	100	100	100	100	100	100	100

Lastly, a cross tabulation between the size of agricultural land holdings and residential land holdings is presented in Table 7.3 with a view to finding out whether or not agricultural land holding has any correlates. This table shows a statistically significant association between these two variables: the Pearson correlation coefficient is small at 0.10, but is valid at 0.05 percent confidence level. Thus, those who own more agricultural land, to an extent also own more residential land.

The analysis here on the whole suggests that agricultural land holdings or residential holdings, as measured in these surveys, do not show statistical association with the standard of living, irrespective of the way it is measured. Indeed there is need to collect more details on land holding, use and control, in order to probe this question further.

7.2. Multivariate analysis

To identify the explanatory variables of standards of living and more specifically to judge the association between standards of living and land holding *in a multivariate framework* as against the *bivariate tabulations* made above, a multiple regression equation has been estimated. The model is fairly simple: it is based on the premise that people live and eat better when their incomes are higher rather than lower, and that income levels, in turn, depend on their physical and human endowments, the capacity of the socio-economic environment to yield incomes and the economic dependency within the household.

The dependent variable in the regression is the annual expenditure on all items,[5] measured in the form of per capita as well as total. This variable is measured in its natural logarithmic form since the equation fitted better in that form. Physical endowment is measured by agricultural land possessed including zero land holdings, while human endowment is measured by the extent of education received (number of years of schooling). The capacity of the environment to yield incomes is measured by the village average income (or productivity of rice). Lastly, economic dependency is measured by the reverse of the variable, that is the ratio of working persons to total members in a household.

The equation estimated with SES-99 data pertaining to rural areas is as in Equation (1) below:

(1) $\text{Ln (PCC)} = 13.21^* - 1.91(10)^{-2}\,\text{LAND}^* + 2.57(10)^{-2}\,\text{EDN}^* + 0.29\,\text{ECOD}^* + 8.87(10)^{-7}\,\text{VINC}^* - 5.06(10)^{-2}\,\text{HHS}^*$

(0.041) (0.005) (0.002) (0.042) (0.000) (0.005)

$R^2 = 0.26$ F = 251.86 n = 3599

Legend: PCC - Per Capita Consumption (Riels); LAND - Agricultural Land Holding (Ha); EDN - Years of Education; ECOD - Economic Independence Ratio; VINC - Village Average Household Income (Riels); and HHS - Household Size. Figures in brackets are the respective standard error estimates, and * signifies statistical significance at 5 percent confidence level.

This equation is a good fit in the sense that all the explanatory variables are statistically significant at 5 percent confidence level. For a large and countrywide sample, an overall explanation of 26 percent is also highly acceptable. All coefficients of variables, other than LAND, also bear the expected signs, which reconfirms the fact that PCC appropriately measures the standard of living. The paradox in this equation is the negative sign of the coefficient of LAND, which implies that the landless and the small land holders generally have *better* standards to living, and the vice versa. This paradox was reflected in the bivariate analysis as well, earlier.

The equation has been re-estimated with the dependent variable replaced by *total* consumption in place of per-capita consumption. This has been done to avoid a possible pitfall in estimation that may arise when one of the independent variables, household size in

[5] The SES measures food expenditure on a weekly basis, other non-durable items on monthly basis and durable items and services expenditures (e.g., school fees) on an annual basis. These have been denominated on an annual basis.

this case, is also the denominator in the dependent variable.[6] The estimated equation with SES-99 data is shown in Equation (2) below:

(2) $\ln(TC) = 13.84^* - 1.78(10)^{-2}\,LAND^* + 2.80(10)^{-2}\,EDN^* + 0.16\,ECOD^* + 8.52(10)^{-7}\,VINC^* + 0.14\,HHS^*$

(0.041) (0.005) (0.002) (0.042) (0.000) (0.005)

$R^2 = 0.40$ $F = 469.59$ $n = 3599$

Legend: TC - Total Consumption in a Household

This equation is a better fit than the previous one: the total explanation here is 40 percent. Each of the coefficients is significant at 5 percent confidence level. The coefficient of household size is positive and significant; it is a statistical corrective against biases that may arise because of unequal household sizes. This equation nevertheless carries the earlier paradox of a negative and a statistically significant coefficient of the variable LAND.

In an effort to find out whether the negative sign on the coefficient of LAND is due to some rather far flung outliers in the sample, the equation was re-estimated using a qualitative response model — a logistic regression model — where the dependent variable was a binary variable, whether or not a household is below the poverty line. The poverty line was the same as that developed by Gibson (2000). The only difference in this equation, again not presented here for brevity, is that the coefficient of LAND is statistically not significant. It does not negate the earlier hypothesis.

The model was also estimated with Baseline-98/Follow-up-00 data. Here, in the absence of data on village average income, village average rice yield has been used, and the household consumption has been measured on a monthly basis. Since Baseline-98/Follow-up-00 is technically composed of two data sets, an intercept dummy has been added to differentiate between the two. The estimated equations in the two variants are presented in Equations (3) and (4) below.

(3) $\ln(PCC) = 10.70^* + 5.05(10)^{-3}\,LAND + 1.88(10)^{-2}\,EDN^* + 0.23\,ECOD^{**} + 3.24(10)^{-4}\,VINC^* - 8.20(10)^{-2}\,HHS^* - 7.64(10)^{-2}\,DUM^*$

(0.094) (0.018) (0.005) (0.122) (0.000) (0.008) (0.033)

$R^2 = 0.08$ $F = 31.29$ $n = 2155$

(4) $\ln(TC) = 11.59^* + 9.22(10)^{-3}\,LAND + 1.95(10)^{-2}\,EDN^* - 1.29(10)^{-2}\,ECOD + 3.25(10)^{-4}\,VINC^* + 7.63(10)^{-2}\,HHS^* - 7.98(10)^{-2}\,DUM^*$

(0.094) (0.018) (0.005) (0.122) (0.000) (0.008) (0.033)

$R^2 = 0.06$ $F = 22.60$ $n = 2155$

Legend: DUM - Intercept Dummy Variable to differentiate between the two samples, and ** refers to statistical significance at 10 percent confidence level.

Both these equations are poorer fits compared to the earlier ones: the R^2 values are lower. But in both of them the coefficients of LAND are statistically not significant.[7] Once again the paradox of negative or insignificant relationship between land ownership and standards of living is re-enforced in these equations. The other variables largely state what they depicted in the earlier equations; hence the arguments are not repeated.

Some provisional inferences that can be drawn are: that not all landless in rural areas are uniformly poor and they surely have other means to subsist; those households who control large land holdings also have large sized households and hence more members to support (this is supported by data[8]); it is possible that the quality of land of the larger plots may not be

[6] There is a long drawn controversy on this topic. See paper by Ahluwalia, in Mellor and Desai (1985).

[7] The same equation was also fitted for SES-97 data to be doubly sure of the conclusions drawn here. The estimate is as below:

$\ln(TC) = 13.79^* + 1.43(10)^{-3}\,LAND + 1.96(10)^{-2}\,EDN^* + 5.96(10)^{-2}\,ECOD^{**} + 8.91(10)^{-7}\,VINC^* + 0.13\,HHS^*$

$R^2 = 0.23$ $F = 224.32$ $n = 3761$

The coefficient of LAND is positive but statistically not significant.

[8] The correlation coefficient between the land holding and household size is significant at 0.5 percent confidence as per the SES-99 data.

good or lands may be fragmented; and finally, larger plots may not be intensively utilised. But the earlier observation, that these data are not the most suitable for an analysis of land situation, needs reiteration.

Chapter Eight

Conclusion

This paper has aimed to enumerate agencies responsible for issuing land use certificates and concessions, and then provide a brief description of various types of concessions granted to date. The land use under different patterns also forms a part of this paper. The work is then extended to providing details on the extent of land titling completed so far. Finally, it undertakes an analysis of different socio-economic data sets. Here the effort was to enumerate the number of land parcels in the country, calculate the average size of parcels, and determine the extent of landlessness and inequality.

The paper does not attempt to conduct a detailed socio-economic analysis or construct elaborate models with the help of these data. Rather, the purpose is to create an inventory of the data sets available. Hence the inferences are limited. These are mainly drawn from re-tabulation of data from the socio-economic datasets analysed here, followed by some preliminary multivariate regression estimation. To an extent, these are extensions of CDRI's earlier work on this topic, though some new issues regarding the use of these data have been raised and analysis of additional datasets is included. The following recommendations are aimed at strengthening the available database for land management planning.

Recommendations

1. The land use data need to be strengthened and brought under the control of a single authority. This will reconcile the differences in data that arise owing to methodological variations and/or coverage among individual data sets that different ministries and departments may have available with them or that they collect on a routine basis.
2. A more detailed and scientific inventory of information on all concessions given out - forest, agricultural and fishing - needs to be maintained. There is a need to update the information on the concessions constantly so as to monitor activities of the concessionaires. Also increased access to these data by an informed audience will ensure greater transparency as well as a check over the concessionaires' activities.
3. The different socio-economic surveys discussed in the text were conducted by different agencies, for different purposes and with varying foci. As a result, it is difficult to compare the findings across different surveys: only limited comparisons are permissible. The establishment of a strong database to ascertain realities on the ground is essential.
4. The total count of land parcels, households, residential plots and so forth can best be obtained by more representative sample surveys like the SES-97 and SES-99, rather than other area and target-specific surveys that do not cover the whole country or do not generate multipliers (weights) to get a representative picture of the country. It is important to conduct periodic and comparable surveys like the SES conducted by the NIS.
5. None of the existing socio-economic surveys were exclusively or even substantially devoted to questions on land. The LADIT Survey addresses land issues exclusively but is neither exhaustive in its coverage of questions nor representative of the country. The need

for an exclusive land-centred quantitative survey cannot be emphasised more strongly. Several land surveys have been conducted in other countries. The Land Tenure Center at the University of Wisconsin, United States, has some useful inventories on data and methodologies. Collections available with the Food and Agricultural Organisation — mainly the follow-ups of the World Conference on Agrarian Reforms and Rural Development — can also be of help.

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Appendix

1. Cambodia Socio-Economic Survey 1996

Part v. Household and housing particulars
Landholdings

Q30 *Do you have some land that you own or occupy?*	Q31 *What type is your land?* 1 Yes 2 No (Do not ask q32 to Q34 anymore)	Q32 *What is the tenure status of your land?* 1 Owned 2 Rented (Go to Q34) 3 Occupied for free (Go to Q34) 4 Ownership unsettled (Go to Q34)	Q33 *Is your land covered by a document issued by the Department of Cadastre of the Ministry of Agriculture?* 1 Yes 2 No 3 Don't know	Q34 *What is the size of the land?* 1 Less than ½ hectare 2 ½ to 1 hectare 3 1 to 2 hectares 4 More than 2 hectares
1 Yes 2 No (GO TO Q35)	1 Residential Land			
	2 Farm Land			
	3. Others			

2. Cambodia Socio-Economic Survey 1999

Core questionnaire for household (CSES Form 3)

VII. Household assets and liabilities

Q. 22. Does the household own or occupy any land and building used for residential, commercial and industrial purposes? (Enter Code)

1=Yes, 2=No (>>Q.23) ☐

If yes, please provide the following information.

Type	Residential land and building		Other land and buildings used for residential, commercial and industrial purposes	
	Area (square meter)	Market value (Riels)	Area (square meter)	Market value (Riels)
(1)	(2)	(3)	(5)	(6)
22.1 Owned with title and occupied				
22.2 Ownership unsettled/held for free and occupied				
22.3 Leased/rented out				

Income and employment module (CSES Form 4)

Farming activities and farm income

A. Farm land

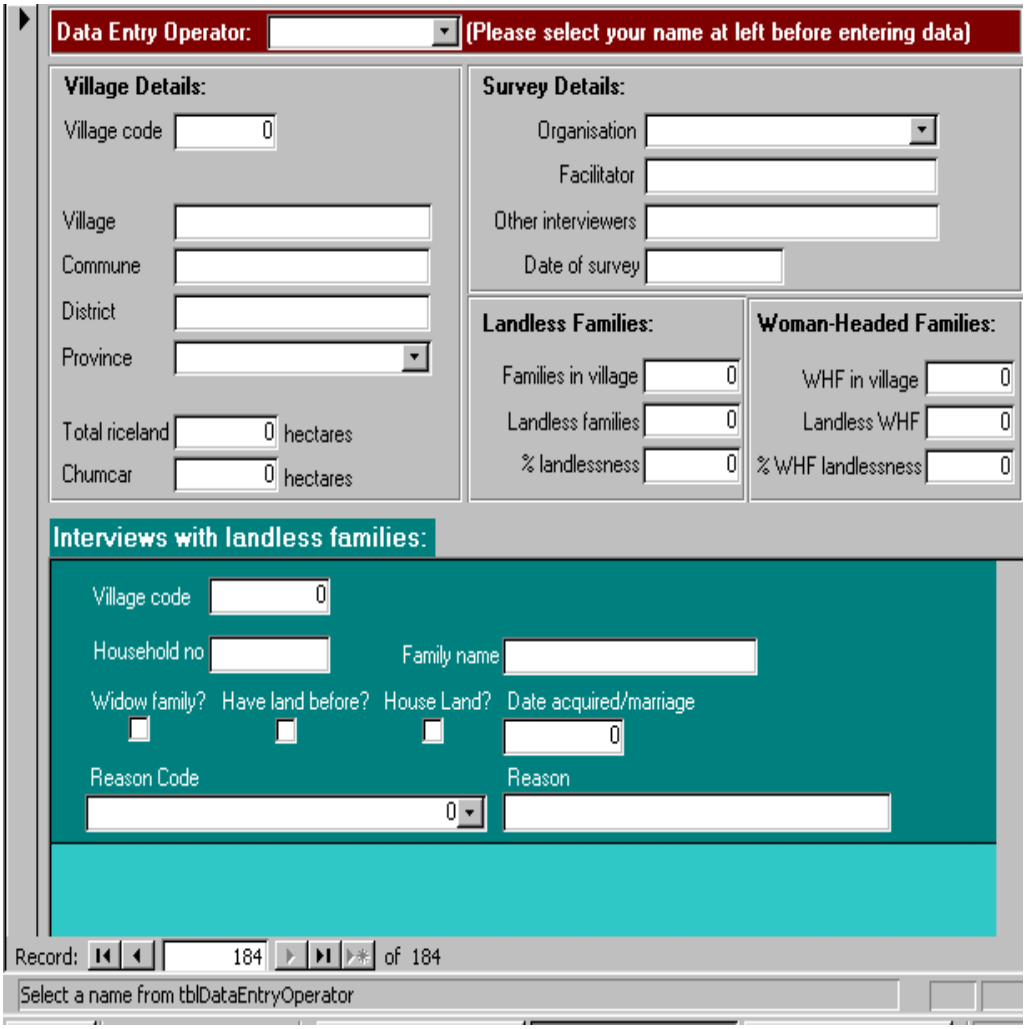
Q.4. How much farmland did your household own or possess during the past wet and dry season?

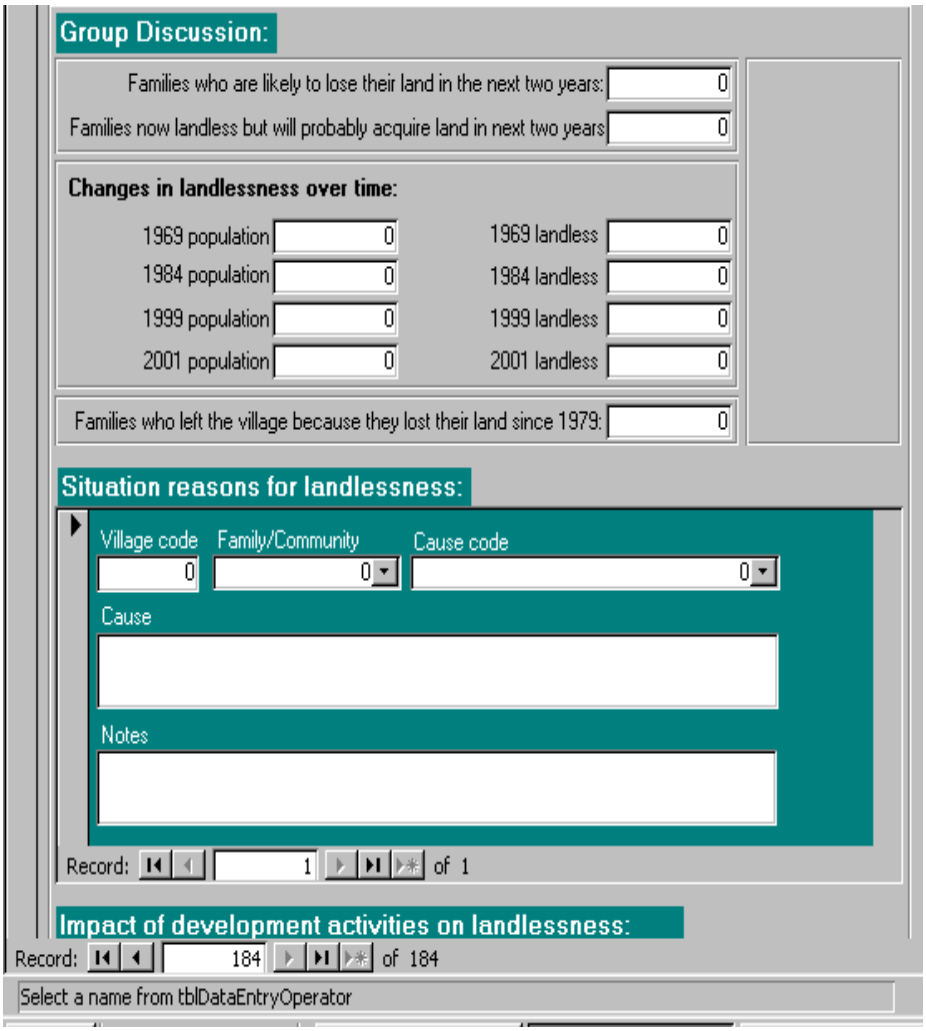
Parcel No.	Possession status	Area of land		What would be the sale value of the land at current prices?
		Area	Area unit	
(1)	(3)	(4a)	(4b)	(7)

CODES

Possession Status Codes (Col. 3): 1=Owned and managed, 2=Owned but leased out, 3=Leased in, 4= Ownership unsettled (held for free)
Area Unit Codes (Col. 4b): 1=Square meter, 2=Are, 3=Hectare, 4=Rai, 5=Kong, 6=Other (Specify)

3. LADIT Questionnaire




Group Discussion:
Families who are likely to lose their land in the next two years: 0
Families now landless but will probably acquire land in next two years 0
Changes in landlessness over time:
1969 population 0
1984 population 0
1999 population 0
2001 population 0
1969 landless 0
1984 landless 0
1999 landless 0
2001 landless 0
Families who left the village because they lost their land since 1979: 0
Situation reasons for landlessness:
Village code
Family/Community
Cause code
Cause
Notes
Record: 1 of 1
Impact of development activities on landlessness:
Record: 184 of 184
Select a name from tblDataEntryOperator

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Land Tenure in Cambodia - a Data Update

This paper first presents the allocation of land to different uses and then examines data on land and fisheries concessions. The registration and titling process and data are next examined. Finally, the paper retabulates and interprets data from eight socio-economic surveys conducted in Cambodia in the recent years in order to analyse the information on land that they provide. The aim of this final chapter is to count the number of land parcels in the country, calculate the average size of parcels, estimate landlessness and land inequality, and make a preliminary estimate of the relationship between poverty and landlessness.

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