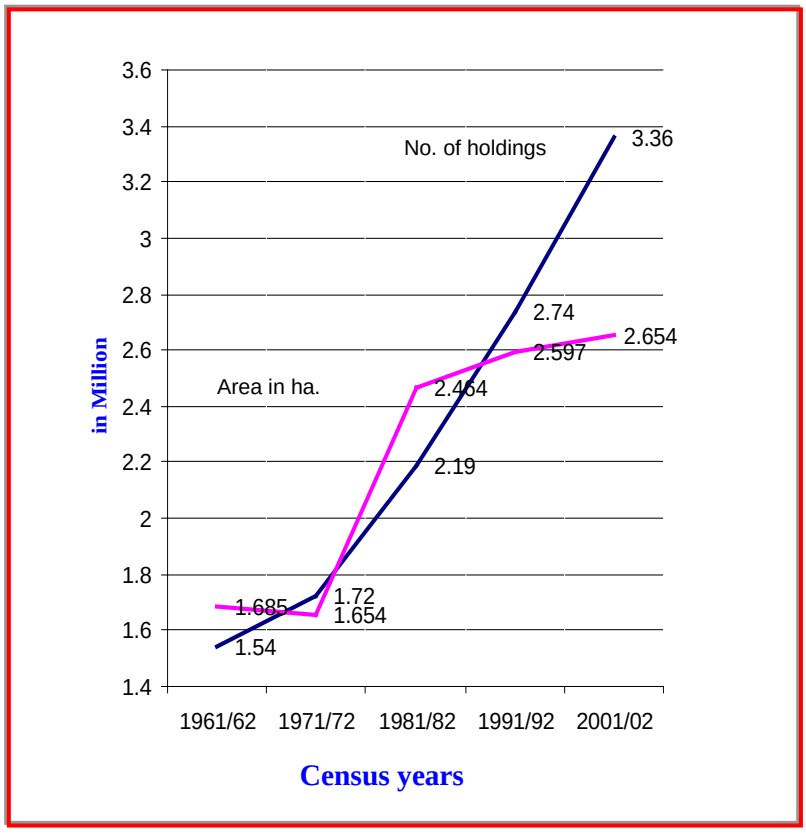
MONOGRAPH

AGRICULTURE CENSUS

NEPAL, 2001/02



GOVERNMENT OF NEPAL

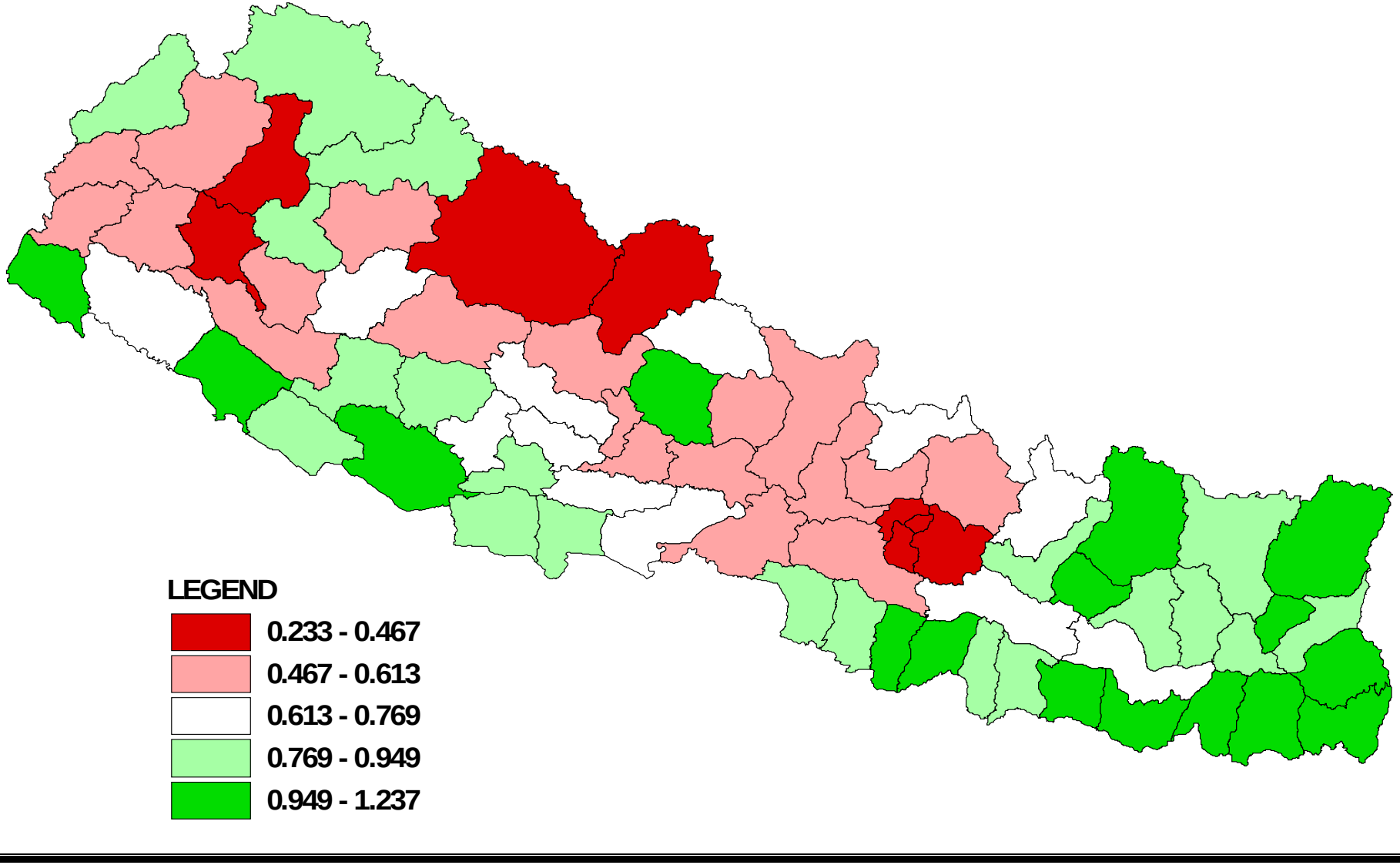
NATIONAL PLANNING COMMISSION SECRETARIAT

CENTRAL BUREAU OF STATISTICS

KATHMANDU, NEPAL

2006

Average Agriculture Holding Size



PREFACE

Agriculture is the key economic activity and a source of livelihood for the majority of the population, thus a program of annual survey supplemented by a decennial census to establish changes in structure is a matter of major concern.

In recognition of the importance of improving and expanding the statistical base to provide for effective planning and policy making, Nepal has been conducting decennial census of agriculture since 1961/62. This Agricultural Census Monograph presents a bird's eye view of the findings of the National Census of Agriculture – 2001/02 in all major aspects of agricultural activities.

The reference period for the complete count of agricultural holdings and total area of the holdings was 2001 as it was collected along with the listing operation of the Population Census 2001. The reference period for the rest of the characteristics of the holdings such as livestock and poultry counts, tenure of holdings, area of parcels, etc., was at the time of enumeration which was conducted from January to June, 2002. Comparability and availability of data has restricted analysis since 1961/62 to few variables only. In order to access the growth and development of agriculture in Nepal, most of the comparative analysis presented in this monograph is between 1991/92 and 2001/02 agricultural census data.

As in the previous censuses, attempts have been made to adhere to the concepts and definitions recommended by the FAO so that there is comparability of data between censuses and internationally too. As per the local and international requirements, few new items of information have been included in the census which was not gathered in the past. Aspects such as, soil type, soil color and food sufficiency/insufficiency etc. have been incorporated in the analysis for the first time.

There are 17 chapters in this report representing the different aspects in agriculture. Chapter 1 provides a general perspective on the total households and population linking them to the farm population and holdings. Chapter 2 to 5 present analysis on agricultural structure such as size of holding, land fragmentation, land tenure and land use. Analyses of temporary and permanent crops are dealt in Chapters 6 and 7. Chapters 8 and 9 examines the use of are agricultural inputs. Chapter 11 presents livestock and poultry population scenario. Chapter 12 deals on ancillary activities of agricultural holding and Chapters 10, 13 and 14 discuss other facilities available to the holding in terms of equipment, buildings and credit. Chapter 15 provides insight to disparity in holdings and operating pattern of holdings of male and female holders. The last two chapters analyze socio-economic characteristics of the farm population and farm labor.

This Monograph has been prepared with the combined effort of Mr. R. C. Das, Retired Senior Officer of the Bureau and Consultants from the Asian Development Bank who were involved at the initial stage of analysis. I would like to express my sincere thanks to them. My sincere thanks also go to Deputy Director General, Mr. Rabi Singh for his overall supervision and hard work put in by Statistical Officers Mr. S.L. Shrestha and Mr. R. Dhital. Thanks are also due to Computer Assistants Mr. L.N. Pandey and Mr. D.N. Shrestha for their computer works in preparation of this Monograph.

June, 2006
Kathmandu, Nepal

T.S. BASTOLA
Director General
Central Bureau of Statistics

TABLE OF CONTENTS

Page

Agricultural Census, 2001/02 at a Glance **a**

CHAPTER 1 : BACKGROUND **1**

1.1 Land area 1
1.2 Population 1
1.3 Population density 2
1.4 Population growth 2
1.5 Usual activity of population 10 years old and over 2
1.6 Employment rate 3
1.7 Usual activity of employed persons 3
1.8 Number of households 3
1.9 Number of agricultural holdings 4
1.10 Farm population 5

CHAPTER 2 : SIZE OF HOLDING **11**

2.1 Land holdings 12
2.2 Average size of holding 12
2.3 Farm size distribution 13
2.4 Land distribution 14

CHAPTER 3 : LAND FRAGMENTATION **23**

3.1 Number of parcels 24
3.2 Parcel size 24
3.3 Parcels per holding 25
3.4 Parcel number distribution 25
3.5 Comparison of small and large holdings 27

CHAPTER 4 :LAND TENURE **35**

4.1 Holdings by tenure 36
4.2 Area by tenure of land 36
4.3 Conditions of rent 38

CHAPTER 5 : LAND USE **48**

5.1 Land use types 49
5.2 Arable land 50
5.3 Percent of land for cultivation 53
5.4 Land use pattern in small and large holdings 54
5.5 Wet and dry land 54

CHAPTER 6 : TEMPORARY CROPS **64**

6.1 Land under temporary crops 65
6.2 Composition of temporary crops 65
6.3 Rice 67
6.4 Wheat 69
6.5 Maize 71
6.6 Other cereal grains 72
6.7 Legumes 72
6.8 Tubers 73
6.9 Cash Crops 73
6.10 Oilseeds 74
6.11 Spices 74
6.12 Vegetables 75
6.13 Cropping practices 76
6.14 Cropping intensity 76

CHAPTER 7 : PERMANENT CROPS **101**

7.1 Permanent crops grown 102
7.2 Compact and scattered crops 102
7.3 Ecological belt comparisons 103
7.4 Development regions comparisons 103
7.5 Comparison of small and large holdings 104
7.6 Productive/non-productive trees 105
7.7 Thatch, fodder trees and bamboo 105

CHAPTER 8 : IRRIGATION **120**

8.2 Concept of Irrigation 121
8.2 Land holdings with access to irrigation 121
8.3 Land under irrigation 122
8.4 Source of irrigation 123

CHAPTER 9 : USE OF INPUTS 129

9.1 Agricultural inputs....130
9.2 Growers using chemical fertilizers....130
9.3 Growers using improved seeds. 131
9.4 Growers using pesticides....131
9.5 Rice 132
9.6 Wheat 132
9.7 Maize....133
9.8 Other crops 134
9.9 Comparison of small and large holdings....134

CHAPTER 10 : AGRICULTURAL EQUIPMENT 144

10.1 Agricultural equipment....145
10.2 Type of equipment 145
10.3 Geographical distribution of equipment....146
10.4 Comparisons of small and large holdings 146

CHAPTER 11 : LIVESTOCK AND POULTRY 152

11.1 Livestock population 153
11.2 Holdings with livestock and poultry....153
11.3 Cattle 154
11.4 Chaunri 155
11.5 Buffaloes 155
11.6 Large livestock in milk....156
11.7 Small livestock 156
11.8 Poultry 157

CHAPTER 12 : ANCILLARY ACTIVITIES 164

12.1 Ancillary activities....165
12.2 Forestry activities 165
12.3 Compact forest area....165
12.4 Holdings with forest trees....166
12.5 Area of woodland and forest 166
12.6 Distribution of Forest Trees 167
12.7 Fishery activities....167

CHAPTER 13 : NON-RESIDENTIAL BUILDINGS 172

13.1 Non-residential building 173
13.2 Holdings with non-residential buildings 173

CHAPTER 14 : HOLDINGS WITH CREDIT 176

14.1 Agricultural Credit 177
14.2 Holdings with credit 177
14.3 Regional comparisons 177
14.4 Source of credit 177

CHAPTER 15 : CHARACTERISTICS OF AGRICULTURAL HOLDERS AND AGRICULTURAL HOLDINGS 183

15.1 Characteristics of agricultural holders 184
15.2 Sex of holder 184
15.3 Age of holder 185
15.4 Size of holding per holder 186
15.5 Headship of household 186
15.6 Hired manager 187
15.7 Ethnicity 188
15.8 Ethnicity in ecological belt 188
15.9 Ethnicity in development region 189
15.10 Legal status of holding/holder 189
15.11 Main use of produce of holding 190
15.12 Sufficiency of agricultural produce 191
15.13 Number of months insufficient 192

15.14 Manner of coping with insufficiency 192
15.15 Soil type and color 193
15.16 Uncultivable area due to flood/soil erosion 194

CHAPTER 16 : FARM POPULATION 218

16.1 Information on farm population 219
16.2 Farm population 219
16.3 Age and sex structure 219
16.4 Sex ratio 220
16.5 Household size 220
16.6 Comparison of small and large holdings 221
16.7 Some characteristics of districts 221

CHAPTER 17 : FARM LABOUR 234

17.1 Usual activity of farm population 235
17.2 Labour force status of farm population 236
17.3 Employment and unemployment rates 236
17.4 Employment of agricultural workers 237
17.5 Paid workers at sub-national level 238
17.6 Paid workers by size of holding 238
17.7 Number of permanent agricultural workers 238

Appendix A : Sample Specifications – Districts i
Appendix B : National Sample Census of Agriculture 2002
Schedule 2 iii

LIST OF FIGURES

Page

CHAPTER 1

FIGURE 1.1 POPULATION DISTRIBUTION, 2001 2
FIGURE 1.2 POPULATION DENSITY, 2001 2
FIGURE 1.3 POPULATION RATE OF GROWTH, 1991 TO 2001 3
FIGURE 1.4 NUMBER OF AGRICULTURAL HOLDINGS INCREASE 4
FIGURE 1.5 HOLDINGS AS PERCENT OF HOUSEHOLDS 1991/02 AND 2001/02 5

CHAPTER 2

FIGURE 2.1 AVERAGE SIZE OF HOLDINGS, ECOLOGICAL BELTS 12
FIGURE 2.2 AVERAGE SIZE OF HOLDINGS, DEVELOPMENT REGIONS 13
FIGURE 2.3 SIZE DISTRIBUTION OF HOLDINGS, ECOLOGICAL BELTS, 2001/02 13
FIGURE 2.4 SIZE DISTRIBUTION OF HOLDINGS DEVELOPMENT REGIONS, 2001/02 14
FIGURE 2.5 LAND DISTRIBUTION, NEPAL 1991/92 AND 2001/02 15

CHAPTER 3

FIGURE 3.1 AVERAGE PARCEL SIZE, 2001/02 25
FIGURE 3.2 NUMBER OF PARCELS PER HOLDING, NEPAL, 1981/82, 1991/92 AND 2001/02 25
FIGURE 3.3 NUMBER OF PARCELS PER HOLDING, ECOLOGICAL BELTS, 2001/02 26
FIGURE 3.4 AVERAGE PARCEL SIZE BY SIZE OF HOLDING, NEPAL, 2001/02 26

CHAPTER 4

FIGURE 4.1 HOLDINGS WITH FULL OWNERSHIP OF LAND, 2001/02 36
FIGURE 4.2 HOLDINGS WITH FULL OWNERSHIP OF LAND, SIZE OF HOLDING, NEPAL, 2001/02 37
FIGURE 4.3 LAND TENURE, NEPAL, 2001/02 37
FIGURE 4.4 AREA OF RENTED LAND, NEPAL, 2001/02, (‘000 HA) 38
FIGURE 4.5 CONDITIONS OF RENT, ECOLOGICAL BELTS, 2001/02 39
FIGURE 4.6 CONDITIONS OF RENT, DEVELOPMENT REGIONS, 2001/02 39

CHAPTER 5

FIGURE 5.1 LAND USE CATEGORIES, NEPAL, 2001/02 49
FIGURE 5.2 DISTRIBUTION OF ARABLE LAND, 2001/02 50
FIGURE 5.3 LAND USE, NEPAL, 2001/02 (‘000 HA) 51
FIGURE 5.4 CHANGE IN ARABLE LAND, 1991/02 TO 2001/02 52
FIGURE 5.5 ARABLE LAND, 2001/02, PERCENT OF LAND AREA 53

CHAPTER 6

FIGURE 6.1 COMPOSITION OF CROP AREA, NEPAL, 1991/92 AND 2001/02 65
FIGURE 6.2 CROP GROWERS, NEPAL, PERCENT OF ALL HOLDINGS 66
FIGURE 6.3 CROP AREAS, NEPAL 66
FIGURE 6.4 CEREAL GROWERS, NEPAL, PERCENT OF ALL HOLDINGS 66
FIGURE 6.5 RICE GROWERS, 2001/02, PERCENT OF HOLDINGS 67
FIGURE 6.6 RICE AREA, 2001/02, PERCENT OF ARABLE LAND 68
FIGURE 6.7 WHEAT GROWERS, 2001/02, PERCENT OF HOLDINGS 69
FIGURE 6.8 WHEAT AREA, 2001/02, PERCENT OF ARABLE LAND 69
FIGURE 6.9 MAIZE GROWERS,2001/02, PERCENT OF HOLDINGS 70
FIGURE 6.10 MAIZE GROWERS,2001/02, PERCENT OF ARABLE LAND 71
FIGURE 6.11 CEREAL PRODUCERS BY SIZE OF HOLDING, NEPAL, 2001/02 72
FIGURE 6.12 LEGUME GROWERS, 2001/02, PERCENT OF HOLDINGS 72
FIGURE 6.13 LEGUMES AREA, 2001/02, PERCENT OF ARABLE LAND 73
FIGURE 6.14 CROP GROWERS, NON-CEREAL CROPS BY SIZE OF HOLDING, NEPAL, 2001/02....74
FIGURE 6.15 COMPOSITION OF CROP AREA, ECOLOGICAL BELTS, 2001/02....75
FIGURE 6.16 CROPPING INTENSITY....76

CHAPTER 7

FIGURE 7.1 HOLDINGS WITH PERMANENT CROPS, TYPE OF CROP, NEPAL, 2001/02 102
FIGURE 7.2 COMPACT PERMANENT CROP PLANTATIONS, 2001/02 (‘000 HA).... 103
FIGURE 7.3 HOLDINGS WITH PERMANENT CROPS, 2001/02....104
FIGURE 7.4 COMPACT AND SCATTERED TREES, NEPAL, 2001/02....104
FIGURE 7.5 PRODUCTIVE AND NON-PRODUCTIVE TREES, COMPACT CROPS, NEPAL, 2001/02....105

CHAPTER 8

FIGURE 8.1 HOLDINGS WITH IRRIGATION BY SIZE OF HOLDING, NEPAL, 2001/02....121
FIGURE 8.2 AREA OF LAND IRRIGATED, 1981/82, 1991/92 AND 2001/02....122
FIGURE 8.3 SOURCE OF IRRIGATION, NEPAL, 2001/02, PERCENT OF IRRIGATION LAND 123

CHAPTER 9

FIGURE 9.1 GROWERS USING CHEMICAL FERTILIZER, NEPAL....130
FIGURE 9.2 CHEMICAL FERTILIZERS, AREA TREATED, NEPAL, 2001/02 130
FIGURE 9.3 GROWERS USING IMPROVED SEEDS, 2001/02....131
FIGURE 9.4 CHEMICAL FERTILIZERS, RICE AREA TREATED, 2001/02 132
FIGURE 9.5 GROWERS USING CHEMICAL FERTILIZER, 2001/02....133
FIGURE 9.6 GROWERS USING CHEMICAL FERTILIZER BY SIZE OF HOLDING, NEPAL, 2001/02....133

CHAPTER 10

FIGURE 10.1 USE OF AGRICULTURAL EQUIPMENT, NEPAL, 2001/02 145
FIGURE 10.2 USE OF AGRICULTURAL EQUIPMENT BY SIZE OF HOLDING, NEPAL, 2001/02 146

CHAPTER 11

FIGURE 11.1 LIVESTOCK NUMBERS, NEPAL, 1981/82, 1991/92 AND 2001/02....153
FIGURE 11.2 HOLDINGS WITH LIVESTOCK, NEPAL, 1991/92 AND 2001/02 153
FIGURE 11.3 HOLDINGS WITH CATTLE AND BUFFALOES, 2001/02 154
FIGURE 11.4 LIVESTOCK POPULATION BY TYPE, ECOLOGICAL BELTS, 2001/02....155
FIGURE 11.5 LIVESTOCK POPULATION, DEVELOPMENT REGIONS, 2001/02....156
FIGURE 11.6 HOLDINGS WITH CHICKENS, 2001/02....157

CHAPTER 12

FIGURE 12.1 NUMBER OF FOREST TREES, 2001/02 (MILLIONS)....165
FIGURE 12.2 HOLDINGS WITH FOREST TREES, 1991/92....166
FIGURE 12.3 AVERAGE TREES PER FORESTED HOLDING....167

CHAPTER 13

FIGURE 13.1 TYPES OF NON-RESIDENTIAL BUILDINGS, NEPAL, 1991/92 AND 2001/02 173

CHAPTER 14

FIGURE 14.1 HOLDINGS WITH AGRICULTURAL CREDIT, 2001/02....177
FIGURE 14.2 HOLDINGS WITH CREDIT, NEPAL 2001/02, SOURCE OF CREDIT (‘000)....178
FIGURE 14.3 HOLDINGS WITH CREDIT BY SIZE OF HOLDING, NEPAL, 2001/02....178

CHAPTER 15

FIGURE 15.1 FEMALE HOLDERS, 1991/92 AND 2001/02....185
FIGURE 15.2 HOLDERS BY AGE, NEPAL, 1981-2001 185
FIGURE 15.3 MALE AND FEMALE HOLDERS BY SIZE OF HOLDING, NEPAL, 2001/02 186
FIGURE 15.4 AGE OF HOLDER BY AVERAGE SIZE OF HOLDING, NEPAL, 1991-2001 186
FIGURE 15.5 TOP THREE ETHNIC GROUPS OF NEPAL BY SEX OF HOLDER, 2001/02....188
FIGURE 15.6 LEGAL STATUS OF HOLDIHNG BY SIZE OF HOLDING, NEPAL, 200102....189
FIGURE 15.7 MAIN USE OF PRODUCE BY SEX OF HOLDER AND SIZE OF HOLDING, NEPAL, 2001/02....190
FIGURE 15.8 HOLDINGS WITH INSUFFICIENT AGRICULTURAL PRODUCE BY SEX OF HOLDER, NEPAL, 2001/02 191

CHAPTER 16

FIGURE 16.1 AGE OF FARM POPULATION, NEPAL, 2001/02 219
FIGURE 16.2 AVERAGE HOUSEHOLD SIZE, 2001/02....221
FIGURE 16.3 AGE DISTRIBUTION BY SIZE OF HOLDING, NEPAL, 2001....221

CHAPTER 17

FIGURE 17.1 USUAL ACTIVITY OF FARM POPULATION, NEPAL, 2001 235

FIGURE 17.2 LABOUR FORCE PARTICIPATION RATE BY GEOGRAPHIC AREA, NEPAL, 2001.....236

FIGURE 17.3 EMPLOYMENT RATE OF FARM POPULATION BY GEPGRAPHIC AREA, 2001.....237

FIGURE 17.4 EMPLOYMENT OF PAID LBOUOR, NEPAL, 2001/02 238

LIST OF TABLES

Page

CHAPTER 1

TABLE 1.1 TOTAL LAND AREA, NUMBER OF HOUSEHOLDS, POPULATION, POPULATION GROWTH, AND POPULATION DENSITY BY ECO-DEVELOPMENT REGION, NEPAL 6

TABLE 1.2 POPULATION 10 YEARS OLD AND OVER BY USUAL. ACTIVITY STATUS DURING THE LAST TWELVE MONTHS BY SEX, NEPAL: 2001 7

TABLE 1.3 USUAL ACTIVITY OF POPULATION WHO WERE USUALLY EMPLOYED DURING THE LAST TWELVE MONTHS BY SEX, NEPAL: 2001 7

TABLE 1.4 NUMBER OF AGRICULTURAL HOLDINGS BY SUB-ECOLOGICAL BELT, 2001/02 8

TABLE 1.5 FARM POPULATION BY SUB-ECOLOGICAL BELT, 2001/02 8

TABLE 1.6 CHARACTERISTICS OF POPULATION AND HOLDINGS, NEPAL, 1961/62 TO 2001/02 8

TABLE 1.7 CHARACTERISTICS OF POPULATION AND HOLDINGS BY ECOLOGICAL BELT, 1981/82, 1991/92 AND 2001/02 9

TABLE 1.8 CHARACTERISTICS OF POPULATION AND HOLDINGS BY DEVELOPMENT REGION, 1981/82 TO 2001/02 10

CHAPTER 2

TABLE 2.0 SUMMARY STATISTICS 11

TABLE 2.1 NUMBER AND AREA OF HOLDINGS, NEPAL, 1961/62 TO 2001/02 16

TABLE 2.2 NUMBER AND AREA OF HOLDINGS BY ECOLOGICAL BELT, 1981/02, 1991/02 AND 2001/02 16

TABLE 2.3 NUMBER AND AREA OF HOLDINGS BY DEVELOPMENT REGION, 1981/02, 1991/02 AND 2001/02 17

TABLE 2.4 NUMBER AND AREA OF LAND HOLDINGS, NEPAL, 2001/02 17

TABLE 2.4A NUMBER AND AREA OF HOLDINGS BY TYPE AND SIZE AND BY SEX OF HOLDER, NEPAL, 2001/02 18

TABLE 2.5 PERCENTAGE DISTRIBUTION OF NUMBER AND AREA OF LAND HOLDINGS BY SIZE OF HOLDING, NEPAL, 1961/62 TO 2001/02 19

TABLE 2.6 PERCENTAGE DISTRIBUTION OF NUMBER AND AREA OF LAND HOLDINGS BY SIZE OF HOLDING AND ECOLOGICAL BELT, 2001/02 19

TABLE 2.7 PERCENTAGE DISTRIBUTION OF NUMBER AND AREA OF LAND HOLDINGS BY SIZE OF HOLDING AND BY DEVELOPMENT REGION, 2001/02 20

TABLE 2.8 NUMBER AND AREA OF HOLDINGS BY DISTRICT, 2001/02 20

CHAPTER 3

TABLE 3.0 SUMMARY STATISTICS....23

TABLE 3.1 AREA AND FRAGMENTATION OF HOLDINGS, NEPAL, 1961/62 TO 2001/02 28

TABLE 3.2 AREA AND FRAGMENTATION OF HOLDINGS BY ECOLOGICAL BELT, 2001/02 29

TABLE 3.3 AREA AND FRAGMENTATION OF HOLDINGS BY DEVELOPMENT REGION, SEX OF HOLDER, NEPAL, 2001/02....30

TABLE 3.4 NUMBER AND PERCENT OF LAND HOLDINGS BY NUMBER OF PARCELS AND BY SEX OF HOLDER, NEPAL, 1981/82, 1991/92 AND 2001/02 31

TABLE 3.5 NUMBER AND PERCENT OF LAND HOLDINGS BY NUMBER OF PARCELS AND ECOLOGICAL BELT, 2001/02....32

TABLE 3.6 NUMBER AND PERCENT OF LAND HOLDINGS BY NUMBER OF PARCELS AND DEVELOPMENT REGION, 2001/02....32

TABLE 3.7 NUMBER AND PERCENT OF LAND HOLDINGS BY NUMBER OF PARCELS, SIZE OF HOLDING AND SEX OF HOLDER, NEPAL, 2001/02 33

TABLE 3.8 NUMBER OF PARCELS BY SIZE OF LAND HOLDING, NEPAL, 2001/02....34

CHAPTER 4

TABLE 4.0 SUMMARY STATISTICS....35

TABLE 4.1 NUMBER OF AREA OF LAND HOLDINGS BY TYPE OF TENURE, AND BY SEX OF HOLDER, NEPAL, 2001/02 40

TABLE 4.2 AREA OF LAND HOLDINGS BY TYPE OF TENURE – ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, BY SEX OF HOLDER, NEPAL, 2001/02 41

TABLE 4.3 NUMBER AND PERCENT OF LAND HOLDINGS BY TYPE OF TENURE – ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, 2001/02....42

TABLE 4.4 AREA OF LAND HOLDINGS BY TYPE OF TENURE AND SIZE OF HOLDING, NEPAL, 2001/02 44

TABLE 4.5 PERCENT OF LAND HOLDINGS BY TYPE OF TENURE, SIZE OF HOLDING, AND SEX OF HOLDER, NEPAL, 2001/02 45

TABLE 4.6 HOLDINGS RENTING LAND AND AREA OF LAND RENTED BY CONDITIONS OF RENT, NEPAL, 2001/02....46

TABLE 4.7 NUMBER OF HOLDINGS RENTING LAND BY CONDITIONS OF RENT, ECOLOGICAL BELT, 2001/02....46

TABLE 4.8 NUMBER OF HOLDINGS RENTING LAND BY CONDITIONS OF RENT, DEVELOPMENT REGION, 2001/02....47

TABLE 4.9 PERCENT OF HOLDINGS RENTING LAND BY CONDITIONS OF RENT AND SIZE OF HOLDING, NEPAL, 2001/02 47

CHAPTER 5

TABLE 5.0 SUMMARY STATISTICS....48

TABLE 5.1 AREA OF LAND HOLDINGS BY LAND USE, NEPAL, 1961/62 TO 2001/02....56

TABLE 5.2 AREA OF LAND HOLDINGSS BY LAMD USE AND ECOLOGICAL BELT, 1991/92 AND 2001/02....57

TABLE 5.2A AREA OF LAND HOLDINGS BY LAND USE, ECOLOGICAL BELT OF FEMALE HOLDERS, NEPAL, 2001/02....57

TABLE 5.3 AREA OF LAND HOLDINGS BY LAND USE AND DEVELOPMENT REGION, NEPAL, 2001/02 AND 1991/92....58

TABLE 5.3A AREA OF LAND HOLDINGS BY LAND USE AND DEVELOPMENT REGION OF FEMALE HOLDERS, NEPAL, 2001/02....60

TABLE 5.4 AREA OF ARABLE LAND BY SUB-ECOLOGICAL BELT, 1991/02 AND 2001/02....61

TABLE 5.5 ARABLE LAND AS PERCENT OF TOTAL LAND BY SUB-ECOLOGICAL BELT, 1991/92 AND 2001/02....61

TABLE 5.6 NUMBER AND PERCENT OF LAND HOLDINGS WITH EACH LAND USE TYPE BY SIZE OF HOLDING AND BY SEX OF HOLDER, NEPAL, 2001/02....62

TABLE 5.7 AREA OF LAND HOLDINGS BY TYPE OF LAND – ECOLOGICAL BELTS AND DEVELOPMENT REGIONS BY SEX HOLDER, NEPAL, 2001/02....63

TABLE 5.8 NUMBER OF AREA OF LAND HOLDINGS BY TYPE OF LAND AND SIZE OF THE HOLDING AND BY SEX OF HOLDER, NEPAL, 2001/02....63

CHAPTER 6

TABLE 6.0 SUMMARY STATISTICS....64

TABLE 6.1 DISTRIBUTION OF NUMBER OF HOLDINGS WITH TEMPORARY CROPS AND CROP AREA SOWN BY CROP TYPE, NEPAL, 1981/82 TO 2001/02....77

TABLE 6.1A DISTRIBUTION OF NUMBER OF HOLDINGS WITH TEMPORARY CROPS AND CROP AREA SOWN BY CROP TYPE OF FEMALE AND MALE HOLDERS, NEPAL, 2001/02....80

TABLE 6.1B PERCENT INCREASE IN THE NUMBER OF HOLDINGS WITH TEMPORARY CROPS AND CROP AREA SOWN BY CROP TYPE NEPAL, 1981/82 TO 2001/02....82

TABLE 6.2 NUMBER AND PERCENT OF HOLDINGS WITH TEMPORARY CROPS BY CROP TYPE AND ECOLOGICAL BELT, 1981/82, 1991/92 AND 2001/02....83

TABLE 6.3 AREA UNDER TEMPORARY CROPS BY CROP TYPE AND ECOLOGICAL BELT, 1981/82, 1991/92 AND 2001/02....84

TABLE 6.4 AVERAGE AREA UNDER TEMPORARY CROPS BY CROP TYPE AND ECOLOGICAL BELT, 2001/02....85

TABLE 6.5 AVERAGE AREA SOWN PER CROP GROWER BY CROP TYPE AND ECOLOGICAL BELT, 1981/82, 1991/92 AND 2001/02....85

TABLE 6.6 NUMBER AND PERCENT OF HOLDINGS WITH TEMPORARY CROPS BY CROP TYPE AND DEVELOPMENT REGION, 1981/82, 1991/92 AND 2001/02....86

TABLE 6.7 AREA UNDER TEMPORARY CROPS BY CROP TYPE AND DEVELOPMENT REGION, 1981/82, 1991/92 AND 2001/02....87

TABLE 6.8 AREA UNDER TEMPORARY CROPS BY CROP TYPE AND DEVELOPMENT REGION, 2001/02....88

TABLE 6.9 AVERAGE AREA SOWN PER CROP GROWER BY CROP TYPE AND DEVELOPMENT REGION, 1981/82, AND 1991/92 89

TABLE 6.10 NUMBER AND PERCENT OF HOLDINGS WITH TEMPORARY CROPS BY CROP TYPE AND SIZE OF HOLDING, NEPAL, 2001/02....90

TABLE 6.10A NUMBER AND PERCENT OF HOLDINGS WITH TEMPORARY CROPS BY CROP TYPE, SIZE OF HOLDING AND SEX OF HOLDER, NEPAL, 2001/02 91

TABLE 6.11 AREA UNDER TEMPORARY CROPS BY CROP TYPE AND SIZE OF HOLDING, NEPAL, 1981/82, 1991/92 AND 2001/02....93

TABLE 6.11A AREA UNDER TEMPORARY CROPS BY CROP TYPE, SIZE OF HOLDING, AND SEX OF HOLDER, NEPAL, 2001/02 94

TABLE 6.12 AREA UNDER TEMPORARY CROPS BY CROP TYPE AND SIZE OF HOLDING, NEPAL, 2001/02 95

TABLE 6.13 AVERAGE AREA SOWN PER CROP GROWER BY CROP TYPE AND SIZE OF HOLDING, 1981/82, 1991/92 AND 2001/02 95

TABLE 6.14 NUMBER OF GROWERS AND AREA AND AVERAGE SOWN OF MAIN CEREAL CROPS BY GEOGRAPHIC AREAS, NEPAL, 2001/02 96

TABLE 6.15 MIXED CROPPING, TEMPORARY CROPS AND DEVELOPMENT REGIONS, 2001/02 99

TABLE 6.16 CROPPING INTENSITY (A) BY ECOLOGICAL BELT, 1981/02, 1991/92 AND 2001/02....99

TABLE 6.17 CROPPING INTENSITY BY DEVELOPMENT REGION, 1981/02, 1991/92 AND 2001/02....100

TABLE 6.18 CROPPING INTENSITY (A) BY SIZE OF HOLDING, NEPAL, 2001/02....100

CHAPTER 7

TABLE 7.0 SUMMARY STATISTICS....101

TABLE 7.1 NUMBER OF HOLDINGS WITH PERMANENT CROPS AND COMPACT AREA BY ECOLOGICAL BELT, NEPAL, 1981/82, 1991/92 AND 2001/02 107

TABLE 7.2 NUMBER OF HOLDINGS WITH PERMANENT CROPS AND COMPACT AREA BY DEVELOPMENT REGION, 1981/82, 1991/92 AND 2001/02 108

TABLE 7.3 NUMBER AND PERCENT OF HOLDINGS WITH PERMANENT CROPS BY CROP TYPE AND ECOLOGICAL BELT, NEPAL, 2001/02....109

TABLE 7.3A PERCENT OF HOLDINGS GROWING PERMANENT CROPS BY TYPE BY ECOLOGICAL BELTS, NEPAL, 2001/022....110

TABLE 7.4 NUMBER OF HOLDINGS WITH PERMANENT CROPS BY CROP TYPE AND DEVELOPMENT REGION, NEPAL, 2001/02....111

TABLE 7.4A PERCENT OF HOLDINGS GROWING PERMANENT CROPS BY TYPE AND BY DEVELOPMENT REGION, NEPAL, 2001/02 112

TABLE 7.5 NUMBER OF HOLDINGS WITH PERMANENT CROPS BY CROP TYPE AND SIZE OF HOLDING, NEPAL, 2001/02 113

TABLE 7.6 NUMBER OF PERMANENT CROP TREES BY TYPE AND ECOLOGICAL BELT, NEPAL, 2001/02....114

TABLE 7.7 NUMBER OF PERMANENT CROP TREES BY CROP TYPE AND DEVELOPMENT REGION, NEPAL, 2001/02 115

TABLE 7.8 NUMBER PERMANENT CROP TREES BY CROP TYPE AND SIZE OF HOLDING, NEPAL, 2001/02 116

TABLE 7.9 PERMANENT CROPS - COMPACT AREA AND NUMBER OF COMPACT AND SCATTERED TREES, NEPAL, 1981/82, 1991/92 AND 2001/02 117

TABLE 7.10 COMPACT PERMANENT CROPS – PRODUCTIVE AND NON-PRODUCTIVE TREES,NEPAL,2001/02 118

TABLE 7.11 PLANTATION FEATURES OF THATCH, FODDER TREES AND BAMBOO IN OLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02 119

CHAPTER 8

TABLE 8.0 SUMMARY STATISTICS 120

TABLE 8.1 NUMBER AND PERCENT OF LAND HOLDINGS IRRIGATING-ECOLOGICAL ELTS AND DEVELOPMENT REGIONS, 1981/82, 1991/92 AND 2001/02 124

TABLE 8.2 AREA AND PERCENTOF LAND IRRIGATED IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1981/82, 1991/92 AND 2001/02 125

TABLE 8.3 NUMBER OF HOLDINGS WITH ACCESS TO IRRIGATION AND AREA IRRIGATED BY SOURCE OF IRRIGATION, NEPAL, 1991/92 AND 2001/02 126

TABLE 8.4 NUMBER AND PERCENT OF HOLDINGS WITH ACCESS TO IRRIGATION BY SOURCE OR IRRIGATION AND BY ECOLOGICAL BELT, NEPAL,2001/02 126

TABLE 8.5 AREA OF LAND HOLDINGS IRRIGATED BY SOURCE OF IRRIGATION AND BY ECOLOGICAL BELT, NEPAL, 2001/02 127

TABLE 8.6 NUMBER AND PERCENT OF LAND HOLDINGS WITH ACCESS TO IRRIGATION BY SOURCE OF IRRIGATION AND BY DEVELOPMENT REGION, NEPAL, 2001/02 127

TABLE 8.7 AREA OF LAND HOLDINGS IRRIGATED BY SOURCE OF IRRIGATION AND BY DEVELOPMENT REGION, NEPAL, 2001/02 128

TABLE 8.8 NUMBER AND PERCENT OF LAND HOLDINGS WITH ACCESS TO IRRIGATION BY SIZE OF HOLDING, NEPAL, 1991/92 AND 2001.02 128

CHAPTER 9

TABLE 9.0 SUMMARY STATISTICS 129

TABLE 9.1 HOLDINGS USING DIFFERENT INPUTS FOR SELECTED CROPS, NEPAL, 1981/82, 1991/92 AND 2001/02 136

TABLE 9.2 USE OF CHEMICAL FERTILIZERS FOR SELECTED CROPS, NEPAL, 1991/92 AND 2001/02 136

TABLE 9.3 RICE GROWERS , USE OF SELECTED INPUTS IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02 137

TABLE 9.4 WHEAT GROWERS, USE OF SELECTED INPUTS-ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02 138

TABLE 9.5 MAIZE GROWERS, USE OF SELECTED INPUTS IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02 139

TABLE 9.6 POTATO GROWERS, USE OF SELECTED INPUTS IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02 140

TABLE 9.7 SUGAR CANE GROWERS, USE OF SELECTED INPUTS IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02 141

TABLE 9.8 VEGETABLEGROWERS, USE OF SELECTED INPUTS IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02 142

TABLE 9.9 RICE, WHEAT AND MAIZE GROWERS, USE OF SELECTED INPUTS BY SIZE OF HOLDING, NEPAL, 2001/02 143

CHAPTER 10

TABLE 10.0 SUMMARY STATISTICS....144

TABLE 10.1 USE OF AGRICULTURAL EQUIPMENT OF LAND HOLDINGS BY TYPE, NEP[AL, 1991/92 AND 2001/02....147

TABLE 10.2 SOURCE OF EQUIPMENT USED BY LAND HOLDINGS, NEPAL, 1991/92 AND 2001/02....148

TABLE 10.3 NUMBER AND PERCENT OF LAND HOLDINGS USING AGRICULTURAL EQUIPMENT BY TYPE OF EQUIPMENT USED AND BY ECOLOGICAL BELT, 2001/02....149

TABLE 10.4 NUMBER AND PERCENT OF LAND HOLDINGS USING AGRI CULTURAL EQUIPMENT BY TYPE OF EQUIPMENT USED AND BY DEVELOPMENT REGION, 2001/02....150

TABLE 10.5 NUMBER OF EQUIPMENT BY TYPW AND BY ECOLOGICAL BELT, NEPAL, 2001/02....150

TABLE 10.6 NUMBER OF EQUIPMENT ITEMS BY TYPE AND BY DEVELOPMENT REGION, NEPAL, 2001/02....151

TABLE 10.7 NUMER AND PERCENT OF LAND HOLDINGS USING AGRICULTURAL EQUIPMENT BY TYPE OF EQUIPMENT USED AAND SIZE OF HOLDING, NEPAL, 2001/02....151

CHAPTER 11

TABLE 11.0 SUMMARY STATISTICS....152

TABLE 11.1 NUMBER OF HOLDINGS WITH LIVESTOCK AND LIVESTOCK NUMBERS BY LIVESTOCK TYOE, NEPAL 1981/82, 1991/92 AND 2001/02....159

TABLE 11.2 NUMBER AND PERCENT OF HOLDINGS WITH LIVESTOCK BY MAIN LIVESTOCK TYPE AND ECOLOGICAL BELT, 2001/02....159

TABLE 11.3 LLIVESTOCK NUMBERS BY MAIN LIVESTOCK TYPE, ECOLOGICAL BELT, 2001/02....160

TABLE 11.4 NUMBER AND PERCENT OF HOLDINGS WITH LLIVESTOCK BY MAIN LIVESTOCK TYPE AND DEVELOPMENT REGION, 2001/02....160

TABLE 11.5 LIVESTOCK NUMBERS BY MAIN LIVESTOCK TYPE DEVELOPMENT REGION, 2001/02....161

TABLE 11.6 NUMBER AND PERCENT OF HOLDINGS WITH LIVESTOCK BY MAIN LIVESTOCK TYPE AND SIZE OF HOLDING, 2001/02....161

TABLE 11.7 LIVESTOCK NUMBERS BY MAIN LIVESTOCK TYPE AND SIZE OF HOLDING, NEPAL, 2001/02....162

TABLE 11.8 CATTLE, CHAUNRI AND BUFFALOES POPULATION BY AGE AND SEX, NEPAL, 1981/82, 1991/92 AAND 2001/02....162

TABLE 11.9 NUMBERS OF GOATS AND SHEEP BY SEX AND AGE, NEPAL, 2001/02....163

TABLE 11.10 ADULT FEMALE LARGE LIVESTOCK AND NUMBER OF FEMALE ANIMALS IN MILK, NEPAL, 2001/02....163

CHAPTER 12

TABLE 12.0 SUMMARY STATISTICS....164

TABLE 12.1 WOODLAND AND FOREST LAND, NEPAL, 1961/62 TO 2001/02....168

TABLE 12.2 LAND HOLDINGS WITH COMPACT FOREST AREA AND FOREST TREES BY ECOLOGICAL BELT, NEPAL, 1991/92 AND 001/02....168

TABLE 12.3 LAND HOLDINGS WITH COMPACT FOREST AREA AND FOREST TREES BY DEVELOPMENT REGION, NEPAL, 2001/02....168

TABLE 12.4 TABLE 12.4: LAND HOLDINGS WITH COMPACT FOREST AREA AND FOREST TREES BY SIZE OF HOLDING, NEPAL, 2001/02 169

TABLE 12.5 NUMBER AND PERCENT OF HOLDINGS WITH FOREST TREES BY NUMBER OF TREES AND ECOLOGICAL BELT, NEPAL 2001/02 169

TABLE 12.6 NUMBER AND PERCENT OF HOLDINGS WITH FOREST TREES BY NUMBER OF TREES AND DEVELOPMENT REGION, 2001/02 170

TABLE 12.7 NUMBER AND PERCENT OF HOLDINGS WITH FOREST TREES BY NUMBER OF TREES AND SIZE OF HOLDING, NEPAL, 2001/02 170

TABLE 12.8 LAND HOLDINGS WITH FISHERY ACTIVITIES BY DEVELOPMENT REGION, NEPAL, 1991/92 AND 2001/02 171

CHAPTER 13

TABLE 13.0 SUMMARY STATISTICS 172

TABLE 13.1 NUMBER OF LAND HOLDINGS WITH NON-RESIDENTIAL BUILDINGS USED FOR AGRICULTURAL PURPOSES BY MAIN USE IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02 174

TABLE 13.2 NUMBER OF NON-RESIDENTIAL BUILDINGS USED FOR AGRICULTURAL PURPOSES BY MAIN USE IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02 175

CHAPTER 14

TABLE 14.0 SUMMARY STATISTICS 176

TABLE 14.1 NUMBER AND PERCENT OF HOLDINGS BY SOURCE OF AGRICULTURAL CREDIT AND BY ECOLOGICAL BELT, NEPAL, 1991/92 AND 2001/02 179

TABLE 14.2 NUMBER AND PERCENT OF HOLDINGS BY WHETHER HAVE AGRICULTURAL CREDIT AND DEVELOPMENT REGION, NEPAL, 1991/92 AND 2001/02 180

TABLE 14.3 NUMBER AND PERCENT OF HOLDINGS WITH AGRICULTURAL CREDIT BY SOURCE OF CREDIT, NEPAL, 1991/92 AND 2001/02 181

TABLE 14.4 NUMBER AND PERCENT OF HOLDINGS WITH AGRICULTURAL CREDIT BY SOURCE OF CREDIT AND SIZE OF HOLDING, NEPAL, 2001/02 182

CHAPTER 15

TABLE 15.0 SUMMARY STATISTICS 183

TABLE 15.1 NUMBER AND PERCENT OF HOLDERS BY SEX AND BY AGE, NEPAL, 1981/82, 1991/92 AND 2001/02 195

TABLE 15.2 NUMBER OF HOLDERS BY AGE AND SEX, NEPAL, 2001/02 195

TABLE 15.3 NUMBER AND PERCENT OF HOLDERS BY SEX AND ECOLOGICAL BELT, NEPAL, 2001/02 195

TABLE 15.4 NUMBER OF HOLDERS BY AGE AND ECOLOGICAL BELT, 2001/02 196

TABLE 15.5 TABLE 15.5 NUMBER AND PERCENT OF HOLDERS BY SEX AND DEVELOPMENT REGION, NEPAL, 2001/02 196

TABLE 15.6 NUMBER OF HOLDERS BY AGE AND BY DEVELOPMENT REGION, NEPAL, 2001/02 197

TABLE 15.7 NUMBER AND PERCENT OF HOLDERS BY SEX AND SIZE OF HOLDING, NEPAL, 2001/02 197

TABLE 15.8 NUMBER AND PERCENT OF HOLDERS BY AGE AND SIZE OF HOLDING, NEPAL, 2001/02 198

TABLE 15.9 NUMBER OF HOLDINGS BY SEX OF HOLDER, HEADSHIP OF HOUSEHOLD AND HOLDING WITH HIRED MANAGER BY SIZE OF HOLDING, NEPAL, 2001/02....198

TABLE 15.10 AGRICULTURAL HOLDERS AS HEAD OF HOUSEHOLD AND HOLDINGS WITH HIRED MANAGER BY ECOLOGICAL BELT AND DEVELOPMENT REGION, NEPAL, 2001/02 199

TABLE 15.11 MALE AND FEMALE HOLDERS BY ETHNICITY AND BY ECOLOGICAL BELT , NEPAL, 2001/02....200

TABLE 15.12 DISTRIBUTION OF HOLDERS BY ETHNICITY AND BY DEVELOPMENT REGION, NEPAL, 2001/02 204

TABLE 15.13 TOP FIVE ETHNIC GROUPS OF MALE AND FEMALE HOLDERS BY ECOLOGICAL BELT AND DEVELOPMENT REGION, NEPAL, 2001/02 206

TABLE 15.14 LEGAL STATUS OF HOLDING BY SIZE OF HOLDING AND SEX OF HOLDER NEPAL, 2001/02 208

TABLE 15.15 LEGAL STATUS OF HOLDINGS BY ECOLOGICAL BELT AND DEVELOPMENT REGION, NEPAL, 2001/02 208

TABLE 15.16 MALE AND FEMALE HOLDERS BY SIZE OF HOLDING AND USE OF PRODUCE OF HOLDING, NEPAL, 2001/02....209

TABLE 15.17 MAIN USE OF PRODUCE OF HOLDING BY SEX OF HOLDER AND BY ECOLOGICAL BELT AND DEVELOPMENT REGION, NEPAL, 2001/02 210

TABLE 15.18 SUFFICIENCY OF AGRICULTURAL PRODUCE TO FEED HOUSEHOLD BY SEX OF HOLDER AND BY ECOLOGICAL BELT, NEPAL, 2001/02....211

TABLE 15.19 SUFFICIENCY OF AGRICULTURAL PRODUCE, DURATION OF INSUFFICIENCY AND COPING MECHANISM BY SEX OF HOLDER AND BY DEVELOPMENT REGION, NEPAL, 2001/02....212

TABLE 15.20 NUMBER AND AREA OF HOLDINGS BY SOIL TYPE AND COLOR AND BY ECOLOGICAL BELT, NEPAL, 2001/02....214

TABLE 15.21 NUMBER OF HOLDINGS BY TYPE AND COLOR OF SOIL BY DEVELOPMENT REGION, NEPAL, 2001/02 215

TABLE 15.22 NUMBER OF HOLDINGS BY TYPE AND COLOR OF SOIL BY DEVELOPMENT REGION, NEPAL, 2001/02 216

TABLE 15.23 NUMBER AND AREA OF HOLDINGS MADE UNCULTIVABLE DUE TO FLOODING/EROSION BY SIZE OF HOLDING, NEPAL 2001/02....217

TABLE 15.24 NUMBER AND AREA OF LAND MADE UNCULTIVABLE DUE TO FLOODING/SOIL EROSION BY ECOLOGICAL BELT AND DEVELOPMENT REGION, NEPAL, 2001/02 217

CHAPTER 16

TABLE 16.0 SUMMARY STATISTICS....218

TABLE 16.1 AGE AND SEX COMPOSITION OF FARM POPULATION, NEPAL, 2001 223

TABLE 16.2 DISTRIBUTION OF FARM POPULATION WITH SELECTED CHARACTERISTICS, BY GEOGRAPHIC AREA, NEPAL, 2001....224

TABLE 16.3 PERCENTAGE DISTRIBUTION OF FARM POPULATION BY ECOLOGICAL BELT, NEPAL, 2001 224

TABLE 16.4 DISTRIBUTION OF FARM POPULATION WITH SELECTED CHARACTERISTICS BY GEOGRAPHIC AREA, NEPAL, 2001....225

TABLE 16.5. PERCENTAGE DISTRIBUTION OF FARM POPULATION BY DEVELOPMENT REGION, NEPAL, 2001 225

TABLE 16.6 DISTRIBUTION OF FARM POPULATION BY SIZE OF HOLDING, NEPAL, 2001....226

TABLE 16.7 AGE-SEX COMPOSITION OF FARM POPULATION BY ECOLOGICA BELT, NEPAL, 2001....226

TABLE 16.8 AGE-SEX COMPOSITION OF FARM POPULATION BY DEVELOPMENT REGION, NEPAL 2001....227

TABLE 16.9 DISTRIBUTION OF FARM POPULATION WITH SELECTED CHARACTERISTICS BY DISTRICT, NEPAL, 2001 228

TABLE 16.10 RANKING OF FARM POPULATION BY SIZE AND BY DISTRICT WITH SELECTED CHARACTERISTICS, NEPAL, 2001....230

TABLE 16.11 RANKING OF NUMBER OF HOLDINGS BY DISTRICT SHOWING FARM POPULATION RANKING, SEX RATIO, AND AVERAGE HOUSEHOLD SIZE, NEPAL, 2001 232

CHAPTER 17

TABLE 17.0 SUMMARY STATISTICS....234

TABLE 17.1 FARM POPULATION 10 YEARS OLD AND OVER BY USUAL ACTIVITY AND BY SEX AND ECOLOGICAL BELT, NEPAL, 2001 240

TABLE 17.2 LABOUR FORCE STATUS OF FARM POPULATION 10 YEARS OLD AND OVER BY SEX AND BY ECOLOGICAL BELT, NEPAL, 2001 241

TABLE 17.3 FARM POPULATION 10 YEARS OLD AND OVER BY USUAL ACTIVITY AND BY SEX AND DEVELOPMENT REGION, NEPAL, 2001 242

TABLE 17.4 TABLE 17.4: LABOUR FORCE STATUS OF FARM POPULATION 10 YEARS OLD AND OVER BY SEX AND BY DEVELOPMENT REGION, NEPAL, 2001....243

TABLE 17.5 NUMBER AND PERCENT OF HOLDINGS BY EMPLOYMENT OF AGRICULTURAL WORKERS AND ECOLOGICAL BELT, 1991/92 AND 2001/02 244

TABLE 17.6 NUMBER AND PERCENT OF HOLDINGS BY EMPLOYMENT OF AGRICULTURAL WORKERS AND DEVELOPMENT REGION, 1991/92 AND 2001/02....245

TABLE 17.7 NUMBER AND PERCENT OF HOLDINGS BY EMPLOYMENT OF AGRICULTURAL WORKERS AND SIZE OF HOLDING, NEPAL, 1991/91 AND 2001/02....246

TABLE 17.8 NUMBER OF PERMANENT AGRICULTURAL WORKERS EMPLOYED BY SEX ECOLOGICAL AND DEVELOPMENT REGIONS, 2001/02....247

AGRICULTURAL CENSUS, 2001/02 AT A GLANCE

(Selected indicators)

Total Area of Nepal (Sq. Km)	**147,181**
- Mountain	51,817
- Hill	61,345
- Tarai	34,019
Number of holdings ('000)	**3,364.1**
- Holdings with land ('000)	3,337.4
- Holdings with no land ('000)	26.7
- Holdings Less than 0.5 ha ('000)	1,578.9
- Holdings more 0.5 ha and less than 2.0 ha ('000)	1,504.3
- Holdings 2.0 ha and over ('000)	254.2
- Owner ('000)	2,896.2
- Rented from others ('000)	35.5
- Other tenure form ('000)	7.9
- More than one tenure form ('000)	397.9
Total Area of holdings ('000 ha)	**2,653.9**
Average size of holding (ha)	0.80
Average parcel per holding (no)	3.3
Average Parcel size (ha)	0.24
Land Use	
Agricultural land ('000 ha)	2,497.7
Non-agricultural land ('000 ha)	156.3
Arable land ('000 ha)	2,357.0
Area under Temporary crops ('000 ha)	2,326.1
Other Arable land ('000 ha)	30.9
Area of wood land & Forest ('000 ha)	37.2
Permanent Pasture ('000 ha)	19.7
Temporary Crops	
Area under temporary crops ('000 ha)	2,326.1
Cropped area ('000 ha)	4,251.3
Cropping Intensity	1.8

Area under Crops ('000 ha)	**4,251.3**
Rice ('000 ha)	1,544.6
Wheat ('000 ha)	793.5
Maize ('000 ha)	769.4
Millet ('000 ha)	250.5
Barley ('000 ha)	39.3
Buckwheat ('000 ha)	20.8
Others ('000 ha)	4.9
Legumes ('000 ha)	379.4
Tubers ('000 ha)	92.5
Cash Crops ('000 ha)	60.6
Oil seeds ('000 ha)	214.2
Spices ('000 ha)	40.7
Vegetables ('000 ha)	60.0
Number of Holdings with permanent crops ('000)	**1,356.0**
Total Irrigated Area ('000 ha)	**1,168.3**

Livestock and Poultry

Category	No. of Holdings ('000)	No. of Head ('000)
Cattle	2,297.4	7,215.2
Chauri	14.2	95.4
Buffaloes	1,586.8	3,477.7
Goats	1,686.4	6,932.9
Sheep	67.7	471.2
Pigs	327.8	632.6
Chicken	1,594.4	17,631.3
Ducks	110.1	393.1

Household number in 2001 Census ('000)	**42,532.2**
Total farm population ('000)	**19,032.5**
- Male	9,385.8
- Female	9646.7
- Sex Ratio	97
Economically active population (10 years old and over)	**9,968.3**

CHAPTER 1
BACKGROUND

1.1 Land area

Nepal is a landlocked country bounded on the north by China and on the south, east and west by India. Ecologically, the country is divided into three belts, namely: Mountain belt, Hill belt and Tarai belt, running east to west with a non-uniform width from north to south. Mountain belt covers mountainous areas of the country and lies in the north. The altitude ranges between 4,899 meters to 8,848 meters above sea level. Some parts of the belt are covered with snow all year round including the highest peak of the world, the Mount Everest. The Hill belt is located in between the Mountain and Tarai belts. The belt has a fertile valley and basins such as Kathmandu and Pokhara. The belt on the southern part of the country is Tarai. Being an extension of the Gangetic plains of India, it has low flat land as well as dense forest. The country has a total land area of 147,181 square kilometers. Hill ecological belt shares 61,345 square kilometers of land, which is approximately 42% of the total land area. Mountain belt reported the second largest land area of about 36% while Tarai belt occupied the smallest area of 34,019 square kilometers or 23% of the total.

Administratively, the country is divided into 75 districts grouped into 5 development regions that cut across ecological belts. The Mountain belt constitutes 16 districts, 39 districts in the middle comprise the Hill belt and 20 districts compose the Tarai belt.

Among eco-development regions, Central Tarai reported the largest population of 3.9 million people comprising about 17% of

Development regions are made up of districts. Mid-Western development region got the biggest share of 43,378 square kilometers or about 28.8% of the total land area while Far- Western region reported the least with 19,539 square kilometers, which is about 13.3% of the total. Western, Eastern and Central development regions occupied almost the same area of about 29,000 square kilometers.

Five ecological-development regions also known as eco-development regions are formed within a belt. In the Mountain belt, Mid-Western Mountain got the biggest land area of 14.5% of the total, followed by Western Hill with 12.4%. Between 5% and 9% of the total land area was reported by the following: Mid-Western Hill (9.3%), Central Hill 8.0%), Eastern Hill (7.3%), Eastern Mountain (7.1%) and Central Tarai (6.3%). All the rest of the eco-development regions reported the land area to be less than 5% of the total with Far-Western Tarai reporting the least area of 3.3% of the total.

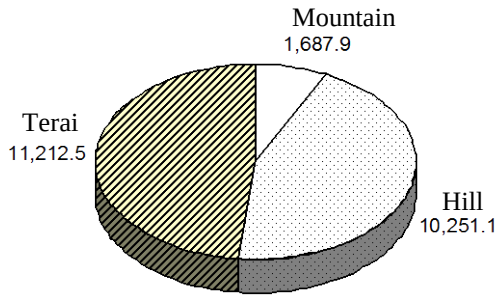
1.2 Population

The Population Census 2001 of Nepal recorded a total population count of 23,151,423 persons. About 48.43% of the total populations were found in Tarai belt and 44.28% were in Hill belt. Mountain belt reported a population of only 7.29% or about 1.688 million people.

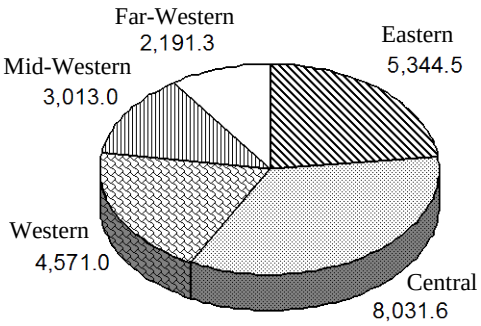
More than one-third (34.7%) of the total population was found in the Central region and only 9.5% were in Far-Western region.

the total population of Nepal. The second largest population was reported by Central Hill with 3.5 million or about 15.3%, see TABLE 1.1.

FIGURE 1.1: POPULATION DISTRIBUTION, 2001
('000)

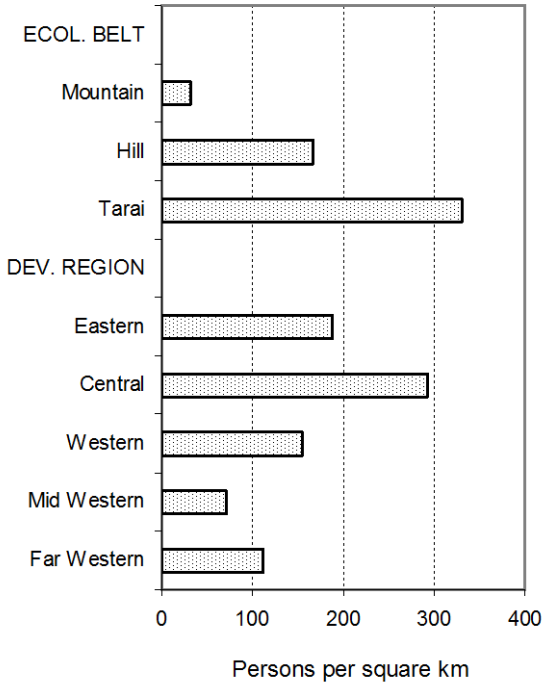


ECOLOGICAL BELTS



DEVELOPMENT REGION

FIGURE 1.2:
POPULATION DENSITY, 2001



1.3 Population density

While Tarai belt was reported to have the least territorial area among the ecological belts, it reported the highest density of population of 330 persons per square kilometer (sq. km.) in 2001. The average population density in Nepal was only 157 persons per sq. km. because of the low population density in the Mountain and Hill belts of 32 persons per sq. km. and 167 persons per sq. km., respectively.

1.4 Population growth

The geometric growth of the population of Nepal registered at an average annual rate of 2.27% per annum between 1991 and 2001. Tarai belt contributed mainly to the high population growth considering that Hill and Mountain belts grew only at the rate of 1.99% and 1.58% annually, respectively, for the same period of time.

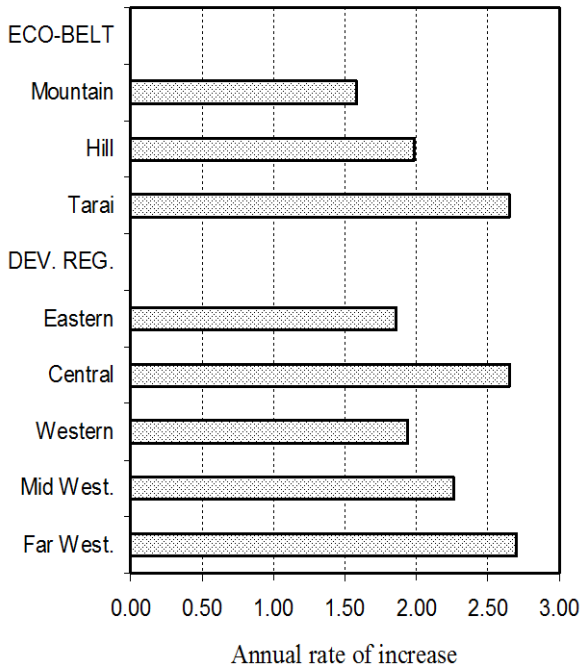
1.5 Usual activity of population 10 years old and over

Population 10 years old and over was composed of 16,770,279 or 72.4% of the total population of Nepal. This population age group is the potential supply of labour in the country. In the Population Census 2001, 9,110,336 persons were found to be economically active. These represents a participation rate of 54.3% of the total population 10 years old and over while those who are not economically active comprised 45.7%, see TABLE 1.2.

Among males, the participation rate was 64.9% while among females, the participation rate was very much lower at 43.9%.

Economically active population consists of persons who were usually employed or seeking work during the reference period. The proportion of economically active population to the total population 10 years

FIGURE 1.3:
POPULATION RATE OF GROWTH
1991 TO 2001



old and over multiplied by 100 is the labour force participation rate.

Persons who were not economically active are those who were doing household chores, full time students or no activity at all.

1.6 Employment rate

Total persons who were usually employed consisted of 8,940,107 out of a total of 9,110,336 economically active persons and this yielded an employment rate of 98.1%. On the other hand, only 1.9% of the economically active population was looking for work or considered unemployed.

While the labour force participation rate of the females was only 43.9%, their employment rate was much higher at 99.1% or an unemployment rate of only 0.9% compared with the employment rate of 97.5% among males with an unemployment rate of 2.5%. This trend indicates that when women decide to become economically active, they have better chances of being employed than the men since they have exhibited a lower unemployment rate.

1.7 Usual activity of employed persons

Agriculture or own farm work was reported by 5.146 million persons or about 57.6% of the total population who had jobs during the reference period; salary/wage workers numbered 2.189 million or 24.5%; about 968 thousand or 10.8% had their own economic enterprise while 635 thousand or 7.1% were engaged in extended economic activity.

Females comprised about 48% of those with employment and almost two-thirds of them were found in agriculture or in their own farms. Extended economic activity was reported by some 14% among the females; 12.2% had salary/wage employment and only 6.7% reported working in own economic enterprise.

The picture on the usual activity of males is a little different. Only about half (51.0%) of the employed males were in agriculture and about one-third (33.0%) had salary and/or wage work and 13.7% with economic enterprise. Only 2.2% among males reported extended economic activity.

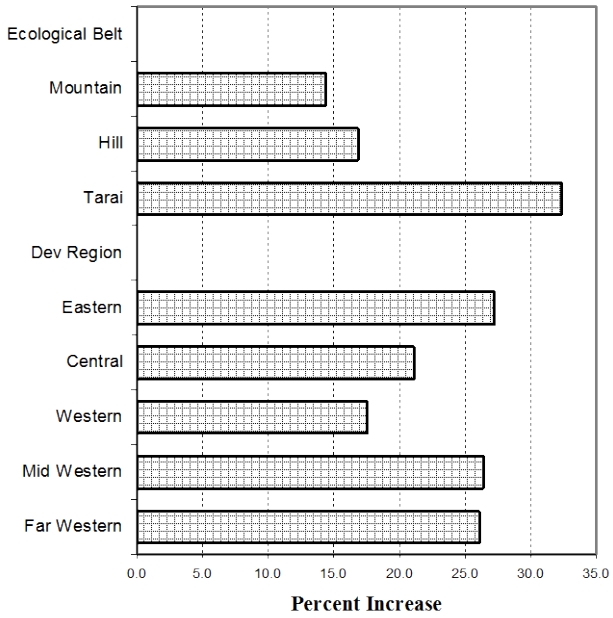
Although about half of the males and two thirds of the females were in agriculture, the males still dominated in number the agriculture work with 2.7 million out of 5.2 million workers in agriculture. The males also dominated the employment in salary/wage work (79.5%) and in own enterprise (74.6%). As expected, the females dominated the work on extended economic activity with 81.6%, see Table 1.3.

1.8 Number of households

The total number of households in Nepal in 2001 was 4,253,220. Hill ecological belt

reported the highest number of 1.982 million households comprising 46.6% of the total followed closely by Tarai belt with 1.95 million households, which was 45.9% of the total. The Mountain belt reported the lowest number with only 310 thousand or 7.5% of the total households in the country, see TABLE 1.1.

FIGURE 1.4: NUMBER OF AGRICULTURAL HOLDINGS INCREASE FROM 1991/92 TO 2001/02



1.9 Number of agricultural holdings

For purposes of the 2001/02 Agriculture Census of Nepal, an agricultural holding was defined as an economic unit of agricultural production under a single management comprising all livestock and all land used wholly or partly for agricultural production purposes. In Nepal, it is not uncommon that an agricultural holding is equivalent to a farm household.

There were 3.3641 million agricultural holdings identified from the listing operation done during the first phase in the conduct of the Population Census 2001. These holdings were found in the following ecological belts: Hill ecological belt reported a total of 1.5864 million agricultural holdings equivalent to 47.1% of the total holdings in the country; Tarai belt accounted for 1.4795 million agricultural holdings which consisted of 43.9% of the total; and, Mountain belt reported 298.2 thousand agricultural holdings consisting of only 8.8% of the total holdings in Nepal.

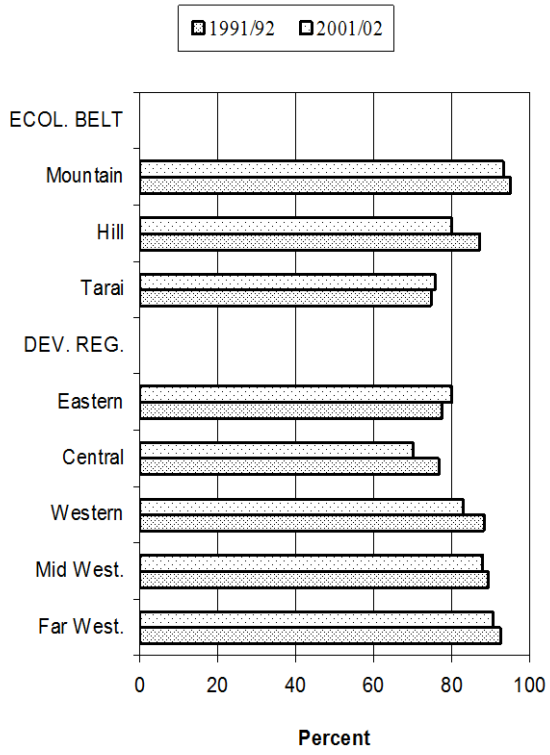
Among development regions, Central region reported a total of 1.098 million agricultural holdings, which is almost one-third of the total holdings in the country. The second largest region reporting agricultural holdings is Eastern region with about 850 thousand which is about one-fourth of all holdings in Nepal. Far Western region reported the least, which was about 10.8% of the total holdings.

In a span of ten years, the number of agricultural holdings increased by 22.8%, an average annual increase of 2.3% which is also almost the same rate of increase in the population.

There has been a decreasing proportion of households that operated agricultural holding between 1991/02 and 2001/02 in Nepal from 82.2% in 1991/92 to 79.1% in 2001/02. The decrease in the proportion of households operating an agricultural holding was felt most in the Hill ecological belt. In 1991/92 about 87.1% of the total households operated an agricultural holding but this proportion decreased to 80% in 2001/02, a decrease of 7.1 percentage points. There was also a decrease in the proportion of households who were operating an agricultural holding in the Mountain belt but only slightly when compared with the Hill belt, from 95.1% in 1991/92 to 93.2% in 2001/02. Tarai belt, however, did not experience such a decrease.

The proportion of households who operated an agricultural holding even increased slightly from 74.7% in 1991/92 to 75.8% in 2001/02.

FIGURE 1.5: HOLDINGS AS PERCENT OF HOUSEHOLDS 1991/02 AND 2001/02



The decreasing proportion of households operating an agricultural holding in Hill and Mountain belts may be attributed to urbanization and industrialization where more non-agricultural activities are available to the population.

1.10 Farm population

The Population Census 2001 of Nepal has put the farm population count at 19.0325 million people of which 46.6% were found in Tarai and 45.2% were in Hill.

Only 8.2% or about 1.6 million were residing in the Mountain ecological belt.

Among the development regions, Central region reported the biggest farm population at almost 6 million people followed by Eastern region and Western region with 4.3 million and 4.0 million, respectively.

Considering that a holding and a farm household are almost identical, it is therefore not far fetch to see that the proportion of the farm population in relation to the total population is also going down in urbanizing areas.

Between 1991/92 and 2001/02, there has been a decline in the proportion of the farm population to the total population in Nepal from 87.9% to 82.2%, see TABLE 1.6. The same trend is true for the three ecological belts, from 100% farm population in 1991/92 to 93% in 2001/02 for the Mountain; from 92% farm population in 1991/92 to 83.9% in 2001/02 for the Hill and from 81.9% farm population in 1991/92 to 79% in 2001/02 for Tarai belt, see TABLE 1.7.

The same pattern is observed among all the development regions with Central region registering the biggest change in proportion from 81.8% farm population in 1991/91 to 74.3% in 2001/02, see TABLE 1.8. Two urbanized cities are in this region, namely: Kathmandu and Lalitpur that may have contributed to the decrease in the farm population due to urbanization.

TABLE 1.1 TOTAL LAND AREA, NUMBER OF HOUSEHOLDS, POPULATION, POPULATION GROWTH, AND POPULATION DENSITY BY ECO-DEVELOPMENT REGION, NEPAL: 2001

Eco-development region	Total Land Area		Total Households		Household Population*		Growth Rate**	Density per sq. km.***
	Sq. Km	%	Number	%	Number	%		
NEPAL	147,181	100.00	4,253,220	100.00	23,151,423	100.00	2.27	157
MOUNTAIN	52,817	35.89	319,887	7.52	1,687,859	7.29	1.58	32
Eastern Mountain	10,438	7.09	77,197	1.82	401,587	1.73	1.12	38
Central Mountain	6,277	4.26	112,313	2.64	554,817	2.40	1.65	88
Western Mountain	5,819	3.95	5,019	0.12	24,568	0.11	2.23	4
Mid-western Mountain	21,351	14.51	55,363	1.30	309,084	1.34	1.72	14
Far Western Mountain	7,932	5.39	69,995	1.65	397,803	1.72	1.80	50
HILL	61,345	41.68	1,982,753	46.62	10,251,111	44.28	1.99	167
Eastern Hill	10,749	7.30	309,149	7.27	1,643,246	7.10	1.41	153
Central Hill	11,805	8.02	692,255	16.28	3,542,732	15.30	2.83	300
Western Hill	18,319	12.45	568,898	13.38	2,793,180	12.06	1.44	152
Mid-western Hill	13,710	9.32	269,614	6.34	1,473,022	6.36	1.91	107
Far Western Hill	6,762	4.59	142,837	3.36	798,931	3.45	1.76	118
TARAI	34,019	23.11	1,950,580	45.86	11,212,453	48.43	2.65	330
Eastern Tarai	7,269	4.94	626,622	14.73	3,299,643	14.25	2.18	454
Central Tarai	9,328	6.34	670,909	15.77	3,934,080	16.99	2.63	422
Western Tarai	5,260	3.57	289,128	6.80	1,753,265	7.57	2.80	333
Mid-western Tarai	7,317	4.97	209,333	4.92	1,230,869	5.32	2.84	168
Far Western Tarai	4,845	3.29	154,588	3.63	994,596	4.30	3.94	205
Eastern Dev. Region	28,456	19.33	1,012,968	23.82	5,344,476	23.08	1.86	188
Central Dev. Region	27,410	18.62	1,475,477	34.69	8,031,629	34.69	2.65	293
Western Dev Region	29,398	19.97	863,045	20.29	4,571,013	19.74	1.94	155
Mid-western Dev. Region	42,378	28.79	534,310	12.56	3,012,975	13.01	2.26	71
Far-western Dev. Region	19,539	13.28	367,420	8.64	2,191,330	9.47	2.70	112
NEPAL	147,181	100.00	4,253,220	100.00	23,151,423	100.00	2.27	157

*/Include independent estimates of the population for Village Development Committees and Wards that were not enumerated during the census, see National Report for specific districts involved.

**/Average geometric annual growth rate of the population between 1991 and 2001.

***/Population density per square kilometer.

Source of basic data: Population Census 2001 National Report, CBS.

TABLE 1.2 POPULATION 10 YEARS OLD AND OVER BY USUAL ACTIVITY STATUS DURING THE LAST TWELVE MONTHS BY SEX, NEPAL: 2001

Usual Activity	Total			Male			Female		
	Number	%	ER/ UR	Number	%	ER/ UR	Number	%	ER/ UR
NEPAL	16,770,279	100.0	...	8,330,576	100.0	...	8,439,703	100.0	...
Economically active population	9,110,336	54.3*	100.0	5,406,817	64.9*	100.0	3,703,521	43.9*	100.0
Usually with work	8,940,107	53.3	98.1	5,269,813	31.4	97.5	3,670,295	21.9	99.1
Usually unemployed	170,229	1.0	1.9	137,004	0.8	2.5	33,226	0.2	0.9
Not economically active population	7,659,943	45.7	...	2,923,760	17.4	...	4,736,183	28.2	...

Source of basic data: Table 23, Census of Population 2001, National Report, CBS.

LFPR = Labour force participation rate is the proportion of economically active population to total population 10 years old and over

ER = Employment Rate

UR = Unemployment rate

TABLE 1.3 USUAL ACTIVITY OF POPULATION WHO WERE USUALLY EMPLOYED DURING THE LAST TWELVE MONTHS BY SEX, NEPAL: 2001

Usual Activity	Both Sexes		Male			Female		
	Total	%	Number	%	% Male to Total	Number	%	% Female to Total
Total (Usually with work)	8,940,107	100.00	5,269,813	100.00	58.95	3,670,295	100.00	41.05
Agriculture/own farm	5,146,582	57.57	2,689,221	51.03	52.25	2,457,361	66.95	47.75
Salary/Wage	2,189,970	24.50	1,741,411	33.05	79.52	448,559	12.22	20.48
Own economic enterprise	968,080	10.83	722,137	13.70	74.59	245,944	6.70	25.41
Extended economic activity	635,475	7.11	117,044	2.22	18.42	518,431	14.13	81.58

Source of basic data: Table 23, Census of Population 2001, National Report, CBS.

TABLE 1.4 NUMBER OF AGRICULTURAL HOLDINGS BY SUB-ECOLOGICAL BELT, 2001/02

('000)

Development Region	Ecological Belt							
	Mountain	%	Hill	%	Tarai	%	Total	%
Eastern	71.3	23.9	282.8	17.8	455.9	30.8	851.8	25.3
Central	105.5	35.4	429.2	27.1	501.1	33.9	1,098.3	32.6
Western	4.2	1.4	485.2	30.6	226.5	15.3	747.8	22.2
Mid Western	50.2	16.8	253.9	16.0	165.4	11.2	502.4	14.9
Far Western	67.0	22.5	135.3	8.5	130.6	8.8	364.0	10.8
Total	298.2	100.0	1,586.4	100.0	1,479.5	100.0	3,364.1	100.0
% to total Holdings		8.8		47.1		43.9		100.0

TABLE 1.5 FARM POPULATION BY SUB-ECOLOGICAL BELT, 2001/02

('000)

Development Region	Ecological Belt							
	Mountain	%	Hill	%	Tarai	%	Total	%
Eastern	384.3	24.5	1558.1	18.1	2337.8	26.4	4280.2	22.5
Central	511.8	32.6	2394.7	27.8	3064.4	34.6	5970.9	31.4
Western	19.7	1.2	2482.5	28.9	1506.7	17.0	4009.0	21.1
Mid Western	274.4	17.5	1392.8	16.2	1047.3	11.8	2714.5	14.3
Far Western	379.5	24.2	773.3	9.0	905.0	10.2	2057.8	10.8
Total	1,569.8	100.0	8601.4	100.0	8,861.2	100.0	19032.5	100.0
% to total Holdings		8.2		45.2		46.6		100.0

TABLE 1.6 CHARACTERISTICS OF POPULATION AND HOLDINGS, NEPAL, 1961/62 TO 2001/02

Classification	1961/62	1971/72	1981/82	1991/92	2001/02
Total population (a)					
No. of persons ('000)	9,413.0	11,556.0	15,022.8	18,491.1	23,151.4
No. of households ('000)	2,588.9	2,084.1	2,585.2	3,328.7	4,253.2
Farm population (b)					
No. of persons ('000)	8,410.0	na	12,877.6	16,258.2	19,032.5
No. of holdings ('000)	1,540.0	1,721.2	2,194.0	2,736.1	3,364.1
Av. Household size	5.5	na	5.9	5.9	5.7
Farm population as % of total population	89.3	na	85.7	87.9	82.2
Holdings as % of all households	59.5	82.6	84.9	82.2	79.1

(a) Source: 1991 Population Census; Population Census 2001

(b) 1991/92 Census of Agriculture; 2001/02 Census of Agriculture

TABLE 1.7: CHARACTERISTICS OF POPULATION AND HOLDINGS BY ECOLOGICAL BELT, 1981/82, 1991/92 AND 2001/02

Classification	Ecological Belt			Nepal
	Mountain	Hill	Terai	
		1981/82		
Total population (a)				
No. of persons ('000)	1,302.9	7,163.1	6,556.8	15,022.8
No. of households ('000)	236.3	1,240.4	1,108.4	2,585.2
Farm population (b)				
No. of persons ('000)	1,097.5	6,022.6	5,757.6	12,877.6
No. of holdings ('000)	197.6	1,045.2	951.2	2,194.0
Av. Household size	5.6	5.8	6.1	5.9
Farm population as % of total population	84.2	84.1	87.8	85.7
Holdings as % of all households	83.6	84.3	85.8	84.9
		1991/92		
Total population (a)				
No. of persons ('000)	1,443.1	8,419.9	8,628.1	18,491.1
No. of households ('000)	274.1	1,558.5	1,496.1	3,328.7
Farm population (b)				
No. of persons ('000)	1,446.6	7,747.9	7,063.6	16,258.2
No. of holdings ('000)	260.7	1,357.7	1,117.6	2,736.1
Av. Household size	5.5	5.7	6.3	5.9
Farm population as % of total population (c)	100.0	92.0	81.9	87.9
Holdings as % of all households	95.1	87.1	74.7	82.2
		2001/02		
Total population (a)				
No. of persons ('000)	1,687.9	10,251.1	11,212.5	23,151.4
No. of households ('000)	319.9	1,982.8	1,950.6	4,253.2
Farm population (b)				
No. of persons ('000)	1,569.8	8,601.4	8,861.2	19,032.5
No. of holdings ('000)	298.2	1,586.4	1,479.5	3,364.1
Av. Household size	5.3	5.4	6.0	5.7
Farm population as % of total population	93.0	83.9	79.0	82.2
Holdings as % of all households	93.2	80.0	75.8	79.1

(a) Source: 2001 Population Census. (b) Source: 2001/02 Agricultural Census.
(c) Farm population from Agricultural Census estimated to be greater than total population from Population Census.

TABLE 1.8: CHARACTERISTICS OF POPULATION AND HOLDINGS BY DEVELOPMENT REGION, 1981/82 TO 2001/02

Classification	Development Region					Nepal
	Eastern	Central	Western	Mid West.	Far West.	
			1981/82			
Total population (a)						
No. of persons ('000)	3,708.9	4,909.4	3128.9	1,955.6	1,320.1	15,022.8
No. of households ('000)	651.8	854.5	544.3	322.3	212.2	2,585.2
Farm population (b)						
No. of persons ('000)	3,398.4	4,160.2	2,635.2	1,634.4	1,049.3	12,877.6
No. of holdings ('000)	578.3	706.4	453.3	276.7	179.2	2,194.0
Av. Household size	5.9	5.9	5.8	5.9	5.9	5.9
Farm population as % of total population	91.6	84.7	84.2	83.6	79.5	85.7
Holdings as % of all households	88.7	82.7	83.3	85.8	84.5	84.9
			1991/92			
Total population (a)						
No. of persons ('000)	4,446.7	6,184.0	3,770.7	2,410.4	1,679.3	18,491.1
No. of households ('000)	821.8	1,115.4	690.2	415.8	285.5	3,328.7
Farm population (b)						
No. of persons ('000)	3,712.8	5,061.0	3,618.0	2,242.7	1,623.8	16,258.2
No. of holdings ('000)	636.4	855.3	608.8	371.5	264.1	2,736.1
Av. Household size	5.8	5.9	5.9	6.0	6.1	5.9
Farm population as % of total population	83.5	81.8	96.0	93.0	96.7	87.9
Holdings as % of all households	77.4	76.7	88.2	89.3	92.5	82.2
			2001/02			
Total population (a)						
No. of persons ('000)	5,344.5	8,031.6	4,571.0	3,013.0	2,191.3	23,151.4
No. of households ('000)	1,013.0	1,475.5	863.0	534.3	367.4	4,253.2
Farm population (b)						
No. of persons ('000)	4,280.2	5,970.9	4,009.0	2,714.5	2,057.8	19,032.5
No. of holdings ('000)	810.0	1,035.8	715.8	469.5	333.0	3,364.1
Av. Household size	5.3	5.8	5.6	5.8	6.2	5.7
Farm population as % of total population	80.1	74.3	87.7	90.1	93.9	82.2
Holdings as % of all households	80.0	70.2	82.9	87.9	90.6	79.1

(a) Source: 1991 Population Census; 2001 Population Census.

(b) Source: 1991/92 National Sample Census of Agriculture; 2001/02 Agricultural Census

CHAPTER 2
SIZE OF HOLDING

Agricultural Census 2001/02 revealed that there were 3,364.1 thousand agricultural holdings in Nepal. Of these 3,337.4 thousand holdings were with land area of 2,653.9 thousand hectares. A total of 26.7 thousand agricultural holdings were without land. Number of agricultural holding has been increasing in every successive agricultural census. Compared to 1961/62, number of agricultural holding increased by 11.8 percent in 1971/72. Likewise, the percentage increase in number of agricultural holdings in every succeeding decennial agricultural census thereafter is 27.5, 24.7 and 22.9 respectively.

Total area of land holdings has been increasing steadily. It has increased by 57.5 percent over 40 years, from 1,685.4 thousand hectares in 1961/62 to 2,653.9 thousand hectares in 2001/02. There was a big increase in the area of land holding between 1971/72 and 1981/82 censuses. The increase in area of land holding was about 49 percent during the period between these two censuses. However, the rate of increase slowed down thereafter. The increase in land area in 1991/92 was 5.4 percent compared to 1981/82. Between 1991/92 and 2001/02 censuses the increase was only 2.2 percent.

The number of agricultural holdings without land has decreased to 26.7 thousand in 2001/02 from 32.1 thousand in 1991/92.

Though there is a steady increase in the total land area of the holdings, the average area per holding which was 1.11 hectares in 1961/62 decreased to 0.80 hectares in 2001/02. The reduction in the average area per holding can be attributed to rapid increase in the number of holdings in the country.

Table 2.0 Summary Statistics

	Census year				
Classification	1961/62	1971/72	1981/82	1991/92	2001/2002
Total holdings (000)	1,540.0	1,721.2	2,194.0	2,736.1	3,364.1
Holdings with land (000)	1,518.0	1,707.3	2,185.7	2,703.9	3,337.4
% of holding with land	98.6	99.2	99.6	98.8	99.2
Holdings with no land (000)	22.0	13.9	8.2	32.1	26.7
% of holding with no land	1.4	0.8	0.4	1.2	0.8
Holdings with land:					
Area of holdings (000)	1,685.4	1,654.0	2,463.7	2,597.4	2,653.9
% Increase/decrease		-1.9	48.9	5.4	2.2
Average holding size (ha.)	1.11	0.97	1.13	0.96	0.80
% Increase/decrease		-12.6	16.5	-15.0	-17.2

2.1 Land holdings

There were 3.3641 million agricultural holdings in Nepal with a total land area of 2.6539 million hectares. There are two types of holdings: agricultural holdings that use land in their farming operations and agricultural holdings that did not require the use of land in their operations, most of which were engaged in the raising of livestock and poultry.

The number of agricultural holdings with land has been proportionally increasing since 1961/62 but in 1981/82 and 1991/92 there was a slight decrease in the proportion from 99.6% to 98.8%. However, there was a slight increase in the proportion of holdings with land to 99.2% in 2001/02.

The slight increase in the proportion of holdings with land had resulted to the decrease in the actual number of holdings without land between 1991/92 and 2001/02 from 32.1 thousand to 26.7 thousand holdings, see TABLE 2.1

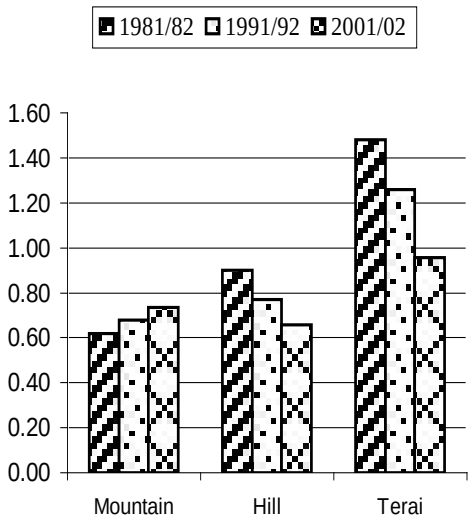
While land in general is a fixed capital asset, it is observed that the total land area of holdings in Nepal has been steadily increasing since 40 years ago from 1.685 million hectares in 1961/62 to 2.6539 million hectares in 2001/02. The increase involved almost a million hectares (968.5 thousand hectares) which is about 57.5% in 40 years or a yearly average increase of 1.44%.

The big increase in the area of land holdings occurred between 1971/72 and 1981/82 where 49% of the total land area of the holdings increased in a span of 10 years.

However, between 1981/82 and 1991/92, the increase went down to only 5.4% in a period of 10 years and the increase further went down to only 2.2% between 1991/92 and 2001/02.

The total number of holdings operated by female holders in 2001/02 was 271.51 thousand or 8.1% of the total holdings in Nepal with an area of about 144 thousand hectares.

FIGURE 2.1: AVERAGE SIZE OF HOLDINGS, ECOLOGICAL BELTS



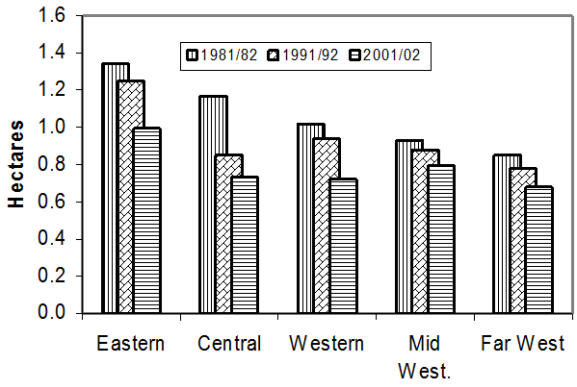
Of the total holdings operated by females, 269 thousand or 99.1% are with land. The male holders reported a slightly higher proportion of 99.2% or 3.068 million holdings with land with a total area of 2.51 million hectares. The area of the holdings with no land is almost nil, see TABLE 2.4a.

2.2 Average size of holding

Despite the steady increase in the total land area of the holdings, the average area per holding has been decreasing from 1.11 hectares in 1961/62 to 0.80 hectare in 2001/02. This is expected because the increase in the number of agricultural holdings was faster than the increase in the total area of all holdings in the country

By ecological belt, the total number of holdings with land is generally increasing although proportionally, the holding with

FIGURE 2.2: AVERAGE SIZE OF HOLDINGS, DEVELOPMENT REGIONS



land in the Mountain belt area remained at 99.7% in both census years 1991/92 and 2001/02.

Holdings in Tarai belt reported the largest average of 1.48 hectares in 1981/82 but because of the decreasing trend it is only 0.96 hectare in 2001/02.

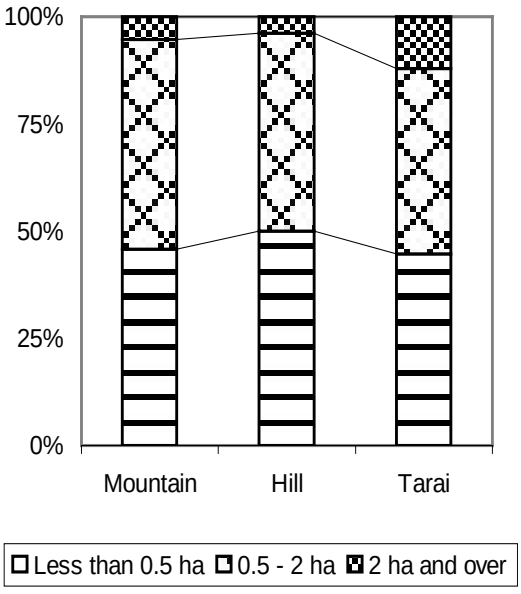
In fact the average area per holding in both Hill and Tarai belts continued to decrease throughout the four census periods. This is not the case of the holdings with land in Mountain belt. Since 1981/82, the average size of the holding in Mountain belt has been increasing from 0.62 hectare to 0.68 hectare in 1991/92 to 0.74 hectare in 2001/02. The slow but steady increase in the average size of the holding in Mountain belt has already surpassed the level of the average size of the holding in Hill belt of 0.66 hectare in 2001/02, from 0.90 hectare in 1981/82. The decreasing size of the holding in Hill belt may not be due only to the increasing number of holders but also to the decreasing land area available for agriculture due to urbanization. This is borne by the fact that there was decrease in the total land area of the holdings in Hill belt between 1991/92 and 2001/02 from 1.0462 million hectares to 1.0386 million hectares in 2001/02, a decrease of 7.3%.

For female holders, the average size of the holding reported in 2001/02 was only 0.53 compared with the average size of the holding of the male holders at 0.82 hectare. This wide gap in the average size of the holding between the male and the female holders may imply the disadvantage position of the female holder as the head of the household.

2.3 Farm size distribution

Of the 3.337 million holdings, about 260.5 thousand or 7.8% of the total reported their farm area to be less than one-tenth of a hectare, see TABLE 2.4. On the other hand, almost the same number (254.2 thousand) or about 7.5% of the total reported their farm size as at least 2 hectares.

FIGURE 2.3: SIZE DISTRIBUTION OF HOLDINGS, ECOLOGICAL BELTS, 2001/02



The farm sizes in Nepal are getting smaller. Almost three-fourths (74.7%) of the holdings reported less than a hectare in area in 2001/02 compared with 69.5% in 1991/92, and 66.6% in 1981/82, see TABLE 2.5.

By ecological belt, the above chart shows that Tarai reported the most number of holdings with at least 2 hectares (12.1%)

compared with only 5.5% for the Mountain holdings and 3.8% for the Hill belt holdings.

However, for less than one-tenth of a hectare, Tarai belt reported the most number of holdings (10.8%) compared with only 3.2% among Mountain holdings and 5.9% among Hill belt holdings.

FIGURE 2.4:
SIZE DISTRIBUTION OF HOLDINGS, DEVELOPMENT REGIONS, 2001/02

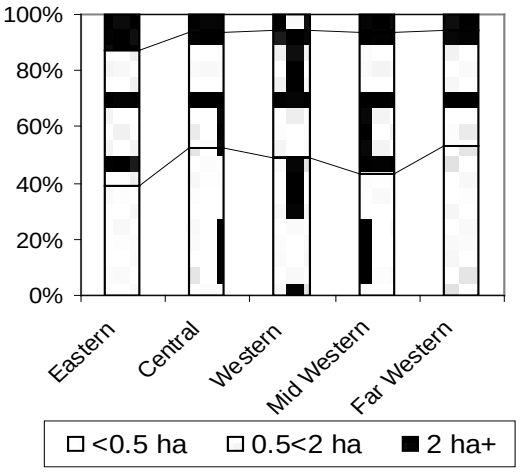


Figure 2.4 below depicts the size distribution of farm holdings in the five development regions of Nepal.

The Eastern region reported the highest proportion of holdings with at least 2 hectares in area (12.5%) followed by Central region and Mid Western region at 6.7% and 6.3% respectively. Western region and Far Western region almost have the same proportion, 5.5% and 5.4% respectively.

However, for holdings with less than one-tenth of a hectare, Eastern region reported the highest incidence of 9.4% followed closely by Central region with 8.9%. The other three regions reported less than the national figure of 7.8%.

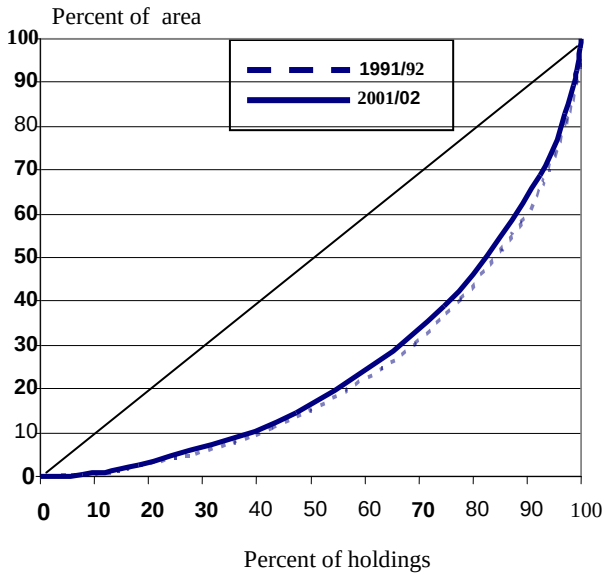
For female holders, the distribution of the size of holding shows that 62.6% reported less than 0.5 hectare compared with only 46% among the male holders with half a hectare holding. In fact, only very few among the female holders operated at least 10 hectares, but not reflected in the percentage distribution the frequency was less than 0.1%, see TABLE 2.4a.

2.4 Land distribution

The spatial distribution of land may be analyzed through the Lorenz curve and the value of the concentration index.

The Lorenz curve is a 100 x 100 graph with area equal to 10,000 units. The x axis represents the cumulative decile distribution of the area of land and the y axis represents the cumulative decile distribution of the number of holdings. If the cumulative area of the holding reported corresponds to the cumulative total number of holdings, and when plotted, the graph produces a diagonal straight line. If this is so, then we can say that there is equitable distribution of land. However, if the plotted line of the area and the number of holdings is far from the line of equity, which is the diagonal line, the value of the concentration index will help in the interpretation of the disparity in the distribution. The concentration index is the area between the Lorenz curve and the diagonal as a proportion of the total area under the diagonal. The higher the concentration index the less equitable is the land distribution.

FIGURE 2.5
LAND DISTRIBUTION, NEPAL
1991/92 AND 2001/02



The concentration index for Nepal slightly went down from 0.52 in 1991/92 to 0.49. We cannot say, however, that there was improvement in the distribution of land. Unlike between 1981/82 and 1991/92, there was a big decline from 0.65 to 0.52.

By ecological belt, a decrease in the concentration index for the three belts was observed but the decline can be said to be insignificant.

In other words, the equitable distribution of land in these three belts has not significantly improved.

Among the three belts, Tarai exhibited a concentration index of 0.53 in 2001/02 from an index of 0.54 in 1991/02. This high index can be attributed to the big share of holdings with 4 hectares and over occupying 17.1% of the total area of the holdings in Tarai compared with only 4.4% of the area shared by holdings with at least 4 hectares in Mountain belt and 3.4% of the area occupied by holdings with 4 hectares and over in Hill belt.

The situation is a little different when we look at the land distribution among the development regions. The concentration index of Central Region remained at 0.51 this means that there was no change in the land distribution among the holdings in this region.

Some improvements in the land distribution were noted in the other regions through the decrease in the concentration indexes between 1991/92 and 2001/02, as follows: Far Western Region, from 0.54 to 0.47; Mid Western Region from 0.51 to 0.45; Western Region from 0.49 to 0.45, and Eastern Region from 0.52 to 0.49.

TABLE 2.8 shows the distribution of the number of holdings, area and average farm area by development region and districts.

TABLE 2.1: NUMBER AND AREA OF HOLDINGS, NEPAL, 1961/62 TO 2001/02

(In thousand except Percent)

Category	1961/62	1971/72	1981/82	1991/92	2001/02
Total Holdings	1,540.0	1,721.2	2,194.0	2,736.1	3,364.1
Holdings with no land	22.0	13.9	8.2	32.1	26.7
Female holder	...	...	...	...	2.5
Male holder	...	...	...	...	24.2
Holdings with land	1,518.0	1,707.3	2,185.7	2,703.9	3,337.4
Female holder	...	...	...	...	269.0
Male holder	...	...	...	...	3,068.4
%Land holdings to total	98.6	99.2	99.6	98.8	99.2
Female holder	...	...	...	...	8.0
Male holder	...	...	...	...	91.2
Area of land holdings ('000 ha)	1,685.4	1,654.0	2,463.7	2,597.4	2,653.9
Female holder	...	...	...	...	143.8
Male holder	...	...	...	...	2,654.1
Average land holding size (ha)	1.11	0.97	1.13	0.96	0.80
Female holder	...	...	...	...	.0.53
Male holder	...	...	...	...	0.82

TABLE 2.2: NUMBER AND AREA OF HOLDINGS BY ECOLOGICAL BELT, 1981/82, 1991/92 AND 2001/02

(In thousand except Percent)

Classification	Ecological Belt			Nepal
	Mountain	Hill	Terai	
		1981/82		
Total Holdings	197.6	1,045.2	951.2	2,194.0
Holdings with land	197.1	1,041.9	946.8	2,185.7
Holdings with no land	0.5	3.3	4.4	8.2
Area of land holdings ('000 ha)	122.6	939.7	1,401.4	2,463.7
Average land holding size (ha)	0.62	0.90	1.48	1.13
		1991/92		
Total Holdings	260.7	1,357.7	1,117.6	2,736.1
Holdings with land	259.9	1,351.3	1,092.8	2,703.9
Holdings with no land	0.8	6.4	24.9	32.1
Area of land holdings ('000 ha)	176.8	1,046.2	1,374.3	2,597.4
Average holding size (ha)	0.68	0.77	1.26	0.96
		2001/02		
Total Holdings	298.2	1,586.4	1,479.5	3,364.1
Holdings with land	297.2	1,581.4	1,458.8	3,337.4
Holdings with no land	1.0	5.0	20.7	26.7
Area of holdings ('000 ha)	218.7	1,038.6	1,396.6	2,653.9
Average holding size (ha)	0.74	0.66	0.96	0.80

TABLE 2.3: NUMBER AND AREA OF HOLDINGS BY DEVELOPMENT REGION, 1981/82, 1991/92 AND 2001/02

(In thousand except Percent)

Classification	Development region					Nepal
	Eastern	Central	Western	Mid West.	Far West	
			1981/82			
Total Holdings	578.3	706.4	453.3	276.7	179.2	2,194.0
Holdings with land	576.2	705.9	452.7	276.6	174.3	2,185.7
Holdings with no land	2.0	0.5	0.6	0.1	4.9	8.2
%Land holdings to total	99.6	99.9	99.9	99.96	97.3	99.6
Area of land holdings ('000 ha)	771.0	823.3	463.6	258.2	147.6	2,463.7
Average land holding size (ha)	1.34	1.17	1.02	0.93	0.85	1.13
			1991/92			
Total Holdings	636.4	855.3	608.8	371.5	264.1	2,736.1
Holdings with land	628.5	843.7	603.3	368.3	260.1	2,703.9
Holdings with no land	7.8	11.6	5.5	3.1	4.0	32.1
%Land holdings to total	98.8	98.6	99.1	99.1	98.5	98.8
Area of land holdings ('000 ha)	783.2	719.7	566.4	324.7	203.3	2,597.4
Average land holding size (ha)	1.25	0.85	0.94	0.88	0.78	0.96
			2001/02			
Total Holdings	810.0	1,035.8	715.8	469.5	333.0	3,364.1
Holdings with land	799.7	1,026.9	711.7	467.4	331.7	3,337.4
Holdings with no land	10.3	8.9	4.1	2.1	1.3	26.7
%Land holdings to total	98.7	99.1	99.4	99.6	99.6	99.2
Area of holdings ('000 ha)	795.5	750.2	512.1	370.7	225.4	2,653.9
Average holding size (ha)	0.99	0.73	0.72	0.79	0.68	0.80

TABLE 2.4: NUMBER AND AREA OF LAND HOLDINGS BY SIZE OF HOLDINGS, NEPAL, 2001/02

Size of holding	Holdings			Area of holdings		
	Number ('000)	Percent	Cumulative percent	Area ('000 ha)	Percent	Cumulative percent
Under 0.1 ha	260.5	7.8	7.8	13.2	0.5	0.5
0.1 ha and under 0.2 ha	346.1	10.4	18.2	49.9	1.9	2.4
0.2 ha and under 0.5 ha	972.3	29.1	47.3	327.1	12.3	14.7
0.5 ha and under 1 ha	915.7	27.4	74.7	641.7	24.2	38.9
1 ha and under 2 ha	588.6	17.6	92.4	792.0	29.8	68.7
2 ha and under 3 ha	157.0	4.7	97.1	371.2	14.0	82.7
3 ha and under 4 ha	51.6	1.5	98.6	175.7	6.6	89.3
4 ha and under 5 ha	20.2	0.6	99.2	89.3	3.4	92.7
5 ha and under 10ha	21.6	0.6	99.9	139.8	5.3	98.0
10ha and over	3.8	0.1	100.0	54.2	2.0	100.0
Total land holdings	3,337.4	100.0	100.0	2,653.9	100.0	100.0

TABLE 2.4a.: NUMBER AND AREA OF HOLDINGS BY TYPE AND SIZE AND BY SEX OF HOLDER, NEPAL 2001/02

Type of holding by size	No. of Holdings ('000)	%	% with Land	Cum. % with land	Area of holdings ('000 ha)	%	% with Land	Cum. % with land
				All holders				
Holdings without land	26.7	0.8			0.1	a/		
Holdings with land	3337.4	99.2	100.0		2653.9	100.00	100.00	
Under 0.1 ha	260.5	7.7	7.8	7.8	13.2	0.50	0.50	0.50
0.1 ha and under 0.2 ha	346.1	10.3	10.4	18.2	49.9	1.88	1.88	2.38
0.2 ha and under 0.5 ha	972.3	28.9	29.1	47.3	327.1	12.32	12.32	14.70
0.5 ha and under 1 ha	915.7	27.2	27.4	74.7	641.7	24.18	24.18	38.88
1 ha and under 2 ha	588.6	17.5	17.6	92.4	792	29.84	29.84	68.72
2 ha and under 3 ha	157	4.7	4.7	97.1	371.2	13.99	13.99	82.71
3 ha and under 4 ha	51.6	1.5	1.5	98.6	175.7	6.62	6.62	89.33
4 ha and under 5 ha	20.2	0.6	0.6	99.2	89.3	3.36	3.36	92.69
5 ha and under 10ha	21.6	0.6	0.6	99.9	139.8	5.27	5.27	97.96
10ha and over	3.8	0.1	0.1	100.0	54.2	2.04	2.04	100.00
Total holdings	3,364.10	100.0			2,654.10	100.00		
				Female holders				
Holdings without land	2.51	0.9			0.01	0.01		
Holdings with land	269.00	99.1	100.0		143.76	99.99	100.00	
Under 0.1 ha	32.94	12.1	12.2	12.2	1.67	1.162	1.16	1.16
0.1 ha and under 0.2 ha	40.90	15.1	15.2	27.4	5.72	3.975	3.98	5.14
0.2 ha and under 0.5 ha	94.49	34.8	35.1	62.6	30.96	21.534	21.54	26.67
0.5 ha and under 1 ha	64.34	23.7	23.9	86.5	44.03	30.622	30.62	57.30
1 ha and under 2 ha	28.53	10.5	10.6	97.1	37.69	26.212	26.21	83.51
2 ha and under 3 ha	5.34	2.0	2.0	99.1	12.57	8.742	8.74	92.25
3 ha and under 4 ha	1.44	0.5	0.5	99.6	4.86	3.380	3.38	95.63
4 ha and under 5 ha	0.43	0.2	0.2	99.8	1.98	1.376	1.38	97.01
5 ha and under 10ha	0.58	0.2	0.2	100.0	4.08	2.839	2.84	99.85
10ha and over	0.02	a/	0.0	100.0	0.21	0.148	0.15	100.00
Total	271.51	100.0			143.77	100.00		
				Male holders				
Holdings without land	24.19	0.8			0.11	a/		
Holdings with land	3068.45	99.2	100.0		2510.16	100.00	100.00	
Under 0.1 ha	227.61	7.4	7.4	7.4	11.57	0.46	0.46	0.46
0.1 ha and under 0.2 ha	305.21	9.9	9.9	17.4	44.15	1.76	1.76	2.22
0.2 ha and under 0.5 ha	877.77	28.4	28.6	46.0	296.10	11.80	11.80	14.02
0.5 ha and under 1 ha	851.34	27.5	27.7	73.7	597.63	23.81	23.81	37.82
1 ha and under 2 ha	560.12	18.1	18.3	92.0	754.28	30.05	30.05	67.87
2 ha and under 3 ha	151.69	4.9	4.9	96.9	358.65	14.29	14.29	82.16
3 ha and under 4 ha	50.14	1.6	1.6	98.5	170.83	6.81	6.81	88.97
4 ha and under 5 ha	19.81	0.6	0.6	99.2	87.28	3.48	3.48	92.44
5 ha and under 10ha	21.00	0.7	0.7	99.9	135.67	5.40	5.40	97.85
10ha and over	3.76	0.1	0.1	100.0	53.99	2.15	2.15	100.00
Total	3092.63	100.0			2510.27	100.00		

TABLE 2.5: PERCENTAGE DISTRIBUTION OF NUMBER AND AREA OF LAND HOLDINGS BY SIZE OF HOLDING, NEPAL, 1961/62 TO 2001.02.

Size of holding (In hectares)	1961/62		1971/72		1981/82		1991/92		2001/02	
	Holdings	Area	Holdings	Area	Holdings	Area	Holdings	Area	Holdings	Area
Under 0.1							6.4	0.4	7.8	0.5
0.1 - 0.2	56.2	11.9	62.7	13.8	50.3	6.6	9.8	1.5	10.4	1.9
0.2 - 0.5							27.0	9.4	29.1	12.3
0.5 - 1.0	18.8	12.2	14.9	12.1	16.3	10.8	26.3	19.2	27.4	24.2
1.0 - 2.0	11.9	15.4	11.1	17.4	17.3	19.9	19.6	27.6	17.6	29.8
2.0 - 3.0	5.2	11.7	5.0	13.4	7.2	15.4	6.2	15.4	4.7	14.0
3.0 - 4.0	2.7	8.6	2.3	8.6	3.5	10.8	2.2	7.8	1.5	6.6
4.0 - 5.0	1.5	6.2	1.2	5.7	1.9	7.7	1.1	4.8	0.6	3.4
5.0 - 10.0	2.6	16.4	2.1	15.5	2.7	15.8	1.2	8.1	0.6	5.3
10.0 ha & over	1.0	17.7	0.7	13.7	0.7	13.1	0.3	5.8	0.1	2.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100	100
Concentration index (a)	...	0.64	...	0.63	...	0.65	...	0.52	...	0.49

(a) Explanation of concentration index may be seen on page 13.

TABLE 2.6: PERCENTAGE DISTRIBUTION OF NUMBER AND AREA OF LAND HOLDINGS BY SIZE OF HOLDING AND ECOLOGICAL BELT, 2001/02

Size of holding (In hectares)	Mountain		Hill		Tarai		Nepal	
	Holding	Area	Holding	Area	Holding	Area	Holding	Area
Under 0.1	3.2	0.2	5.9	0.5	10.8	0.6	7.8	0.5
0.1 ha and under 0.2	8.8	1.7	10.8	2.3	10.2	1.6	10.4	1.9
0.2 ha and under 0.5	33.8	15.4	33.4	17.0	23.6	8.4	29.1	12.3
0.5 ha and under 1	31.0	29.4	30.7	32.5	23.2	17.2	27.4	24.2
1 ha and under 2	17.8	32.2	15.4	30.8	20.1	28.8	17.6	29.8
2 ha and under 3	3.7	11.8	2.8	9.8	7.0	17.4	4.7	14.0
3 ha and under 4	1.1	4.9	0.7	3.8	2.5	9.0	1.5	6.6
4 ha and under 5	0.3	1.9	0.2	1.6	1.1	4.9	0.6	3.4
5 ha and under 10	0.2	1.5	0.1	1.2	1.3	8.9	0.6	5.3
10 ha and over	0.1	1.0	0.0	0.6	0.2	3.3	0.1	2.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Concentration index (2001/02)	…	0.42	…	0.42	…	0.53	…	0.49
Concentration index (1991/92)	…	0.45	…	0.43	…	0.54	…	0.52

TABLE 2.7: PERCENTAGE DISTRIBUTION OF NUMBER AND AREA OF LAND HOLDINGS BY SIZE OF HOLDING AND BY DEVELOPMENT REGION, 2001/02

Size of holding (Hectares)	Eastern		Central		Western		Mid Western		Far Western		Nepal	
	Holding	Area	Holding	Area	Holding	Area	Holding	Area	Holding	Area	Holding	Area
Under 0.1	9.4	0.5	8.9	0.6	6.3	0.4	5.6	0.4	6.9	0.5	7.8	0.5
0.1 ha and under 0.2	7.0	1.0	12.8	2.6	10.9	2.1	8.7	1.6	12.1	2.6	10.4	1.9
0.2 ha and under 0.5	22.5	7.7	30.8	14.1	32.0	15.0	29.0	12.5	33.9	16.4	29.1	12.3
0.5 ha and under 1	25.8	18.6	26.2	24.9	28.9	28.1	31.0	27.4	27.3	27.1	27.4	24.2
1 ha and under 2	22.7	31.6	14.7	26.8	16.5	30.6	19.5	32.6	14.4	27.5	17.6	29.8
2 ha and under 3	7.6	18.3	4.0	12.7	3.6	11.6	4.1	12.1	3.3	11.4	4.7	14.0
3 ha and under 4	2.7	9.4	1.3	6.2	1.1	5.1	1.1	4.5	1.1	5.4	1.5	6.6
4 ha and under 5	1.1	4.6	0.6	3.4	0.3	2.2	0.5	2.5	0.4	2.7	0.6	3.4
5 ha and under 10	1.0	6.5	0.7	6.2	0.4	3.8	0.4	3.3	0.5	4.4	0.6	5.3
10 ha and over	0.1	1.8	0.1	2.5	0.1	1.1	0.2	3.0	0.1	2.0	0.1	2.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Concentration index (2001/02)		0.49		0.51		0.45		0.45		0.47		0.49
Concentration index (1991/92)		0.52		0.51		0.49		0.51		0.54		0.52

TABLE 2.8: NUMBER AND AREA OF HOLDINGS BY DISTRICT, 2001/02

District	Number of Holdings ('000)	Land Holdings ('000)	Area of Holdings ('000 ha)	Average Holding Size (ha)
NEPAL	3,364.1	3,337.4	2,653.9	0.80
EASTERN MOUNTAIN	71.3	71.2	69.4	0.98
Taplejung	22.9	22.7	23.5	1.04
Sankhuwasabha	28.2	28.2	25.2	0.89
Solukhumbu	20.2	20.2	20.7	1.02
EASTERN HILL	282.8	282.1	256.6	0.91
Panchthar	34.1	34.1	28.2	0.83
Ilam	48.5	48.2	52.9	1.10
Dhankuta	28.4	28.3	24.8	0.88
Terhathum	19.3	19.3	19.4	1.01
Bhojpur	37.0	37.0	33.6	0.91
Okhaldunga	29.0	29.0	31.5	1.09
Khotang	41.4	41.4	33.7	0.81
Udayapur	45.1	44.9	32.5	0.72

Continuation....

TABLE 2.8: NUMBER AND AREA OF HOLDINGS BY DISTRICT: 2001/02

District	Number of Holdings ('000)	Land Holdings ('000)	Area of Holdings ('000 ha)	Average Holding Size (ha)
EASTERN TARAI	455.9	446.5	469.4	1.05
Jhapa	104.7	102.5	109.5	1.07
Morang	115.2	113.7	116.5	1.02
Sunsari	81.7	77.5	80.4	1.04
Saptari	75.5	74.4	77.8	1.05
Siraha	78.9	78.4	85.2	1.09
CENTRAL MOUNTAIN	105.5	105.2	67.8	0.64
Dolakha	40.4	40.2	27.4	0.68
Sindhupalchok	57.4	57.4	34.9	0.61
Rasuwa	7.7	7.7	5.4	0.71
CENTRAL HILL	429.2	428.2	237.0	0.55
Sindhuli	46.3	46.2	30.5	0.66
Ramechhap	38.8	38.8	32.4	0.84
Kavre	64.6	64.5	44.2	0.69
Lalitpur	32.6	32.5	10.0	0.31
Bhaktapur	25.7	25.7	6.0	0.23
Kathmandu	53.6	53.3	13.3	0.25
Nuwakot	49.8	49.7	30.5	0.61
Dhading	58.7	58.5	35.9	0.61
Makwanpur	59.1	59.0	34.3	0.58
CENTRAL TARAI	501.1	493.5	445.4	0.90
Dhanusha	87.5	86.0	76.8	0.89
Mahottari	72.6	71.3	67.9	0.95
Sarlahi	85.1	83.3	86.3	1.04
Rautahat	67.0	65.2	66.4	1.02
Bara	62.3	61.7	53.6	0.87
Parsa	55.2	54.6	52.4	0.96
Chitwan	71.4	71.4	42.1	0.59
WESTERN MOUNTAIN	4.2	4.1	2.4	0.57
Manang	1.5	1.5	1.1	0.77
Mustang	2.7	2.7	1.3	0.47
WESTERN HILL	485.2	483.2	302.8	0.63
Gorkha	54.6	54.6	32.9	0.60
Lamjung	31.9	31.8	19.1	0.60
Tanahu	54.2	53.8	29.3	0.55
Syangja	55.9	55.7	30.4	0.55
Kaski	51.8	51.3	22.8	0.44
Myagdi	21.5	21.5	13.2	0.61
Parbat	28.5	28.4	14.1	0.50
Baglung	48.7	48.6	33.0	0.68
Gulmi	54.4	54.3	41.4	0.76
Palpa	44.4	44.4	31.6	0.71
Arghakhanchi	39.1	38.7	34.9	0.90

Continuation....

TABLE 2.8: NUMBER AND AREA OF HOLDINGS BY DISTRICT: 2001/02

District	Number of Holdings ('000)	Land Holdings ('000)	Area of Holdings ('000 ha)	Average Holding Size (ha)
WESTERN TARAI	226.5	224.4	207.0	0.92
Nawalparasi	82.8	82.3	58.8	0.71
Rupandehi	86.3	85.0	77.3	0.91
Kapilbastu	57.3	57.1	70.9	1.24
MID WESTERN MOUNTAIN	50.2	49.8	38.8	0.78
Dolpa	5.4	5.3	2.5	0.47
Jumla	14.9	14.9	8.2	0.55
Kalikot	15.5	15.3	15.3	1.00
Mugu	7.6	7.6	6.5	0.85
Humla	6.8	6.8	6.4	0.94
MID WESTERN HILL	253.9	253.1	171.7	0.68
Pyuthan	37.9	37.8	26.6	0.70
Rolpa	36.8	36.6	30.2	0.82
Rukum	32.5	32.5	18.1	0.56
Salyan	35.9	35.9	29.5	0.82
Surkhet	48.3	48.3	27.6	0.57
Dailekh	38.8	38.5	23.0	0.60
Jajarkot	23.7	23.7	16.7	0.71
MID WESTERN TARAI	165.4	164.5	160.2	0.97
Dang	68.5	68.0	66.0	0.97
Banke	49.4	49.1	45.8	0.93
Bardiya	47.5	47.4	48.4	1.02
FAR WESTERN MOUNTAIN	67.0	66.9	40.3	0.60
Bajura	19.6	19.5	9.1	0.47
Bajhang	27.6	27.5	13.7	0.50
Darchula	19.9	19.8	17.5	0.88
FAR WESTERN HILL	135.3	134.9	70.6	0.52
Achham	42.4	42.3	18.6	0.44
Doti	33.3	33.0	17.7	0.54
Dadeldhura	20.6	20.6	12.2	0.59
Baitadi	39.0	38.9	22.0	0.57
FAR WESTERN TARAI	130.6	129.9	114.6	0.88
Kailali	77.1	76.9	67.8	0.88
Kanchanpur	53.6	53.1	46.7	0.88

CHAPTER 3
LAND FRAGMENTATION

For the purpose of the agricultural census, a parcel has been defined as a piece of land physically separated from other land in the same holdings. A parcel may consist of one or more adjacent fields. The total numbers of parcels was estimated to be 10,806.0 thousand in 1991/92 and 10,974.5 thousand in 2001/02, an increase of 1.61 percent in a period of 10 years.

Number of parcels in the country does not show a particular trend. It has been going up and down from census to census. However, in a span of 40 years, that is from the first agricultural census in 1961/62 to that of 2001/02, the number of parcels have increased from 10,318.2 thousand to 10,974.5 thousand parcels, an increase of 6.4 percent. The average size of parcel too has been changing erratically between censuses. The average parcel size was 0.16 hectares in 1961/62. It declined to 0.13 hectare in 1971/72 and then increased to 0.26 hectare in 1981/82. The average area of a parcel in 1991/92 was 0.24 hectares. It remained the same in 2001/02 also.

The average number of parcels per holding has been declining. There were 6.8 parcels per holding in 1961/62 which declined to 4.4 in 1981/82. In 1991/92 it further declined to 4.0 and finally to 3.3 in 2001/02.

The average holding size was 1.11 hectares in 1961/62. It decreased to 0.8 hectares in 2001/02.

Table 3.0 Summary Statistics

Description	1961/62	1971/72	1981/82	1991/92	2001/02
No. of holdings with land (‘000)	1,518.0	1,707.3	2,185.7	2,703.9	3,337.4
Area of holdings (‘000 ha)	1,685.4	1,654.0	2,463.7	2,597.4	2,653.9
Average holding size (ha)	1.11	0.97	1.13	0.96	0.80
Number of parcels (‘000)	10,318.2	12,282.5	9,516.4	10,806.2	10,974.5
Average parcels/holding	6.8	7.2	4.4	4.0	3.3
Average parcel size	0.16	0.13	0.26	0.24	0.24

3.1 Number of parcels

For agriculture census purposes, a parcel in an agricultural holding is any piece of land entirely surrounded by other land, water, road, forest, of other holdings, etc. not forming part of the holding. A parcel may consist of one or more adjacent fields. The census parcel should not be confused with the term "parcel" used in cadastral survey work.

In general, land holdings become smaller in area because of the breaking up of holdings through inheritance and other factors. In Nepal, the average size of the holding has been decreasing every census year since 1961/62 but the number of parcels did not really increase considerably from 10.806 million in 1991/92 to 10.974 million parcels in 2001/02, or an increase of only 1.6% in ten years. In fact in 1961/62 the total number of parcels was only 10.318 million, an increase of only 6.4% within 40 years. Fragmentation of parcels, therefore, in Nepal is not a problem because the average size of a parcel remained the same between 1991/92 and 2001/02 at 0.24 hectare or about 2400 square meters.

Of the 10.974 million parcels of land, 5.048 parcels or about 46% were located in the Hill ecological belt; 4.724 million or 43% were in Tarai and the rest (1.203 million) representing about 11% of the total were situated in the Mountain belt.

The fragmentation of holdings by sex of holder over time cannot be measured because the available data is only for 2001/02. In 2001/02, the female holders reported a total number of 746.8 thousand parcels of land, which is 6.8% of the total parcels reported for the country. By ecological belt, female holders reported the biggest number of parcels in Hill at 501.5 thousand or 9.9% of the total parcels in the area compared with only 172.3 thousand parcels or 3.6% of the parcels in Tarai and 73 thousand or 6.1% of the total parcels in the Mountain belt.

Among development regions, Central region reported the biggest number of parcels at 3.37 million or 31% of the total and Far Western region reported the least number of 1.1 million parcels or 10.2% of the total.

3.2 Parcel size

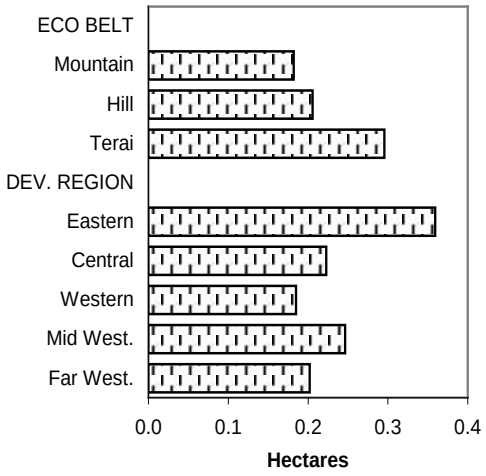
The average area of the parcel was 0.16 ha. in 1961/62, went up to 0.26 ha. in 1981/82 then reduced a little bit to 0.24 ha. in 1991/92. This average area of the parcel remained the same in 2001/02.

The small size of the parcel is understandable since farming in most part of Nepal is terrace type due to the topography of the land. This situation is reflected in the data for the ecological belts. The Mountain holdings registered the highest average number of parcel at 4 but yielded the lowest average size of 0.18 hectare or 1800 sq. m. compared with 0.21 hectare for Hill and 0.30 for Tarai belt, see Figure 3.1 below.

If we look at the parcel size of the female holding, on the national average, the area is 0.19 hectare or about 1900 square meters (sq.m.) compared with the national average parcel size for the male holding of 2500 sq.m., a female-male ratio of 76%. In other words, the average parcel size of the female holder is only three-fourths that of the size of the male holder see TABLE 3.2.

By ecological belt, the average parcel size of the female holding is a little bit smaller than the male holding in Mountain and Terai belts with a female-male ratio of 94.4% for Mountain and 93.3% for Tarai but for the Hill area, the female-male ratio was 81%.

FIGURE 3.1: AVERAGE PARCEL SIZE, 2001/02



Among development regions, Eastern region reported the largest parcel size of 0.36 hectare, which is even much higher than the national average size of 0.24 hectare followed by Mid Western region with 0.25 hectare, which is also higher than the national average. It is also interesting to note that the average parcel size of the female holding in Eastern region was reportedly the highest among female holders in Nepal at 0.31 hectare. For the same region, the male holding reported an average area of 0.36 hectare, which is also the highest average among all development regions, see TABLE 3.3.

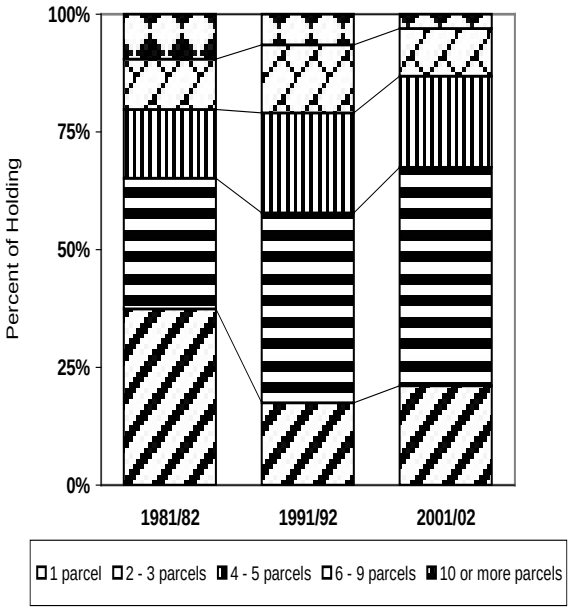
3.3 Parcels per holding

At the national level, the average number of parcels has been declining from 6.8 in 1961/62 to 4.4 in 1981/82 to 4.0 in 1991./92 and finally to 3.3 in 2001/02. The main reason for the decline in the average number of parcel was the decreasing size of the agricultural holding from 1.11 hectares in 1961/62 to 0.80 hectare in 2001/02.

Among the ecological belt, Mountain holdings reported the highest average number of parcel of 4 compared with 3.2 parcels each for Hill and Tarai holdings.

The average number of parcels per female holding is less (2.8) when compared to the male holding (3.3) with a female-male ratio of 85%. By ecological belt, the

FIGURE 3.2: NUMBER OF PARCELS PER HOLDING, NEPAL, 1981/82, 1991/91 AND 2001/02



female-male ratio of the average number of parcels is 90.6% in Hill, 82.9% in Mountain and only 66.7% in Tarai. It is in Tarai where the number of parcels per female holding is comparatively low with only two-thirds that of the male.

By development region, Western region reported the highest number of 3.9 parcels and Eastern region reported the lowest average of 2.8 parcels per holding, see TABLE 3.3. The same trend is true to both the female and male holdings where Western region reported the highest average and the Eastern region, the lowest.

3.4 Parcel number distribution

The distribution of the number of parcels for the different census years would show whether the number of parcels per holding is increasing or decreasing. The earliest available census data on the distribution of the number of parcels per holding is in 1981/82.

FIGURE 3.3: NUMBER OF PARCELS PER HOLDING, ECOLOGICAL BELTS, 2001/02

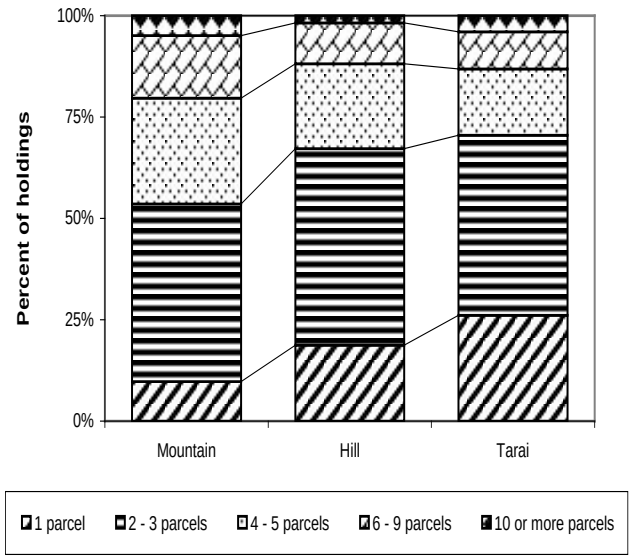
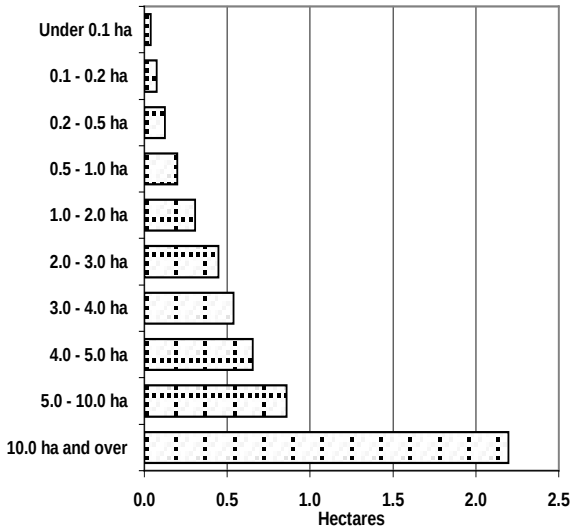


FIGURE 3.4: AVERAGE PARCEL SIZE BY SIZE OF HOLDING, NEPAL, 2001/02



For the three census years, it appears that the proportion of holding reporting 10 parcels or more in number has declined from 9.5% of the total holdings in 1981/82 to 6.5% of the total holdings in 1991/92 and only 3% of the total holdings in 2001/02. The actual number of holdings with this size also declined from 208.1 thousand in 1981/82 to 177 thousand in 1991/92, to 101.8 thousand in 2001/02.

Proportionally, there has also been a declining trend among holdings having 6 to 9 pieces of parcels of land comprising their holding, from 10.7% in 1981/82 to 14.5% in 1991/92 down to 10.2% in 2001/02. Again, there was also an actual decline in the number of holdings with 6 to 9 parcels between 1991/92 and 2001/02 from 392.5 thousand holdings to 339.0 thousand holdings, a decrease of 13.6% within a 10-year period.

The number of holdings reporting 2-3 parcels actually is on the rise from 27.8% of the total holdings in 1981/92 to 40.4% in 1991/992 and further went up to 46.3% in 2001/02. But there is an observed trend wherein the proportion of holdings with 4-5 parcels seems to be slightly decreasing between 1991/92 and 2001/02 from 21.1% to 19.3% although the actual number is still increasing from 571.2 thousand holdings to 645.3 holdings. The distribution of the number of parcels comprising the female and the male holdings follows the same direction as the national distribution.

Among ecological belts, Mountain holdings exhibited the highest percentage of holdings with at least 10 parcels of land at 4.9% of the total holdings in this belt although the actual number (14.5 thousand) is just half that of the Hill belt (28.8 thousand). Percentage-wise, it was only 1.8% of the total holdings in Hill belt, see TABLE 3.5.

Western region reported the biggest percentage of holdings reporting 10 or more parcels of land in 2001/02, which was 5.7% of the total. This is way above the national average of 3 parcels per holding.

On the other hand, Eastern region reported the lowest percentage of holdings comprising 10 or more parcels with only 1.7% of the total compared with Mid-Western region of 3.2% and Far-Western region of 2.6%. Central region reported second to the lowest percentage of 2.4%. It appears that as a whole, the more

mountainous the region is the higher is the average number of parcels.

Western region also reported the highest proportion of holdings with 6-9 parcels of land at 13.3% followed closely by Far-Western region with 13.1%. In actual number of holdings, however, Central region reported the highest with 100.8 thousand holdings against only 94.5 thousand holdings for Western region and 43.3 thousand holdings for Far-Western region, see TABLE 3.6.

3.5 Comparison of small and large holdings

At the national level, more than one-fifth (21.1%) or 705.5 thousand of the holdings reported having only one parcel of land comprising their holding. Of this number, 557.1 thousand or 79% was reported by holdings with an area of less than half a hectare while only 1.6% was reported by holdings with at least two hectares.

For 2 to 3 parcels, there were 46.3% or 1.546 million holdings reported as the number comprising their holding. Of this number, 766 thousand holdings or 49.6% belong to the holdings with less than half a hectare in area and only 4.9% or 75 thousand holdings belong to the large holdings with at least 2 hectares in area.

In essence, the smaller the area of the holding, the less number of parcels it contains. This relationship is depicted in TABLE 3.7 where, proportionally, 6 or more parcels of land were found in large holdings (37.8%) compared with only 4.5% for holdings with less than half a hectare and 17.3% with holdings from 0.5 hectare to less than 2 hectares.

The same trend is observed among female holdings where the small-sized holdings have less number of parcels than the bigger-sized holdings.

TABLE 3.8 is more revealing. As the size of the holding increases, the average number of parcels also increases. Correspondingly, the average size of the parcel also increases with the increase in the size of the holdings. It also shows that the average size of the parcels was less than a hectare even with holdings of 5 to less than 10 hectares. It is only among the very large holdings with at least 10 hectares that the average size of the parcel was reported at 2.2 hectares. This finding shows that landholdings in Nepal are composed of very small parcel sizes, thus landholding size is also small.

TABLE 3.1: AREA AND FRAGMENTATION OF HOLDINGS, NEPAL, 1961/62 TO 2001/0

(In thousand except Percent)

Category	1961/62	1971/72	1981/82	1991/92	2001/02	% to total 2001/02
No. of Holdings with no land	22.0	13.9	8.2	32.1	26.7	100.0
Female holder	…	…	…	…	2.5	9.4
Male holder	…	…	…	…	24.2	90.6
No. of holdings with land	1,518.0	1,707.3	2,185.7	2,703.9	3,337.4	100.0
Female holder	…	…	…	…	269.0	8.1
Male holder	…	…	…	…	3,080.3	92.3
Area of holdings (ha)	1,685.4	1,654.0	2,463.7	2,597.4	2,653.9	100.0
Female holder	…	...	…	…	143.8	5.4
Male holder	…	…	…	…	2,510.2	94.6
Number of parcels	10,318.2	12,282.5	9,516.4	10,806.2	10,974.5	100.0
Female holder	…	…	…	…	745.9	6.8
Male holder	…	…	…	…	10,228.6	93.2
Average holding size (ha)	1.11	0.97	1.13	0.96	0.80	
Female holder	…	…	…	…	0.53	
Male holder	…	…	…	…	0.82	
Average parcels/holding	6.8	7.2	4.4	4.0	3.3	
Female holder	…	…	…	…	2.8	
Male holder	…	…	…	…	3.3	
Average parcel size (ha)	0.16	0.13	0.26	0.24	0.24	
Female holder	…	…	…	…	0.19	
Male holder	…	…	…	…	0.25	

Note: Details may not add up to total due to rounding

TABLE 3.2: AREA AND FRAGMENTATION OF HOLDINGS BY ECOLOGICAL BELT, 2001/02

Category	Mountain	Hill	Terai	Nepal
No. of holdings with land ('000)	297.2	1,581.4	1,458.8	3,337.4
Female holder	21.3	171.1	77.5	269.0
Male holder	276.3	1,411.3	1,392.7	3,080.3
% female to total	7.2	10.8	5.3	8.1
Area of holdings ('000 ha)	218.7	1,038.6	1,396.6	2,653.9
Female holder	73.0	501.5	172.3	746.8
Male holder	206.4	955.7	1,348.2	2,510.3
% female to total area	33.4	48.3	12.3	28.1
Average holding size (ha)	0.74	0.66	0.96	0.80
Female holder	0.57	0.48	0.62	0.53
Male holder	0.75	0.68	0.96	0.81
Ratio of female to male ave. size in %	76.0	70.6	64.6	65.4
Number of parcels ('000)	1,202.9	5,047.6	4,724.0	10,974.5
Female holder	73.0	501.5	172.3	746.8
Male holder	1,130.2	4,547.2	4,563.2	10,240.6
% female to total parcels	6.1	9.9	3.6	6.8
Average parcels/holding	4.0	3.2	3.2	3.3
Female holder	3.4	2.9	2.2	2.8
Male holder	4.1	3.2	3.3	3.3
Ratio of female to male ave. parcel in %	82.9	90.6	66.7	84.8
Average parcel size (ha)	0.18	0.21	0.30	0.24
Female holder	0.17	0.17	0.28	0.19
Male holder	0.18	0.21	0.30	0.25
Ratio of female to male parcel size in %	94.4	81.0	93.3	76.0

Note: Details may not add up to total due to rounding.

Male and female holders include all holdings (with land and no land).

TABLE 3.3: AREA AND FRAGMENTATION OF HOLDINGS BY DEVELOPMENT REGIONS, BY SEX OF HOLDER, NEPAL, 2001/02

Category	Eastern	Central	Western	Mid West.	Far West.	Nepal
No. of holdings with land ('000)	799.7	1,026.9	711.7	467.4	331.7	3,337.4
Female holder	56.0	70.4	100.0	19.1	16.1	269.0
Male holder	754.1	965.4	615.8	440.5	316.9	3,068.4
% female to total number of holdings	7.0	6.9	14.1	4.1	4.9	8.1
Area of holdings ('000 ha)	795.5	750.2	512.1	370.7	225.4	2,653.9
Female holder	38.7	31.8	48.0	17.2	8.0	143.8
Male holder	756.8	718.4	464.1	353.5	217.4	2,510.2
% female to total area of holdings	4.9	4.2	9.4	4.6	3.5	5.4
Average holding size (ha)	0.99	0.73	0.72	0.79	0.68	0.80
Female holder	0.69	0.45	0.48	0.59	0.50	0.53
Male holder	1.00	0.74	0.75	0.80	0.69	0.81
Ratio of female to male ave. holding size in %	69.0	60.8	64.0	73.8	72.5	65.4
Number of parcels ('000)	2,213.3	3,368.4	2,771.7	1,504.9	1116.1	10,974.5
Female holder	123.6	181.4	312.4	79.7	49.7	746.8
Male holder	2,094.8	3,192.8	2,460.1	1,425.9	1067.0	10,240.6
% female to total number of parcels	5.6	5.4	11.3	5.3	4.5	6.8
Average parcels/holding	2.8	3.3	3.9	3.2	3.4	3.3
Female holder	2.2	2.6	3.1	2.7	3.1	2.8
Male holder	2.8	3.3	4.0	3.2	3.4	3.3
Ratio of female to male parcel number in %	78.6	78.8	77.5	84.4	91.2	84.8
Average parcel size (ha)	0.36	0.22	0.18	0.25	0.20	0.24
Female holder	0.31	0.18	0.15	0.22	0.16	0.19
Male holder	0.36	0.23	0.19	0.25	0.20	0.25
Ratio of female to male parcel size in %	86.1	78.3	78.9	88.0	80.0	76.0

Note: Details on female and male holders by development region may not add up to total due to the inclusion of holding with no land.

TABLE 3.4: NUMBER AND PERCENT OF LAND HOLDINGS BY NUMBER OF PARCELS AND BY SEX OF HOLDER, NEPAL, 1981/82, 1991/92 AND 2001/02

Number of parcels	No. of holdings ('000)			Percent of holdings		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
			All holdings			
1 parcel	817.0	471.3	705.5	37.4	17.4	21.1
2 - 3 parcels	607.0	1,092.0	1,545.8	27.8	40.4	46.3
4 - 5 parcels	319.3	571.2	645.3	14.6	21.1	19.3
6 - 9 parcels	234.3	392.5	339.0	10.7	14.5	10.2
10 or more parcels	208.1	177.0	101.8	9.5	6.5	3.0
Total land holdings	2,185.7	2,703.9	3,337.4	100.0	100.0	100.0
			Female holders			
1 parcel	…	…	76.7	…	…	28.5
2 - 3 parcels	…	…	128.1	…	…	47.6
4 - 5 parcels	…	…	40.0	…	…	14.9
6 - 9 parcels	…	…	20.1	…	…	7.5
10 or more parcels	…	…	4.0	…	…	1.5
Total land holdings	…	…	268.9	…	…	100.0
			Male holders			
1 parcel	…	…	628.8	…	…	20.5
2 - 3 parcels	…	…	1,417.8	…	…	46.2
4 - 5 parcels	…	…	605.4	…	…	19.7
6 - 9 parcels	…	…	319.0	…	…	10.4
10 or more parcels	…	…	97.7	…	…	3.2
Total land holdings	…	…	3,068.6	…	…	100.0

Note: Details may not add up to total due to rounding.

TABLE 3.5: NUMBER AND PERCENT OF LAND HOLDINGS BY NUMBER OF PARCELS AND ECOLOGICAL BELT, 2001/02

Number of parcels	Ecological Belt			
	Mountain	Hill	Tarai	Nepal
	Number of holdings ('000)			
1 parcel	28.9	295.7	380.8	705.5
2 - 3 parcels	130.2	767.3	648.3	1,545.8
4 - 5 parcels	77.6	330.3	237.4	645.3
6 - 9 parcels	46.0	159.3	133.7	339.0
10 or more parcels	14.5	28.8	58.5	101.8
Total land holdings	297.2	1,581.4	1,458.8	3,337.4
	Percent			
1 parcel	9.7	18.7	26.1	21.1
2 - 3 parcels	43.8	48.5	44.4	46.3
4 - 5 parcels	26.1	20.9	16.3	19.3
6 - 9 parcels	15.5	10.1	9.2	10.2
10 or more parcels	4.9	1.8	4.0	3.0
Total	100.0	100.0	100.0	100.0

TABLE 3.6: NUMBER AND PERCENT OF LAND HOLDINGS BY NUMBER OF PARCELS AND DEVELOPMENT REGION, 2001/02

Number of parcels	Ecological Belt					
	Eastern	Central	Western	Mid West.	Far West.	Nepal
	Number of holdings ('000)					
1 parcel	231.6	174.5	118.6	103.5	77.2	705.5
2 - 3 parcels	376.5	510.0	309.9	218.8	130.7	1,545.8
4 - 5 parcels	124.2	217.1	148.5	83.8	71.8	645.3
6 - 9 parcels	53.9	100.8	94.5	46.4	43.4	339.0
10 or more parcels	13.5	24.5	40.3	14.9	8.5	101.8
Total land holdings	799.7	1,026.9	711.7	467.4	331.7	3,337.4
	Percent					
1 parcel	29.0	17.0	16.7	22.1	23.3	21.1
2 - 3 parcels	47.1	49.7	43.5	46.8	39.4	46.3
4 - 5 parcels	15.5	21.1	20.9	17.9	21.6	19.3
6 - 9 parcels	6.7	9.8	13.3	9.9	13.1	10.2
10 or more parcels	1.7	2.4	5.7	3.2	2.6	3.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 3.7: NUMBER AND PERCENT OF LAND HOLDINGS BY NUMBER OF PARCELS, SIZE OF HOLDING AND SEX OF HOLDER, NEPAL, 2001/02

Number of parcels	Number of holdings ('000) by size							
	Less than 0.5 ha		0.5 - <2.0 ha		2.0 ha and over		Nepal	
	No.	%	No.	%	No.	%	No.	%
				All holdings				
1 parcel	557.1	35.3	137.4	9.1	11.0	4.3	705.5	21.1
2 - 3 parcels	766.0	48.5	704.8	46.9	75.0	29.5	1,545.8	46.3
4 - 5 parcels	185.6	11.8	387.9	25.8	71.9	28.3	645.3	19.3
6 - 9 parcels	62.5	4.0	215.6	14.3	60.9	23.9	339.0	10.2
10 or more parcels	7.7	0.5	58.6	3.9	35.4	13.9	101.8	3.0
Total land holdings	1,578.9	100.0	1,504.3	100.0	254.2	100.0	3,337.4	100.0
				Female holders				
1 parcel	65.6	39.0	10.7	11.5	0.4	5.2	76.7	28.5
2 - 3 parcels	78.4	46.6	46.7	50.3	3.0	39.0	128.1	47.6
4 - 5 parcels	17.5	10.4	21.0	22.6	1.5	19.5	40.0	14.9
6 - 9 parcels	6.1	3.6	11.9	12.8	2.1	27.3	20.1	7.5
10 or more parcels	0.7	0.4	2.6	2.8	0.7	9.1	4.0	1.5
Total land holdings	168.3	100.0	92.9	100.0	7.7	100.0	268.9	100.0
				Male holders				
1 parcel	491.5	34.8	126.7	9.0	10.6	4.3	628.8	20.5
2 - 3 parcels	687.6	48.7	658.1	46.6	72.0	29.2	1417.7	46.2
4 - 5 parcels	168.1	11.9	366.9	26.0	70.4	28.6	605.4	19.7
6 - 9 parcels	56.4	4.0	203.8	14.4	58.8	23.9	319.0	10.4
10 or more parcels	7.0	0.5	56.0	4.0	34.7	14.1	97.7	3.2
Total	1410.6	100.0	1411.5	100.0	246.4	100.0	3068.6	100.0

TABLE 3.8: NUMBER OF PARCELS BY SIZE OF LAND HOLDING, NEPAL, 2001/02

Size of Land Holding	Number of parcels ('000)	Percent of parcels	Number of holdings	Percent of holdings	Average parcels per holding	Average parcel size (ha)
			All holdings			
Under 0.1 ha	351.4	3.2	260.5	7.8	1.3	0.04
0.1 – <0.2 ha	674.3	6.1	346.1	10.4	1.9	0.07
0.2 – < 0.5 ha	2,637.8	24.0	972.3	29.1	2.7	0.12
0.5 - <1.0 ha	3,250.6	29.6	915.7	27.4	3.5	0.20
1.0 - <2.0 ha	2,580.4	23.5	588.6	17.6	4.4	0.31
2.0 - <3.0 ha	829.8	7.6	157.0	4.7	5.3	0.45
3.0 - <4.0 ha	326.2	3.0	51.6	1.5	6.3	0.54
4.0 - <5.0 ha	136.4	1.2	20.2	0.6	6.7	0.65
5.0 – <10.0 ha	162.8	1.5	21.6	0.6	7.5	0.86
10.0 ha and over	24.7	0.2	3.8	0.1	6.5	2.20
Total	10,974.5	100.0	3337.4	100.0	3.3	0.24
			Female holders			
Under 0.1 ha	44.1	5.9	32.9	12.2	1.3	0.04
0.1 – <0.2 ha	78.7	10.5	40.9	15.2	1.9	0.07
0.2 – < 0.5 ha	250.3	33.6	94.5	35.1	2.6	0.12
0.5 - <1.0 ha	214.3	28.7	64.3	23.9	3.3	0.21
1.0 - <2.0 ha	118.1	15.8	28.5	10.6	4.1	0.32
2.0 - <3.0 ha	26.4	3.5	5.3	2.0	5.0	0.48
3.0 - <4.0 ha	7.6	1.0	1.4	0.5	5.3	0.64
4.0 - <5.0 ha	2.0	0.3	0.4	0.2	4.6	1.00
5.0 – <10.0 ha	4.3	0.6	0.1	0.0	7.5	0.94
10.0 ha and over	0.1	0.0	0.0	0.0	4.0	2.59
Total	745.9	100.0	269.0	100.0	2.8	0.19
			Male holders			
Under 0.1 ha	307.3	10.0	227.6	7.4	1.4	0.04
0.1 – <0.2 ha	595.6	19.4	305.2	9.9	2.0	0.07
0.2 – < 0.5 ha	2387.5	77.8	877.8	28.6	2.7	0.12
0.5 - <1.0 ha	3036.3	99.0	851.3	27.7	3.6	0.20
1.0 - <2.0 ha	2462.3	80.2	560.1	18.3	4.4	0.31
2.0 - <3.0 ha	803.4	26.2	151.7	4.9	5.3	0.45
3.0 - <4.0 ha	318.6	10.4	50.1	1.6	6.4	0.54
4.0 - <5.0 ha	134.4	4.4	19.8	0.6	6.8	0.65
5.0 – <10.0 ha	158.5	5.2	21.0	0.7	7.5	0.86
10.0 ha and over	24.6	0.8	3.8	0.1	6.5	2.19

CHAPTER 4
LAND TENURE

Majority of agricultural holdings are operated by owners in Nepal. Out of the total 3,337.4 thousand land holdings in the country in 2001/02, 2,939.5 thousand (88.1%) holdings has only one form of tenure, i.e. either owned or rented from others or other form of tenure. Only 397.7 thousand (11.9%) holdings have more than one form of tenure, which may have some parcel owned and some parcels rented from others.

Of the total area of land holdings owned, 91.5 percent belongs to one form of tenure while 8.5 percent was part of the area under more than one form of tenure. The average size of holding under different types of tenure in 2001/02 is: one tenure form 0.76 hectares and more than one form of tenure 1.03 hectares.

The ownership of the holdings under one form of tenure is estimated to be 2,939.6 thousand in 2001/020. It is higher by 27.6 percent as compared to the previous census. But it has been observed that there was a decline in the number of holdings that rented from others by almost 25percent - from 47.1 thousand holdings in 1991/92 to 35.5 thousand holdings in 2001/02. Similarly the number of holdings with more than one form of tenure slightly decreased from 400.6 thousand holdings to 397.9 thousand holdings, a decrease of less than 1 percent between 1991/92 and 2001/02 agriculture censuses.

Table 4.0 Summary Statistics

Type of tenure	1991/92		2001/02	
	No. of holdings (‘000)	Area in ha. (‘000)	No. of holdings (‘000)	Area in ha. (‘000)
One tenure form	2,303.3	2,152.7	2,939.6	2,241.1
Owned	2,239.1	2,109.5	2,896.2	2,212.8
Rented from others	47.0	36.1	35.5	26.3
Others tenure form	17.3	7.1	7.9	2.0
More than one tenure form	400.6	444.7	397.9	412.9
Owned	-	252.6	-	204.5
Rented form others	-	185.1	-	204.2
Other tenure form	-	7.0	-	4.2

4.1Holdings by tenure

Land tenure refers to arrangements or rights under which the holder holds or uses the land of the holding. Land owned but rented out to others is not considered as part of the holding. A holding may be operated under one or more tenure forms, depending upon the tenure form of each parcel that comprises the holding.

In Nepal, while the average holding size is small, most of the holdings are owned. Of the 3.337 million land holdings, 88.1% has only one form of tenure, either owned, rented from others or other form of tenure. Only 11.9% of the holdings have more than one form of tenure, that is, one parcel may be owned and some parcels may be rented from others.

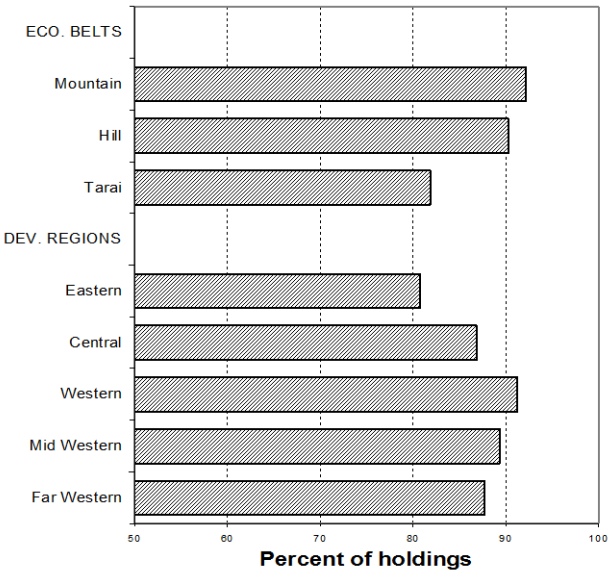
The female holder reported a higher proportion of holdings with only one form of tenure at 92.0% compared with 87.7% of the holdings among male holders.

Under one form of tenure, 98.5% of the holdings owned the land with an average size of 0.76 hectare. Holdings with purely rented land comprising 1.25% of the total reported an average size of 0.74 hectare while other forms of tenure, which can either be tribal or squatter land, consisting of only 0.3% reported 0.25 hectare as the average holding size.

The same tenure form patterns, however, were observed among female as well as male holders at 98.5% owned. The only difference was that the average size of holdings owned by female holders under one form of tenure was 0.52 hectare compared with 0.79 hectare for the holdings owned by the male holders. Also for the rented holdings under one form of tenure, the female holder reported a lower average of 0.47 hectare against 0.77 hectare for the male-rented holding. It is in the "Other" form of tenure where the average size for both the female and male holders was the same at 0.25 hectare, see TABLE 4.1.

Of the total area of landholdings owned, 91.5% belongs to one form of tenure while 8.5% was part of the area under more than one form of tenure. It was in the rented holdings where 88.6% of the total area were under more than one form of tenure. The same was true for the female holdings as well as the male holdings. Only the proportions differ a little bit like 93.9% of the owned area was in one form of tenure for the female holders and 91.4% for the male holders while 6.1% of the area was under more than one form of tenure for the female holders and 8.6% for the male holders. The composition of the male holding was almost the same as the national average.

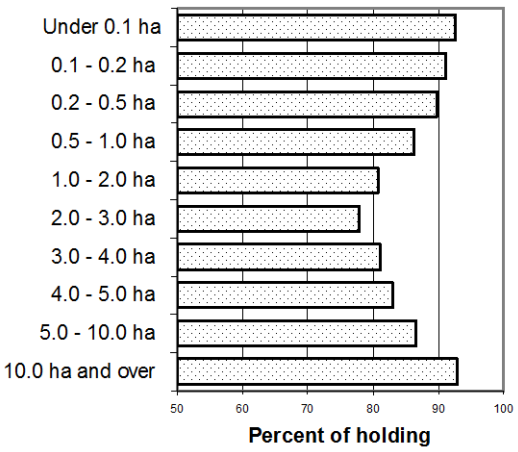
FIGURE 4.1: HOLDINGS WITH FULL OWNERSHIP OF LAND, 2001/02



4.2 Area by tenure of land

Ownership of the area of the holding among ecological belt showed that in Tarai, only 86.8% were owned compared with higher percentages of ownership in Mountain belt at 96.7% and Hill belt at 95.7%, see TABLE 4.2.

FIGURE 4.2: HOLDINGS WITH FULL OWNERSHIP OF LAND, SIZE OF HOLDING, NEPAL, 2001/02



It is significant to observe, however, that the female holders in Tarai reported a higher proportion of ownership of land than the male holders, 90.5% for female holders and 86.7% for the male holders. In Hill belt, the female holders also reported a little bit higher proportion of ownership of land than the male holders but in the Mountain belt, the male holders have higher ownership percentage than the female holders.

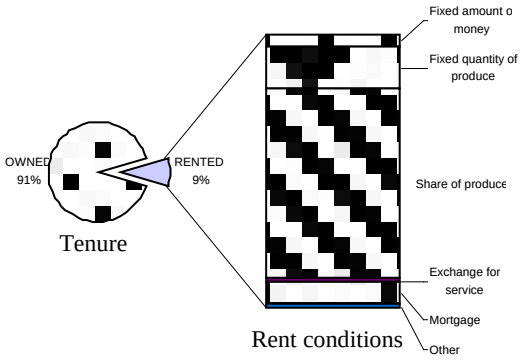
For rented land, generally, the male holders reported a higher proportion than the female holders.

The proportion of ownership of land in the five development regions was reported to be higher among the female holders than the male holders, the biggest differences were noted in Eastern and Mid-Western regions. About 91% of the female holders owned their holding compared with 85.6% among the male holders in Eastern region and about 96% of the female holders in Mid-Western region reported ownership of the land compared with only 90.3% ownership among male holders.

Like in the national pattern, the male holders reported higher proportions of rented land in all the development regions than the female holders, see TABLE 4.2.

Most holdings reported one form of tenure in all the ecological belts as well as the five development regions, the level of proportion varies not very much ranging from 83.7% in Eastern development region among the regions, and 83.9% in Tarai among the ecological belts to 91.7% in Western region and 92.6% in Mountain belt.

FIGURE 4.3: LAND TENURE, NEPAL, 2001/02
AREA OF LAND



Among the owned holdings under one form of tenure, the highest was reported also by Mountain ecological belt while Western region reported the highest proportion of ownership at 91.3% among the development regions, see TABLE 4.3

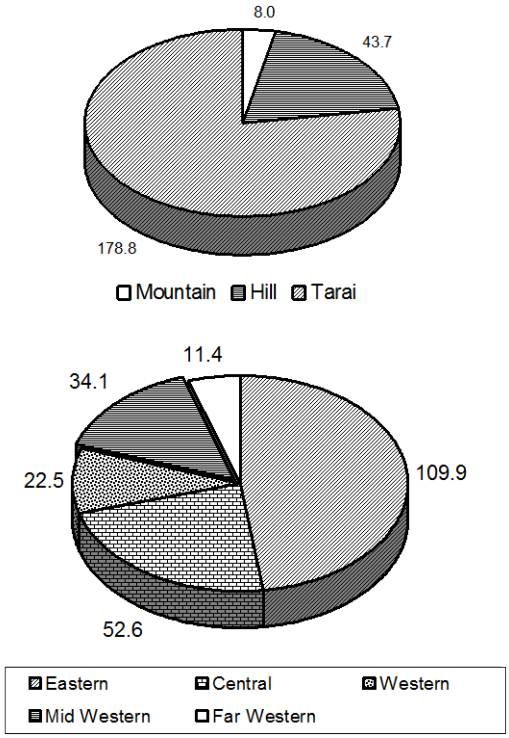
The distribution of the area of owned land by size of holdings showed that 29.2% of the owned land were found among the 1 to less than 2 hectares holding size. About 36.3% of the rented areas were also found in this holding size, see TABLE 4.4

As earlier mentioned Tarai reported the lowest proportion of ownership of land, therefore this is the belt where the incidence of tenancy is comparatively higher. In 1991/92, the proportion of holdings under more than one form of tenure was 19.2%. The figure in the 2001/02 agriculture census was 16.1%, a decrease of 3.1 percentage points. Some of these holdings and those rented holdings under one form of tenure are the tenanted

holdings either full tenants or part-owner/tenants.

There were 412.1 thousand holdings or about 12.3% of the total holdings in the country that were renting land in 2001/02. The rented land covered about 230.5 thousand hectares representing about 8.6% of the total area of land holdings in Nepal.

FIGURE 4.4: AREA OF RENTED LAND, NEPAL, 2001/02, ('000 ha)



4.3 Conditions of rent

In 1991/92 share cropping was the most common method of paying rent with 46. 5% of the holding reporting such method. Share cropping involved 56.5% or 125.1 thousand hectares of the total land area being rented at that time.

In 2001/02 the proportion of sharing their produce increased to 62.2% involving a rented area of 69% of the total area being rented, which was 159 thousand hectares. Rented land with sharing of produce had an average area of 0.62 hectare. The number of tenants sharing their produce seems to be increasing when compared to 1991/92 data while those paying a fixed amount of produce has decreased proportionally from 30.3% in 1991/92 to only 15.9% in 2001/02. Perhaps this is a better arrangement considering that it would be too risky on the part of the tenant to be paying a fixed amount of produce when no one can predict whether or not the conditions for growing crops would be better for the next cropping season.

Among the female holders, a total of 23.81 thousand had been renting land (16.6% of the total) out of a total of 143.8 female holdings. Of these renters, 57.9% of them shared also their produce as the condition of rent. The total area where they share their produce was 67.4% of the total area being rented by all female holders. The average area of the holding under sharing arrangement of produce was 0.40 hectare. The average area of rented holding for a fixed amount of money was only 0.16 hectare while the area for a fixed quantity of produce was 0.38 hectare.

The conditions of rent for the male holders follow that of the national average, see TABLE 4.6.

Of the 412.1 thousand holdings renting land 242.6 thousand or 58.9% were found in Tarai belt with 67.7% of them sharing their produce as a condition of rent. Mountain belt reported the least number of holdings renting land, only 22.2 thousand or 5.4% of the total but majority of them also share their produce as condition of their rent, see TABLE 4.7.

For the distribution of renters by development region, Eastern region reported the most number with 143.9 holdings or 34.9% of the total followed closely by Central region with 129.3 holdings or 31.4% of the total holding renting some land. Share of produce was the most common arrangement in renting

FIGURE 4.5: CONDITIONS OF RENT, ECOLOGICAL BELTS, 2001/02

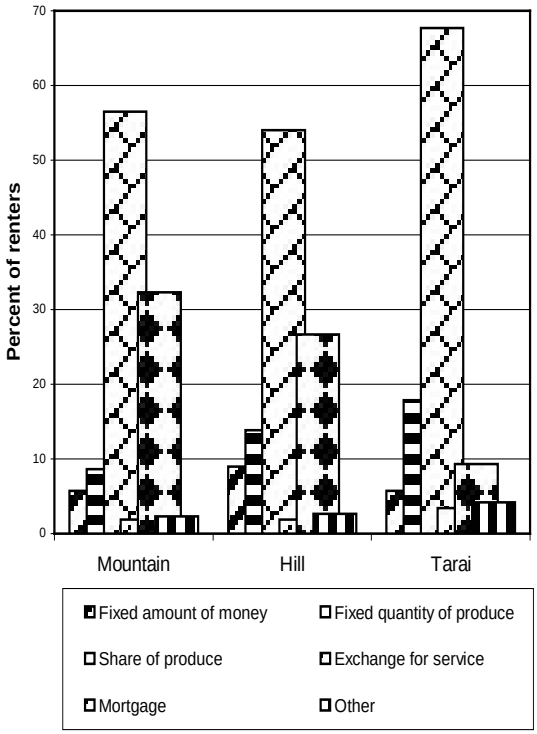
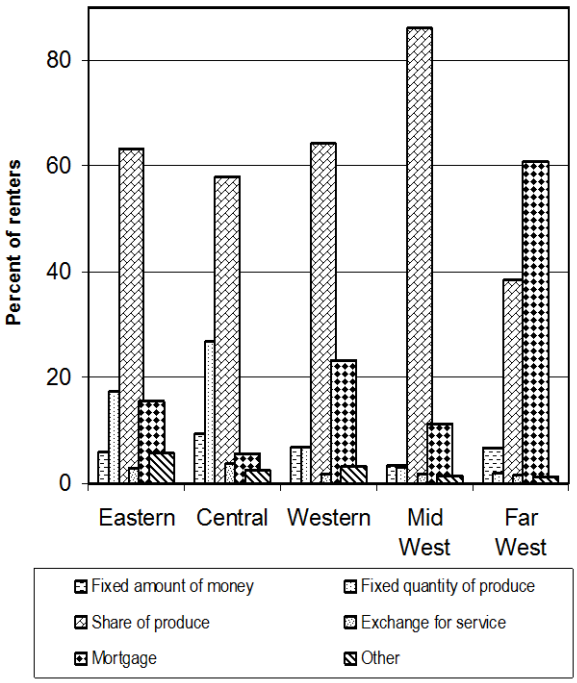


FIGURE 4.6: CONDITIONS OF RENT, DEVELOPMENT REGIONS, 2001/02



the land in Eastern region, Central Region, western region and Mid-Western region. Far-Western region was different where 60.9% of its renters reported “mortgage” as the condition of rent and only 38.4% were share crop renters.

By size of holding, share of produce is still the most popular condition of renting where about two-thirds of the holdings with sizes of 0.5 hectare to 2 hectares and over reported as condition of rent.

The proportion is much lower among holdings with less than half a hectare sharing of produce (52.4%). About 22.4% among holdings with at least 2 hectares reported “fixed quantity of produce” as the condition of rent compared with only 16.7% and 14.1% for holdings with less than half a hectare and 0.5 to less than 2 hectares, respectively, see TABLE 4.9.

TABLE 4.1: NUMBER AND AREA OF LAND HOLDINGS BY TYPE OF TENURE, AND BY SEX OF HOLDER, NEPAL, 2001/02

(In thousand except Percent)

Type of tenure	Number of Holdings		Area in hectares							
			Owned		Rented		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
All holdings										
One tenure form										
Owned	2,896.2	98.5	2,212.8	0.76*	…		...		2,212.8	98.7
Rented	35.5	1.2	…		26.3	0.74*	…		26.3	1.2
Other	7.9	0.3	…		…		2.0	0.25*	2.0	0.1
Total one tenure form	2,939.5	88.1/100.0	2,212.8	91.5	26.3	11.4	2.0	32.4	2,241.1	84.4/100.0
More than one tenure form	397.9	11.9	204.5	8.5	204.2	88.6	4.2	67.6	412.8	15.6
Total land holdings	3,337.4	100.0	2,417.2	100.0	230.5	100.0	6.2	100.0	2,653.9	100.0
Female holder										
One tenure form										
Owned	243.6	98.5	127.1	0.52*	…		...		127.1	98.7
Rented	3.4	1.4	…		1.6	0.47*	…		1.6	1.2
Other	0.4	0.2	…		…		0.1	0.25*	0.1	0.1
Total one tenure form	247.4	92.0/100.0	127.1	93.9	1.6	19.5	0.1	50.0	128.8	89.6/100.0
More than one tenure form	21.6	8.0	8.3	6.1	6.6	80.5	0.1	50.0	15.0	10.4
Total land holdings	269.0	100.0	135.4	100.0	8.2	100.0	0.2	100.0	143.8	100.0
Male holders										
One tenure form										
Owned	2,652.5	98.5	2,085.6	0.79*	…		...		2,085.6	98.7
Rented	32.1	1.2	…		24.8	0.77*	…		24.8	1.2
Other	7.5	0.3	…		…		1.9	0.25*	1.9	0.1
Total one tenure form	2,692.1	87.7/100.0	2,085.6	91.4	24.8	11.2	1.9		2,112.3	84.1/100.0
More than one tenure form	376.3	12.3	196.2	8.6	197.6	88.8	4.1		397.9	15.9
Total land holdings	3,068.4	100.0	2,281.8	100.0	222.4	100.0	6.0	100.0	2,510.2	100.0

*Average area in hectare by tenure.

TABLE 4.2: AREA OF LAND HOLDINGS BY TYPE OF TENURE – ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, BY SEX OF HOLDER, NEPAL, 2001/02

(In thousand except Percent)

Area and Sex of holder	Area of holding by tenure (ha)							
	Owned	% to total	Rented	% to total	Other	% to total	Total	% to total
NEPAL	2,417.2	91.1	230.5	8.7	6.2	0.2	2,653.9	100.0
Female holder	135.5	94.2	8.2	5.7	0.2	0.1	143.8	100.0
Male holder	2,281.7	90.9	222.3	8.9	6.0	0.2	2,510.1	100.0
ECOLOGICAL BELTS								
Mountain	210.6	96.3	8.0	3.6	0.1	0.0	218.7	100.0
Female holder	11.8	95.9	0.4	3.3	a	…	12.3	100.0
Male holder	198.8	96.3	7.6	3.7	0.1	0.0	206.4	100.0
Hill	994.0	95.7	43.7	4.2	1.0	0.1	1,038.6	100.0
Female holder	79.6	95.9	3.3	4.0	a	…	83.0	100.0
Male holder	914.4	95.7	40.4	4.2	1.0	0.1	955.6	100.0
Tarai	1,212.6	86.8	178.8	12.8	5.1	0.4	1,396.6	100.0
Female holder	44.0	90.5	4.4	9.1	0.1	0.2	48.6	100.0
Male holder	1,168.6	86.7	174.4	12.9	5.0	0.4	1,348.0	100.0
DEVELOPMENT REGIONS								
Eastern	682.9	85.9	109.9	13.8	2.6	0.3	795.5	100.0
Female holder	35.2	91.0	4.5	11.6	0.1	0.3	38.7	100.0
Male holder	647.7	85.6	105.4	13.9	0.7	0.1	756.8	100.0
Central	696.5	92.8	52.6	7.0	1.1	0.1	750.2	100.0
Female holder	30.1	94.7	1.7	5.3	a	…	31.8	100.0
Male holder	666.4	92.8	50.9	7.1	0.7	0.1	718.4	100.0
Western	488.8	95.4	22.5	4.4	0.9	0.2	512.2	100.0
Female holder	46.0	95.8	2.0	4.2	a	…	48.0	100.0
Male holder	442.8	95.4	20.5	4.4	0.7	0.2	464.2	100.0
Mid Western	335.7	90.6	34.1	9.2	0.9	0.2	370.7	100.0
Female holder	16.5	95.9	0.7	4.1	a	…	17.2	100.0
Male holder	319.2	90.3	33.4	9.4	0.7	0.2	353.5	100.0
Far Western	213.4	94.7	11.4	5.0	0.7	0.3	225.4	100.0
Female holder	7.7	96.3	0.3	3.8	a	…	8.0	100.0
Male holder	205.7	94.6	11.1	5.1	0.7	0.3	217.4	100.0

a/Less than 50 hectares

TABLE 4.3: NUMBER AND PERCENT OF LAND HOLDINGS BY TYPE OF TENURE - ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, 2001/02

Area and sex of holder	One tenure form				More than one tenure form	Total
	Owned	Rented	Other	Total		
	Number of holdings ('000)					
NEPAL	2,896.2	35.5	7.9	2,939.5	397.9	3,337.4
Female holder	244.4	3.5	0.5	248.3	21.6	269.9
Male holder	2,651.8	32.0	7.4	2,691.2	376.3	3,067.5
ECOLOGICAL BELTS						
Mountain	273.9	1.4	a	275.3	22.0	297.2
Female holder	19.9	0.2	a	20.0	1.3	21.3
Male holder	254.0	1.2	a	255.3	20.7	275.9
Hill	1,427.9	12.1	1.0	1,441.0	140.4	1,581.4
Female holder	155.4	2.1	0.1	157.6	13.4	171.1
Male holder	1,272.5	10.0	0.9	1,283.4	127.0	1,410.4
Tarai	1,194.4	22.0	6.9	1,223.3	235.5	1,458.8
Female holder	69.1	1.2	0.4	70.7	6.8	77.5
Male holder	1,125.3	20.8	6.5	1,152.6	228.7	1,381.3
DEVELOPMENT REGIONS						
Eastern	645.7	18.9	4.3	669.0	130.7	799.7
Female holder	48.7	1.5	0.3	50.5	5.0	55.5
Male holder	597.0	17.4	4.0	618.5	125.7	744.2
Central	892.3	12.0	0.9	905.3	121.6	1,026.9
Female holder	63.0	1.4	0.1	64.4	5.7	70.1
Male holder	829.3	10.6	0.8	840.9	115.9	956.8
Western	649.6	2.6	0.5	652.6	59.1	711.7
Female holder	91.2	0.5	0.1	91.9	7.5	99.4
Male holder	558.4	2.1	0.4	560.7	51.6	612.3
Mid Western	417.7	1.5	1.5	420.7	46.7	467.4
Female holder	27.1	0.1	a	27.2	1.7	28.9
Male holder	390.6	1.4	1.5	393.5	45.0	438.5
Far Western	290.8	0.4	0.7	292.0	39.7	331.7
Female holder	14.3	a	a	14.3	1.6	15.9
Male holder	276.5	0.4	0.7	277.7	38.1	315.8

a/ Less than 50 holdings

Continuation…..

TABLE 4.3: NUMBER AND PERCENT OF LAND HOLDINGS BY TYPE OF TENURE – ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, 2001/02

Area and sex of holder	One tenure form				More than one tenure form	Total
	Owned	Rented	Other	Total		
	Percent distribution					
NEPAL	86.8	1.1	0.2	88.1	11.9	100.0
Female holder	90.6	1.3	0.2	92.0	8.0	100.0
Male holder	86.4	1.0	0.2	87.7	12.3	100.0
ECOLOGICAL BELTS						
Mountain	92.1	0.5	*	92.6	7.4	100.0
Female holder	93.4	0.9	*	93.9	6.1	100.0
Male holder	92.0	0.4	*	92.5	7.5	100.0
Hill	90.3	0.8	0.1	91.1	8.9	100.0
Female holder	90.8	1.2	0.1	92.1	7.8	100.0
Male holder	90.2	0.7	0.1	91.0	9.0	100.0
Tarai	81.9	1.5	0.5	83.9	16.1	100.0
Female holder	89.2	1.5	0.5	91.2	8.8	100.0
Male holder	81.5	1.5	0.5	83.4	16.6	100.0
DEVELOPMENT REGIONS						
Eastern	80.7	2.4	0.5	83.7	16.3	100.0
Female holder	87.7	2.7	0.5	91.0	9.0	100.0
Male holder	80.2	2.3	0.5	83.1	16.9	100.0
Central	86.9	1.2	0.1	88.2	11.8	100.0
Female holder	89.9	2.0	0.1	91.9	8.1	100.0
Male holder	86.7	1.1	0.1	87.9	12.1	100.0
Western	91.3	0.4	0.1	91.7	8.3	100.0
Female holder	91.8	0.5	0.1	92.5	7.5	100.0
Male holder	91.2	0.3	0.1	91.6	8.4	100.0
Mid Western	89.4	0.3	0.3	90.0	10.0	100.0
Female holder	93.8	0.3	*	94.1	5.9	100.0
Male holder	89.1	0.3	0.3	89.7	10.3	100.0
Far Western	87.7	0.1	0.2	88.0	12.0	100.0
Female holder	89.9	*	*	89.9	10.1	100.0
Male holder	87.6	0.1	0.2	87.9	12.1	100.0

*/Less than 0.1%.

TABLE 4.4: AREA OF LAND HOLDINGS BY TYPE OF TENURE AND SIZE OF HOLDING, NEPAL, 2001/02

(In thousand except Percent)

Size of holding	Type of tenure								% land owned to Total
	Owned		Rented		Other		Total		
	Area	%	Area	%	Area	%	Area	%	
					All holdings				
Under 0.1 ha	12.4	0.5	0.6	0.3	0.2	3.4	14.0	0.5	88.5
0.1 - 0.2 ha	46.5	1.9	3.1	1.3	0.3	4.1	53.1	1.9	87.5
0.2 - 0.5 ha	306.7	12.7	19.3	8.4	1.1	16.9	348.1	12.2	88.1
0.5 - 1.0 ha	594.4	24.6	45.4	19.7	1.9	30.1	685.9	24.0	86.7
1.0 - 2.0 ha	706.6	29.2	83.7	36.3	1.7	27.9	857.5	30.0	82.4
2.0 - 3.0 ha	325.5	13.5	45.3	19.7	0.4	7.1	404.3	14.2	80.5
3.0 - 4.0 ha	158.0	6.5	17.3	7.5	0.4	5.9	189.7	6.6	83.3
4.0 - 5.0 ha	82.4	3.4	6.8	2.9	0.1	1.3	95.6	3.3	86.2
5.0 - 10.0 ha	132.1	5.5	7.4	3.2	0.2	3.3	148.4	5.2	89.0
10.0 ha and over	52.6	2.2	1.6	0.7	0.0	0.0	57.1	2.0	92.2
Total	2,417.2	100.0	230.5	100.0	6.2	100.0	2,853.9	100.0	84.7
					Female holders				
Under 0.1 ha	1.60	1.2	0.07	0.8	0.01	6.4	1.67	1.2	95.5
0.1 - 0.2 ha	5.37	4.0	0.33	4.0	0.01	9.2	5.72	4.0	94.0
0.2 - 0.5 ha	29.41	21.7	1.49	18.2	0.06	40.5	30.96	21.5	95.0
0.5 - 1.0 ha	42.04	31.0	1.93	23.6	0.05	34.7	44.03	30.6	95.5
1.0 - 2.0 ha	34.88	25.8	2.79	34.2	0.01	7.8	37.68	26.2	92.6
2.0 - 3.0 ha	11.61	8.6	0.95	11.7	0.00	1.1	12.57	8.7	92.4
3.0 - 4.0 ha	4.63	3.4	0.23	2.8	0.00	0.0	4.86	3.4	95.3
4.0 - 5.0 ha	1.64	1.2	0.34	4.1	0.00	0.0	1.98	1.4	82.9
5.0 - 10.0 ha	4.04	3.0	0.04	0.5	0.00	0.0	4.08	2.8	99.0
10.0 ha and over	0.21	0.2	0.00	0.0	0.00	0.0	0.21	0.1	100.0
Total	135.45	100.0	8.16	100.0	0.16	100.0	143.77	100.0	94.2
					Male holders				
Under 0.1 ha	10.8	0.5	0.6	0.2	0.2	3.3	11.6	0.5	93.5
0.1 - 0.2 ha	41.1	1.8	2.8	1.2	0.2	3.9	44.1	1.8	93.2
0.2 - 0.5 ha	277.3	12.2	17.8	8.0	1.0	16.3	296.1	11.8	93.6
0.5 - 1.0 ha	552.3	24.2	43.5	19.5	1.8	30.0	597.6	23.8	92.4
1.0 - 2.0 ha	671.7	29.4	80.9	36.4	1.7	28.4	754.3	30.0	89.0
2.0 - 3.0 ha	313.9	13.8	44.3	19.9	0.4	7.3	358.7	14.3	87.5
3.0 - 4.0 ha	153.4	6.7	17.1	7.7	0.4	6.0	170.8	6.8	89.8
4.0 - 5.0 ha	80.8	3.5	6.4	2.9	0.1	1.4	87.3	3.5	92.6
5.0 - 10.0 ha	128.1	5.6	7.4	3.3	0.2	3.4	135.7	5.4	94.4
10.0 ha and over	52.4	2.3	1.6	0.7	0.0	0.0	54.0	2.2	97.1
Total	2,281.8	100.0	222.3	100.0	6.1	100.0	2,510.2	100.0	90.9

TABLE 4.5: PERCENT OF LAND HOLDINGS BY TYPE OF TENURE , SIZE OF HOLDING, AND SEX OF HOLDER, NEPAL, 2001/02

(percent of holdings)

Size of holdings	One tenure form				More than one tenure form	Total	Total holdings ('000)
	Owned	Rented	Other	Total			
				All holdings			
Under 0.1 ha	92.6	2.5	1.5	96.5	3.5	100.0	260.5
0.1 - 0.2 ha	91.0	1.7	0.3	93.0	7.0	100.0	346.1
0.2 - 0.5 ha	89.7	0.8	0.2	90.6	9.4	100.0	972.3
0.5 - 1.0 ha	86.3	0.7	0.1	87.1	12.9	100.0	915.7
1.0 - 2.0 ha	80.7	1.0	0.0	81.7	18.3	100.0	588.6
2.0 - 3.0 ha	77.9	1.5	0.0	79.4	20.6	100.0	157.0
3.0 - 4.0 ha	81.1	1.6	0.0	82.7	17.3	100.0	51.6
4.0 - 5.0 ha	83.0	0.9	0.0	83.9	16.1	100.0	20.2
5.0 - 10.0 ha	86.6	0.7	0.0	87.3	12.7	100.0	21.6
10.0 ha and over	92.9	0.0	0.0	92.9	7.1	100.0	3.8
Total	86.8	1.1	0.2	88.1	11.9	100.0	3,337.4
				Female holdings			
Under 0.1 ha	93.5	2.5	0.6	96.6	3.4	100.0	32.94
0.1 - 0.2 ha	91.6	2.1	0.1	93.8	6.2	100.0	40.90
0.2 - 0.5 ha	91.2	0.8	0.2	92.2	7.8	100.0	94.49
0.5 - 1.0 ha	90.3	0.5	0.0	90.9	9.1	100.0	64.34
1.0 - 2.0 ha	85.6	1.4	0.0	87.0	13.0	100.0	28.53
2.0 - 3.0 ha	85.6	1.0	0.0	86.6	13.4	100.0	5.34
3.0 - 4.0 ha	87.4	0.0	0.0	87.4	12.6	100.0	1.44
4.0 - 5.0 ha	74.1	13.3	0.0	87.4	12.6	100.0	0.43
5.0 - 10.0 ha	93.1	0.0	0.0	93.1	6.9	100.0	0.58
10.0 ha and over	100.0	0.0	0.0	100.0	0.0	100.0	0.02
Total	90.5	1.3	0.2	92.0	8.0	100.0	269.89
				Male holdings			
Under 0.1 ha	92.4	2.5	1.6	96.5	3.5	100.0	227.61
0.1 - 0.2 ha	91.0	1.6	0.3	92.9	7.1	100.0	305.22
0.2 - 0.5 ha	89.5	0.8	0.2	90.5	9.5	100.0	877.77
0.5 - 1.0 ha	86.0	0.7	0.1	86.8	13.2	100.0	851.34
1.0 - 2.0 ha	80.4	0.9	0.0	81.4	18.6	100.0	560.12
2.0 - 3.0 ha	77.6	1.5	0.0	79.2	20.8	100.0	151.69
3.0 - 4.0 ha	80.9	1.7	0.0	82.6	17.4	100.0	50.14
4.0 - 5.0 ha	83.2	0.7	0.0	83.8	16.2	100.0	19.81
5.0 - 10.0 ha	86.5	0.7	0.0	87.1	12.9	100.0	21.00
10.0 ha and over	92.8	0.0	0.0	92.8	7.2	100.0	3.76
Total	86.8	1.1	0.3	87.7	12.3	100.0	3068.45

TABLE 4.6: HOLDINGS RENTING LAND AND AREA OF LAND RENTED BY CONDITIONS OF RENT, NEPAL, 2001/02

Conditions of rent*	Holdings Number ('000)	Area of rented land			
		Percent	Area ('000 ha)	Percent	Average (ha)
			All holdings		
Fixed amount of money	28.42	6.9	11.44	5.0	0.40
Fixed quantity of produce	65.64	15.9	35.27	15.3	0.54
Share of produce	256.45	62.2	159.03	69.0	0.62
Exchange for service	11.42	2.8	2.58	1.1	0.23
Mortgage	69.12	16.8	18.94	8.2	0.27
Other	14.49	3.5	3.23	1.4	0.22
Total holdings renting land	412.07	100.0	230.48	100.0	0.56
			Female holders		
Fixed amount of money	1.88	7.9	0.30	3.7	0.16
Fixed quantity of produce	2.54	10.7	0.96	11.7	0.38
Share of produce	13.78	57.9	5.50	67.4	0.40
Exchange for service	0.30	1.2	0.06	0.8	0.22
Mortgage	5.46	22.9	1.18	14.5	0.22
Other	1.27	5.3	0.16	1.9	0.12
Total holdings renting land	23.81	100.0	8.16	100.0	0.34
			Male holders		
Fixed amount of money	26.54	6.8	11.14	5.0	0.42
Fixed quantity of produce	63.10	16.3	34.31	15.4	0.54
Share of produce	242.67	62.5	153.53	69.1	0.63
Exchange for service	11.12	2.9	2.51	1.1	0.23
Mortgage	63.66	16.4	17.76	8.0	0.28
Other	13.22	3.4	3.07	1.4	0.23
Total holdings renting land	388.26	100.0	222.32	100.0	0.57

* Some holdings reported more than one condition

TABLE 4.7: NUMBER OF HOLDINGS RENTING LAND BY CONDITIONS OF RENT, ECOLOGICAL BELT, 2001/02

Conditions of rent*	Ecological belt							
	Mountain	%	Hill	%	Tarai	%	Nepal	%
Fixed amount of money	1.3	5.8	13.2	9.0	13.9	5.7	28.4	6.9
Fixed quantity of produce	1.9	8.6	20.3	13.8	43.4	17.9	65.6	15.9
Share of produce	12.6	56.5	79.6	54.0	164.3	67.7	256.4	62.2
Exchange for service	0.4	1.9	2.7	1.8	8.3	3.4	11.4	2.8
Mortgage	7.2	32.3	39.3	26.7	22.7	9.3	69.1	16.8
Other	0.5	2.3	3.9	2.7	10.1	4.2	14.5	3.5
Total holdings renting land	22.2	100.0	147.2	100.0	242.6	100.0	412.1	100.0

*Some holdings reported more than one condition

TABLE 4.8: NUMBER OF HOLDINGS RENTING LAND BY CONDITIONS OF RENT, DEVELOPMENT REGION, 2001/02

Conditions of rent*	Development region					
	Eastern	Central	Western	Mid West	Far West	Nepal
			Number of holdings ('000)			
Fixed amount of money	8.5	12.0	4.0	1.6	2.3	28.4
Fixed quantity of produce	24.9	34.6	4.0	1.4	0.7	65.6
Share of produce	90.9	75.1	37.4	40.0	13.1	256.4
Exchange for service	4.2	4.8	1.0	0.8	0.6	11.4
Mortgage	22.4	7.2	13.5	5.2	20.8	69.1
Other	8.3	3.2	1.9	0.7	0.4	14.5
Total holdings renting land	143.9	129.3	58.2	46.5	34.2	412.1
			Percent			
Fixed amount of money	5.9	9.3	6.8	3.4	6.7	6.9
Fixed quantity of produce	17.3	26.8	6.9	3.1	1.9	15.9
Share of produce	63.1	58.0	64.3	86.0	38.4	62.2
Exchange for service	2.9	3.8	1.7	1.7	1.6	2.8
Mortgage	15.5	5.6	23.2	11.3	60.9	16.8
Other	5.8	2.5	3.3	1.4	1.3	3.5
Total holdings renting land	100.0	100.0	100.0	100.0	100.0	100.0

*Some holdings reported more than one condition

TABLE 4.9: PERCENT OF HOLDINGS RENTING LAND BY CONDITIONS OF RENT AND SIZE OF HOLDING, NEPAL, 2001/02

(percent of renters)

Conditions of rent*	Size of holding (ha)			
	<0.5	0.5 < 2	2 & over	Total
Fixed amount of money	8.6	5.7	7.7	6.9
Fixed quantity of produce	16.7	14.1	22.4	15.9
Share of produce	52.4	66.9	67.7	62.2
Exchange for service	5.2	1.6	1.7	2.8
Mortgage	16.4	18.0	12.1	16.8
Other	5.7	2.4	2.5	3.5
Total	100.0	100.0	100.0	100.0
Holdings renting land ('000)	134.6	228.4	49.1	412.1

*Some holdings reported more than one condition

CHAPTER 5
LAND USE

Land use refers to the major classification of the use of the different parcels of land in the holdings. All land operated by agricultural holdings is classified as either agricultural land or non-agricultural land. The total area of all agricultural holdings in the country has been increasing.

Census 1961/62 registered an area of 1,685 thousand hectares of all agricultural holdings. In 2001/02 the area increased to 2,654 thousand hectares - an increase of 63.3 percent in the span of 40 years. In 1961/62 about 1,626 thousand hectares out of the total land operated by agricultural holding was agricultural land. This increased to 2,498 thousand hectare of agricultural land operated in 2001/02. It is an increase of 53.6 percent over the 40 years period.

The area of arable land was 1,5929 thousand hectares in 1961/62. It increased to 2,357 thousand hectares in 2001/02, an increase of 48.1 percent in forty years. It was observed that land under permanent pasture had been decreasing. In 1981/82 area under permanent pasture was 42.5 thousand hectares which decreased to 19.7 thousand hectare in 2001/02.

In the case of non-agricultural land, the area increased from 59 thousand hectares in 1961/62 to 204.5 thousand hectares in 1991/92. However, there was a sudden decrease in the area of non-agricultural land from 204.5 thousand hectares to 156.3 thousand hectares between 1991/92 and 2001/02. Arable land occupies only about 18 percent or 2,654 thousand hectares in 2001/02 of the total land area of Nepal.

Table 5.0 Summary Statistics

(Number in '000 hectares)

Description	Census year				
	1961/62	1971/72	1981/82	1991/92	2001/02
Total area of holding	1,685.4	1,654.0	2,463.7	2,597.4	2,653.9
Agricultural land	1,626.4	1,592.3	2,359.2	2,392.9	2,497.7
Arable Land	1,591.9	1,567.0	2,287.5	2,323.4	2,357.0
Agricultural land as % of total area of holding	96.5	96.3	95.8	92.1	94.1
Arable land as % of total area of holding	94.5	94.7	92.8	89.5	88.8
Non agricultural land	59.0	91.7	104.5	204.5	156.3
Non agricultural land as % of total area of holding	3.5	3.7	4.2	7.9	5.9

5.1 Land use types

Land use refers to the major classification of the use of the different parcels of land in the holding. For purposes of the Agriculture Census, land operated by the holding is classified according to major land uses as agricultural land and non-agricultural land.

Agricultural lands are generally classified into two categories, the crop land and the ponds. Crop land is further classified into three categories, namely: arable land, land under permanent crops and land under permanent meadows and pastures.

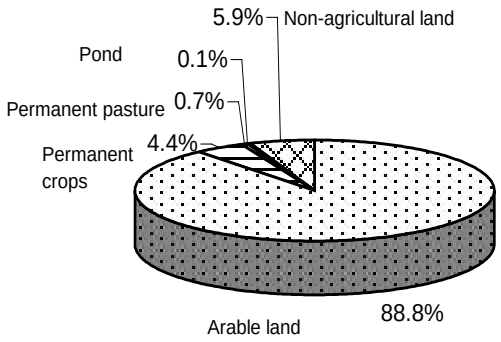
On the other hand, non-agricultural lands are those lands that are part of the holding that comprise woodland or forest (not commercial) and all other land, unused and undeveloped potentially productive land and all other land in the holding not elsewhere classified including the home lot of the holder.

The total area of all agricultural holdings in the country had been increasing every census year from 1.6854 million hectares in 1961/62 to 2.6539 million hectares in 2001/02. Because of this increase, other major land use categories correspondingly increased in area since 1961/62. Specifically the areas of arable land and land under permanent crops have been increasing since 1961/62 up to 2001/02. On the other hand, it was observed that land under permanent pasture had been decreasing in area starting 1981/82 from 42.5 thousand hectares to only 19.7 hectares in 2001/02.

For non-agricultural land, the area had been increasing from 59 thousand hectares in 1961/62 to 204.5 thousand hectares in 1991/92. However, in 2001/02 there was a sudden decrease in the area of non-agricultural land to 156.3 thousand hectares. Probably the source of the decrease in area is in the woodland and forest where the area abruptly decreased from 108.8 thousand hectares in 1991/92 to 37.2 thousand hectares in 2001/02, a decrease of about 66%. The plausible explanation of this decrease is the shifting of the use of the land. It is possible that some of the increase in the area of land under permanent crops may have come from this land use category.

TABLE 5.1 shows that there was a sudden increase in the land under permanent crops between 1991/92 and 2001/02 from 29.4 thousand hectares to 117.5 thousand hectares. Some of the increases may have come from non-agricultural land, some may have come from land under permanent pasture.

FIGURE 5.1: LAND USE CATEGORIES, NEPAL, 2001/02



While it was observed that there was actual increases in the area of land under the different land use categories, we can say that land use pattern in Nepal seems to be changing slowly relative to the different categories of land uses. Upon closer examination of the different land uses, there was a downward trend in the proportion of arable land relative to the total area of the holding from 94.5% of the total land holding in 1961/62 to 88.8% in 2001/02. This finding implies that while agricultural land area is steadily increasing through the years, the increase in area was not enough to maintain its relative importance to the total area of the holding.

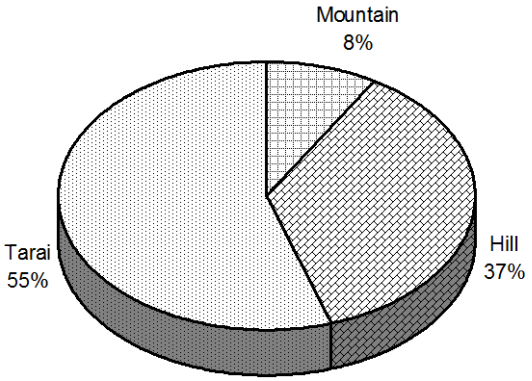
Some of the increases may have been diverted to other land uses of less importance. For instance, under the "Other land" category that belongs to non-agricultural land, the increase can be considered sizeable from 95.7 thousand hectares in 1991/92 to 119.1 thousand hectares in 2001/02 or an increase of 24.4%.

The changing pattern in land use may be seen in the percentage distribution for each census year in TABLE 5.1 where the downward trend is obvious for the arable land where land under temporary crops belongs. On the other hand, the increasing trend for the land under permanent crops is also very evident. In fact, the proportion of the land under permanent crops among female holders is extraordinarily high. This means that more female holders are engaged in tree farming, proportionally than their male counterparts.

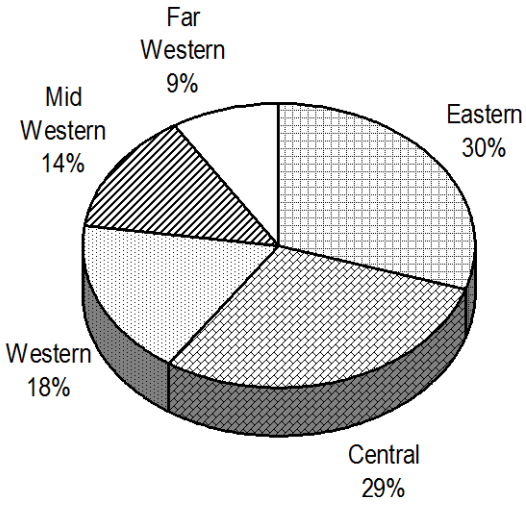
5.2 Arable land

Arable land comprises all land under cultivation to temporary crops. This type of agricultural land is very important to the attainment of food self-sufficiency in Nepal. There was a minimal increase in the area of arable land between 1991/92 and 2001/02 from 2.323 million hectares to 2.357 million hectares or an increase of 1.4% in a period of ten years. There are four categories of arable land: land under temporary crops, land under temporary meadows, land under temporarily fallow

FIGURE 5.2: DISTRIBUTION OF ARABLE LAND, 2001/02

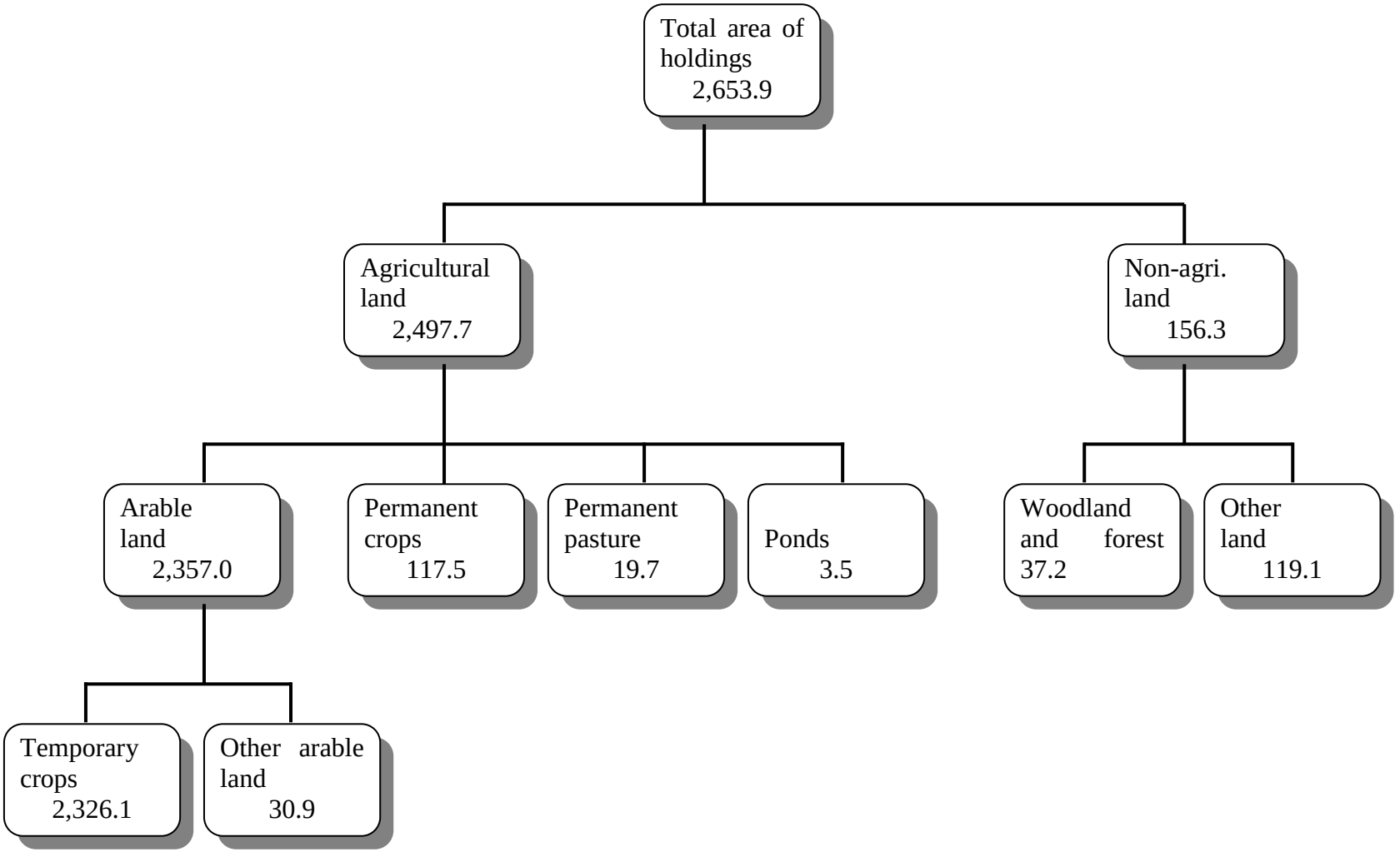


and other arable land. The land under temporary crops is considered the most important category of arable land because this is the physical area of land where annual crops were grown during the reference period. If the growing cycle of crops is for a few months only, for



example vegetables, the land can be used as many times as the growing cycle of the crop permits.

FIGURE 5.3
LAND USE, NEPAL, 2001/02
('000 ha)



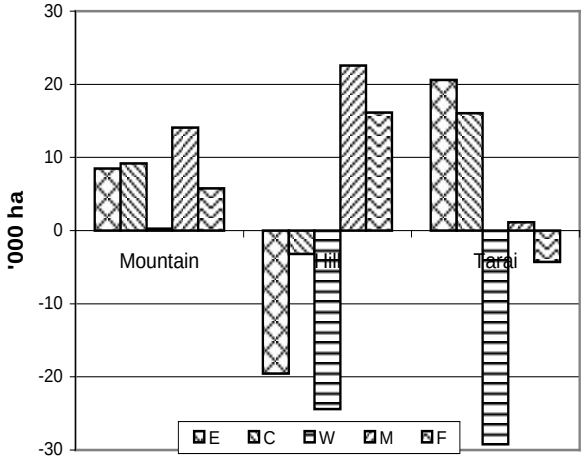
Arable land in Nepal occupies only about 16% or 2.654 million hectares of the total land area of 14.718 million hectares in 2001/02. Hill ecological belt reported the biggest land area of 6.1345 million hectares but Tarai belt reported the widest area of arable land physically and proportionally with 38% in 2001/02, see TABLE 5.2. The Mountain belt reported the lowest proportion of arable land (3.9%) relative to its total area of 5.182 million hectares, which is second largest among the three belts. The total land area of Tarai is a little more than half that of the Hill belt. This condition is expected because Tarai lies on the southern part of the country and considered as an extension of the Gangetic plains of India that normally forms a low flat land.

Moreover, Tarai belt has reported 1.294 million hectares of arable land that was 54.9% of the total area of arable land in Nepal in 2001/02. In 1991/92 Tarai had a higher proportion of arable land which was 55.5% of the total. The Hill belt also experienced a slight decrease to its position in 1991/92 from 37% to 36% in 2001/02. The Mountain belt seemed to have increased its arable land relative to the two belts where in 1991/92 the share of Mountain belt to the total arable land was only 7% and this share increased to 8.5% in 2001/02 see TABLE 5.2.

Of the 122.6 thousand hectares of arable land that female holders reported in 2001/02, Hill belt holders reported the highest proportion of arable land in relation to the total arable land in the area at 7% compared with 5.4% in Mountain and 3.3% in Tarai. Also in terms of actual arable land area, Hill belt female holders reported the biggest with 67.2 thousand hectares compared with 44.1 thousand hectares in Tarai belt and 11.2 thousand hectares in the Mountain belt see TABLE 5.2a.

The arable land operated by the female holder was only 0.83% of the total land area of Nepal. By ecological belt, the Mountain belt female holdings have only 0.22% of their arable land to the total arable land. Tarai belt and Hill belt reported higher proportions of 1.30% and 1.10%, respectively.

FIGURE 5.4: CHANGE IN ARABLE LAND, 1991/92 TO 2001/02

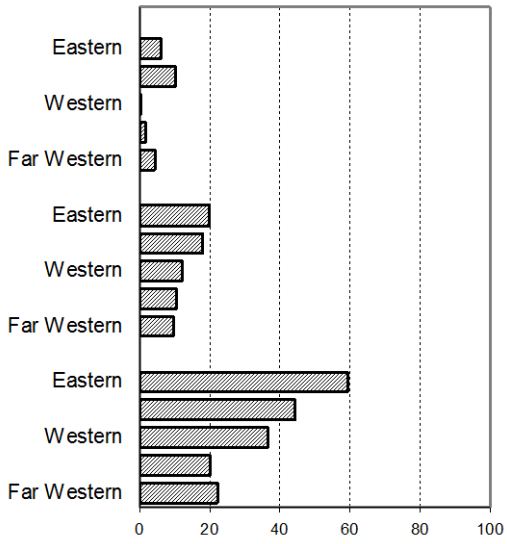


Eastern and Central development regions claim about 59.4% or 1.3995 million hectares of the total arable land of 2.347 million hectares in Nepal with Eastern region registering the biggest area of 709.2 thousand hectares followed closely by Central region with 690.3 thousand hectares. These two regions cover a total of 35 districts, 16 districts under Eastern region and 19 districts in Central region. The next largest region is Western region with 421 thousand hectares despite its coverage of 16 districts. Far-Western development region reported the least area of arable land at 206.7 thousand hectares and second to the smallest area in 2001/02 was Mid-Western region with 329.7 thousand hectares. These two regions reporting the smallest area of arable land cover also the least number of districts, 15 districts for Mid-Western region and 9 districts for Far-Western region.

The percentage of arable land to the total land area of the region explains the area of arable land found in each development region, see TABLE 5.3.

Area-wise, Mid-Western region has the largest land territory that occupies 28.8% of the total land area of the country. However, its arable land is only 7.78% of the total since most of the districts in this region are mountainous like Dolpa, Jumla, Kalikot, Mugu and Humla.

FIGURE 5.5: ARABLE LAND, 2001/02, PERCENT OF LAND AREA



Land use pattern in development regions is depicted in the percentage distribution of the different land use categories in TABLE 5.3.

Of the five developing regions, only Central region registered a proportional decrease of its total agricultural land between 1991/92 and 2001/02. However, the actual physical area of the agricultural land increased from 685.2 thousand hectares to 690.3 thousand hectares, an increase of only 0.74% (less than 1%) thus the decrease in its importance relative to other land uses.

Examining the land use structure of each developing region, it is Western region that exhibited a low proportion of arable land of only 82.2% in 2001/02 from 83.7% in 1991/92 which was usually used in growing annual crops. However, it was this region where the proportion of land under permanent crops was highest comparatively at 10.1% compared with the next highest of 4% as reported in Eastern region. Land under permanent crops in Western region in 1991/92 was only 1% of the total area of holdings.

For female holders, the same pattern is observed in Western region that is different from the land use structure of the other four regions. The proportion of arable land reported by the female holders was only 77.5% of the 48 thousand hectares area of the holdings but the proportion of land under permanent crops registered at 12.7%. In physical terms, female holders in Western region operated 6.09 thousand hectares or about 68% of the 8.94 thousand hectares of land under permanent crops reported by all female holders in Nepal.

5.3 Percent of land for cultivation

As earlier mentioned, arable land is very important in attaining food self-sufficiency in Nepal since the land under temporary crops is under this category. The other categories of arable land are potential areas for raising crops. For instance, land under temporarily fallow, while this land is not actually cultivated during the current year, it is possible that in the next cropping year the land may be planted. Usually land under temporarily fallow is being left uncultivated during a particular year to restore the fertility of the soil or for some other reasons.

In the ecological-development region matrix shown in TABLE 5.4, all development regions under the Mountain belt increased in the area of arable land. This situation cannot be said of the regions in the two other belts. In Hill belt, three regions registered a decrease in the arable

land, namely: Eastern, Central and Western while in Tarai belt two regions registered a decrease, namely: Western and Far-Western regions. These decreases can be seen in the percentage distribution of arable land by development region cross-classified with the ecological belt.

Arable land as percent of the total land by sub-ecological belt registered an increase in the Mountain belt area from 3.1% in 1991/92 to 3.9% in 2001/02. Despite the decreasing arable land in some development regions in Tarai belt, there was still a slight improvement in the percentage of arable land to the total from 37.9% in 1991/92 to 38.0% in 2001/02. It is in the Hill belt where a slight decrease in the percentage of arable land was noted from 14.2% in 1991/91 to 14.1% in 2001/02.

Which developing regions were contributing to the increases in Mountain and Tarai belts and which of the regions were contributing to the decrease in the percentage of arable land in Hill belt, TABLE 5.5 shows the data. All regions in Mountain belt had contributed to the increase in the percentage of the area of arable land to the total land area while in Tarai belt only Eastern, Central and Mid-Western regions contributed to the increases in the area of the arable land. For Hill belt, Eastern, Central and Westerns regions contributed to the decrease in the percentage of arable land in this belt.

5.4 Land use pattern in small and large holdings

Of the 3.3374 million holdings, 3.306 million holdings reported of cultivating temporary crops. This is 99.1% of all holdings in the country of which 46.9% are found in holdings with less than half a hectare while only 10.7% are among the large-sized farms of 2 hectares and over.

The land use pattern among the small land holders for other agricultural land and woodland and forest seems to be different from the large land holder. For instance, the number of holdings with permanent crops is only 10.3% of the total while the large holdings reported 38.4% of the total as having permanent crops. Also holdings with woodland and forest comprised only 2.1% among the small-sized holdings compared with 15.4% among the large holdings. Even in the proportion of the number of holdings with ponds and permanent pasture, the small holdings are less proportionally when compared with the large holdings.

The same land use pattern was noted among the female and male holders where the number of holdings engaged in other agricultural activities and woodland and forest was much less than the large holdings, see TABLE 5.6.

5.5 Wet and dry land

Knowing whether the land is wet land or dry land is important not only to planners but also to the farmers as well.

Wet land refers to low land where water remains on the surface or on the upper soil layer, making the soil suitable for main paddy cultivation while dry land refers to any other land than the wet land; i.e. land not suitable for main paddy cultivation.

For Nepal, where it used to be a rice exporting country, knowing the proportion of wet land relative to the total land available can provide good data for planning the cultivation of rice as a main crop. The information can also provide an idea of the extent of area under irrigation both artificially and naturally. Wet land includes also lands that depend on their water supply from rainfall but adequate enough to be able to cultivate main paddy up to harvest. This kind of land has a higher water holding capacity than other

lands that enable the retention of standing water longer. The wet land is usually classified as lowland while the dry land is usually classified as upland.

Nepal has a total area of 1.6062 million hectares of wet land representing 60.5% of the total area of holdings in the country.

These wet lands are mostly found in the Tarai belt with 1.206.9 million hectares or 75.1% of the total area of wet land. Since wet land is usually found in flat terrain or areas, which is in the Tarai belt, it is not unexpected therefore that the Mountain belt and the Hill belt would yield a low proportion of wet land. For Mountain belt, its share of the wet land is only 71.8 thousand hectares or 4.5% of the total while Hill belt reported a much higher share of 327.5 thousand hectares or 20.4% of the total.

Among female holders, wet land consisted of 68.8 hectares or 47.8% of the total area of female holdings of 143.8 thousand hectares. Of this area of 68.8 thousand hectares, 39.8 thousand hectares or 57.8% are found in Tarai; and 25.1 thousand hectares or 36.5% are in the Hill belt. Only 4 thousand hectares were found in Mountain belt, which is 5.8% of the total wet land operated by female holders.

Among the development regions, Eastern and Central regions reported the highest percentage of wet land of 65.2% and 67.1%, respectively. The aggregate area for the two regions comprised almost two-thirds of the total area of wet land in the country. Far Western region reported 59.1% proportion of wet land to the total area of holding while Mid-western reported the lowest proportion of 44.9%.

The proportion of the area of wet land relative to the total area of the holding was reported by the large holdings at 72.6% while the small holdings reported a proportion of 48.5%. The pattern is the same for the female and male holdings, except that in the case of the female holding only 60.8% of the total area are wet land compared with the proportion of 72.9% among the large-sized male holdings, see TABLE 5.8.

TABLE 5.1: AREA OF LAND HOLDINGS BY LAND USE, NEPAL, 1961/62 TO 2001/02

(In thousand hectares except Percent)

Land use	1961/62	1971/72	1981/82	1991/92	2001/02		
					All Holdings	Female holding	Male holding
Total area of holdings	1,685.4	1,654.0	2,463.7	2,597.4	2,653.9	143.8	2,510.1
Agricultural land	1,626.4	1,592.3	2,359.2	2,392.9	2,497.7	133.1	2,364.6
Arable land	1,591.9	1,567.0	2,287.5	2,323.4	2,357.0	122.6	2,234.4
Land under temporary crops	1,550.5	1,537.1	2,250.2	2,284.6	2,326.1	120.5	2,205.6
Other arable land	41.4	29.9	37.3	38.8	30.9	2.1	28.8
Land under permanent crops	12.2	15.0	29.2	29.4	117.5	8.9	108.6
Land under permanent pasture	22.3	10.3	42.5	36.9	19.7	1.5	18.2
Ponds	na	na	na	3.3	3.5	0.1	3.4
Non-agricultural land	59.0	61.7	104.5	204.5	156.3	10.7	145.6
Woodland and forest	13.8	4.7	15.0	108.8	37.2	2.7	34.5
Other land	45.2	57.1	89.5	95.7	119.1	8.0	111.1
Total land area of Nepal	14,718.1	14,718.1	14,718.1	14,718.1	14,718.1	…	…
% of arable land to Total land area	10.8	10.6	15.5	15.8	18.0	…	…
				Percent			
Total area of holdings	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Agricultural land	96.5	96.3	95.8	92.1	94.1	92.6	94.2
Arable land	94.5	94.7	92.8	89.5	88.8	85.3	89.0
Land under temporary crops	92.0	92.9	91.3	88.0	87.6	83.8	87.9
Other arable land	2.5	1.8	1.5	1.5	1.2	1.4	1.1
Land under permanent crops	0.7	0.9	1.2	1.1	4.4	6.2	4.3
Land under permanent pasture	1.3	0.6	1.7	1.4	0.7	1.0	0.7
Ponds	…	…	…	0.1	0.1	0.1	0.1
Non-agricultural land	3.5	3.7	4.2	7.9	5.9	8.1	5.8
Woodland and forest	0.8	0.3	0.6	4.2	1.4	1.9	1.4
Other land	2.7	3.5	3.6	3.7	4.5	6.2	4.4

Note: Details may not add up to total due to rounding.

TABLE 5.2: AREA OF LAND HOLDINGS BY LAND USE AND ECOLOGICAL BELT, 1991/92 AND 2001/02

(In thousand hectares)

Land Use	Mountain		Hill		Tarai		Nepal	
	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02
Total agricultural land	164.3	207.7	909.9	959.9	1,318.7	1,330.1	2,392.9	2,497.7
Arable land	162.3	200.0	871.3	863.0	1,289.7	1,294.0	2,323.4	2,357.0
Land under temporary crops	158.7	197.2	848.2	844.4	1,277.7	1,284.5	2,284.6	2,326.1
Other arable land	3.7	2.9	23.1	18.5	12.1	9.5	38.8	30.9
Land under permanent crops	0.7	6.0	6.7	81.2	22.0	30.2	29.4	117.5
Land under permanent pasture	1.2	1.7	31.7	15.2	3.9	2.9	36.9	19.7
Ponds	0.0	0.0	0.2	0.5	3.1	2.9	3.3	3.5
Total non-agricultural land	12.5	11.0	136.3	78.7	55.6	66.6	204.5	156.3
Woodland and forest	5.7	2.6	93.2	29.6	9.9	5.1	108.8	37.2
Other land	6.8	8.4	43.1	49.2	45.7	61.5	95.7	119.1
Total area of holdings	176.8	218.7	1,046.2	1,038.6	1,374.3	1,396.6	2,597.4	2,653.9
Total land area	5,181.7	5,181.7	6,134.5	6,134.5	3,401.9	3,401.9	14,718.1	14,718.1
Arable land as % of total land area	3.1	3.9	14.2	14.1	37.9	38.0	15.8	16.0

TABLE 5.2a: AREA OF LAND HOLDINGS BY LAND USE, ECOLOGICAL BELT OF FEMALE HOLDERS, NEPAL, 2001/02

(In thousand hectares except percent)

Land use	Mountain		Hill		Tarai		Nepal	
	Female holder	% to total	Female holder	% to total	Female holder	% to total	Female holder	% to total
Total agricultural land	11.5	5.5	76.2	7.9	45.3	3.4	133.1	5.3
Arable land	11.2	5.4	67.2	7.0	44.1	3.3	122.6	4.9
Land under temporary crops	11.1	5.3	65.7	6.8	43.7	3.3	120.5	4.8
Other arable land	0.1	0.0	1.5	0.2	0.4	0.0	2.1	0.1
Land under permanent crops	0.2	0.1	7.6	0.8	1.1	0.1	8.9	0.4
Land under permanent pasture	0.1	0.0	1.4	0.1	0.03	0.0	1.5	0.1
Ponds (actual area in hectares)	...	...	5.0	0.0	70.6	0.0	75.6	0.0
Non-agricultural land	0.7	0.3	6.71	0.7	3.267	0.2	10.7	0.4
Woodland and forest	0.16	0.1	2.36	0.2	0.157	0.0	2.7	0.1
Other land	0.54	0.3	4.35	0.5	3.11	0.2	8.0	0.3
Total area of holdings	12.2	5.9	82.9	8.6	48.6	3.7	143.8	5.8
Total land area	5,181.7		6,134.5		3,401.9		14,718.1	
Arable land as % of total land area	0.22		1.10		1.30		0.83	

TABLE 5.3: AREA OF LAND HOLDINGS BY LAND USE AND DEVELOPMENT REGION, NEPAL, 2001/02 AND 1991/92

(In thousand hectares)

Land use	Development region					
	Eastern Region	Central Region	Western Region	Mid West. Region	Far West. Region	Nepal
			2001/02			
Total area of holdings	795.5	750.2	512.1	370.7	225.4	2,653.92
Agricultural land	745.61	712.02	482.26	345.22	212.53	2,497.66
Arable land	709.2	690.3	421.0	329.7	206.7	2,356.97
Land under temporary crops	701.2	683.2	415.7	324.5	201.5	2,326.12
Other arable land	8.07	7.07	5.27	5.20	5.25	30.86
Land under permanent crops	32.2	17.3	51.7	11.7	4.6	117.48
Land under permanent pasture	2.7	3.4	8.9	3.6	1.1	19.75
Ponds	1.5	0.9	0.6	0.2	0.1	3.5
% Agric land to total Agric land (Nepal)	29.85	28.51	19.31	13.82	8.51	100.0
Non-agricultural land	49.86	38.16	29.88	25.47	12.91	156.28
Woodland and forest	13.9	8.6	7.2	6.0	1.5	37.22
Other land	36.0	29.5	22.7	19.4	11.4	119.05
% Non-agric land to total non-agri (Nepal)	31.9	24.4	19.1	16.3	8.3	100.0
Total land area by region	2,845.6	2,741.0	2,939.8	4,237.8	1,953.9	14,718.1
% land area to total land area (Nepal)	19.3	18.6	20.0	28.8	13.3	100.0
Arable land as % of total land area	24.92	25.18	14.32	7.78	10.58	16.01
			1991/92			
Total area of holdings	783.2	719.7	566.4	324.7	203.3	2,597.40
Agricultural land	718.9	685.2	499.6	298.4	190.8	2,392.9
Arable land	699.8	668.3	474.3	292.0	189.1	2,323.4
Land under temporary crops	684.4	659.8	467.4	286.7	186.3	2,284.6
Other arable land	15.4	8.5	6.9	5.3	2.8	38.8
Land under permanent crops	12.3	9.4	5.4	1.5	0.8	29.4
Land under permanent pasture	5.5	6.3	19.5	4.7	0.9	36.9
Ponds	1.3	1.2	0.6	0.2	0.1	3.3
% Agric land to total Agric land (Nepal)	30.04	28.63	20.88	12.47	7.97	100.0
Non-agricultural land	49.86	38.16	29.88	25.47	12.91	156.3
Woodland and forest	13.9	8.6	7.2	6.0	1.5	37.2
Other land	36.0	29.5	22.7	19.4	11.4	119.1
% Non-agric land to total non-agri (Nepal)	31.9	24.4	19.1	16.3	8.3	100.0
Total land area by region	2,845.6	2,741.0	2,939.8	4,237.8	1,953.9	14,718.1
% land area to total land area (Nepal)	19.3	18.6	20.0	28.8	13.3	100.0
Arable land as % of total land area	24.59	24.38	16.13	6.89	9.68	15.79

Continuation.....

TABLE 5.3: AREA OF LAND HOLDINGS BY LAND USE AND DEVELOPMENT REGION, NEPAL, 2001/02 AND 1991/92

Land use	Development region					Nepal
	Eastern Region	Central Region	Western Region	Mid-West. Region	Far-West. Region	
			Percent			
			2001/02			
Total area of holdings	100.0	100.0	100.0	100.0	100.0	100.0
Agricultural land	93.7	94.9	94.2	93.1	94.3	94.1
Arable land	89.2	92.0	82.2	89.0	91.7	88.8
Land under temporary crops	88.1	91.1	81.2	87.5	89.4	87.6
Other arable land	1.0	0.9	1.0	1.4	2.3	1.2
Land under permanent crops	4.0	2.3	10.1	3.1	2.0	4.4
Land under permanent pasture	0.3	0.5	1.7	1.0	0.5	0.7
Ponds	0.02	a	0.01	a	a	0.13
Non-agricultural land	6.3	5.1	5.8	6.9	5.7	5.9
Woodland and forest	1.7	1.1	1.4	1.6	0.7	1.4
Other land	4.5	3.9	4.4	5.2	5.0	4.5
			1991/92			
Total area of holdings	100.0	100.0	100.0	100.0	100.0	100.0
Agricultural land	91.8	95.2	88.2	91.9	93.9	92.1
Arable land	89.4	92.9	83.7	89.9	93.0	89.5
Land under temporary crops	87.4	91.7	82.5	88.3	91.6	88.0
Other arable land	2.0	1.2	1.2	1.6	1.4	1.5
Land under permanent crops	1.6	1.3	1.0	0.5	0.4	1.1
Land under permanent pasture	0.7	0.9	3.4	1.4	0.4	1.4
Ponds	0.2	0.2	0.1	0.1	a	0.1
Non-agricultural land	6.4	5.3	5.3	7.8	6.4	6.0
Woodland and forest	1.8	1.2	1.3	1.9	0.8	1.4
Other land	4.6	4.1	4.0	6.0	5.6	4.6

a/Less than 0.01%

TABLE 5.3a: AREA OF LAND HOLDINGS BY LAND USE AND DEVELOPMENT REGION OF FEMALE HOLDERS, NEPAL, 2001/02

(In thousand hectares except percent)

Land use	Development Region							
	Eastern Region	Central Region	Western Region	Mid West. Region	Far West. Region	Total Female holders	Nepal Total	% Female to Total
Total area of holdings	38.73	31.78	48.02	17.20	8.04	143.77	2,653.92	5.42
Agricultural land	35.71	29.63	44.37	15.79	7.50	133.11	2,497.66	5.33
Arable land	34.09	28.96	37.25	14.96	7.31	122.56	2,356.97	5.20
Land under temporary crops	33.59	28.59	36.49	14.70	7.12	120.49	2,326.12	5.18
Other arable land	0.50	0.38	0.75	0.25	0.19	2.07	30.86	6.71
Land under permanent crops	1.53	0.48	6.09	0.69	0.15	8.94	117.48	7.61
Land under permanent pasture	0.09	0.19	1.03	0.15	0.05	1.51	19.75	7.65
Ponds (actual area in hectares)	7.9	19.4	46.4	0.7	1.3	75.7	3,452.5	2.19
% Agric land (Female)to total Agric land	1.43	1.19	1.78	0.63	0.30	5.33	100.0	…
Non-agricultural land	3.01	2.13	3.60	1.40	0.53	10.68	156.28	6.83
Woodland and forest	0.87	0.41	0.95	0.38	0.06	2.68	37.22	7.20
Other land	2.14	1.72	2.65	1.02	0.47	8.00	119.05	6.72
% Non-agric land to total non-agri (Nepal)	1.9	1.4	2.3	0.9	0.3	6.8	100.0	…
Total land area by region	2,845.6	2,741.0	2,939.8	4,237.8	1,953.9	…	14,718.1	…
% land area to total land area (Nepal)	19.3	18.6	20.0	28.8	13.3	…	100.0	…
Arable land of female holders as % of total land area	1.20	1.02	1.31	0.53	0.26	0.83	…	…
				Percent				
Total area of holdings	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Agricultural land	92.2	93.2	92.4	91.8	93.3	92.6	94.1	
Arable land	88.0	91.1	77.6	87.0	90.9	85.3	88.8	
Land under temporary crops	86.7	89.9	76.0	85.5	88.6	83.8	87.6	
Other arable land	1.3	1.2	1.6	1.5	2.3	1.4	1.2	
Land under permanent crops	4.0	1.5	12.7	4.0	1.8	6.2	4.4	
Land under permanent pasture	0.2	0.6	2.1	0.9	0.6	1.1	0.7	
Ponds	0.02	0.06	0.10	a	a	0.05	0.13	
Non-agricultural land	7.8	6.7	7.5	8.2	6.6	3.7	5.9	
Woodland and forest	2.2	1.3	2.0	2.2	0.8	0.0	1.4	
Other land	5.5	5.4	5.5	5.9	5.8	7.4	4.5	

TABLE 5.4: AREA OF ARABLE LAND BY SUB-ECOLOGICAL BELT, 1991/92 AND 2001/02

(In thousand hectares)

Development region	Mountain		Hill		Tarai		Total	
	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02
Total	162.3	200.0	871.3	863.0	1,289.7	1,294.0	2,323.4	2,357.0
Eastern	55.0	63.5	233.9	214.4	410.8	431.4	699.8	709.2
Central	54.4	63.6	216.4	213.2	397.5	413.6	668.3	690.3
Western	1.7	2.0	249.9	225.5	222.7	193.5	474.3	421.0
Mid Western	23.0	37.1	122.6	145.1	146.4	147.5	292.0	329.7
Far Western	28.2	34.0	48.6	64.7	112.3	108.0	189.1	206.7
				Percent				
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Eastern	33.9	31.7	26.8	24.8	31.9	33.3	30.1	30.1
Central	33.5	31.8	24.8	24.7	30.8	32.0	28.8	29.3
Western	1.0	1.0	28.7	26.1	17.3	15.0	20.4	17.9
Mid Western	14.2	18.5	14.1	16.8	11.4	11.4	12.6	14.0
Far Western	17.4	17.0	5.6	7.5	8.7	8.3	8.1	8.8

TABLE 5.5: ARABLE LAND AS PERCENT OF TOTAL LAND BY SUB-ECOLOGICAL BELT, 1991/92 AND 2001/02

(In percent)

Development region	Mountain		Hill		Tarai		Total	
	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02
Total	3.1	3.9	14.2	14.1	37.9	38.0	15.8	16.0
Eastern	5.3	6.1	21.8	19.9	56.5	59.3	24.6	24.9
Central	8.7	10.1	18.3	18.1	42.6	44.3	24.4	25.2
Western	0.3	0.3	13.6	12.3	42.3	36.8	16.1	14.3
Mid Western	1.1	1.7	8.9	10.6	20.0	20.2	6.9	7.8
Far Western	3.6	4.3	7.2	9.6	23.2	22.3	9.7	10.6

TABLE 5.6: NUMBER AND PERCENT OF LAND HOLDINGS WITH EACH LAND USE TYPE BY SIZE OF HOLDING AND BY SEX OF HOLDER, NEPAL, 2001/02

(Number of holdings in thousand)

Land use	Size of holding											
	Less than 0.5 ha	0.5 - <2.0	2.0 ha and above	Total	Less than 0.5 ha	0.5 - <2.0	2.0 ha and above	Total	Less than 0.5 ha	0.5 - <2.0 ha	2.0 ha and above	Total
	All holdings				Female holders				Male holders			
Arable land												
Temporary crops	1,549.2	1,503.3	253.8	3,306.3	166.0	92.9	7.7	266.6	1383.2	1410.4	246.1	3039.7
Total arable land	1,551.1	1,503.6	254.0	3,308.6	166.2	92.9	7.7	266.8	1384.9	1410.7	246.3	3041.8
Other agricultural land												
Permanent crops	162.7	357.6	97.6	618.0	21.9	27.6	3.0	52.5	140.8	330.0	94.6	565.5
Permanent pasture	14.4	50.6	14.1	79.0	1.9	3.7	0.4	6.0	12.4	46.9	13.7	73.1
Ponds	1.8	9.2	8.7	19.6	0.1	0.4	0.2	0.6	1.7	8.9	8.5	19.1
Non-agricultural land												
Woodland and forest	32.5	133.3	39.0	204.8	3.6	10.9	1.5	16.0	28.9	122.4	37.5	188.8
Total land holdings	1,578.9	1,504.3	254.2	3,337.4	168.3	92.9	7.8	269.0	1410.6	1411.5	246.4	3068.4
	Percent											
Arable land												
Temporary crops	98.1	99.9	99.9	99.1	98.6	100.0	99.1	99.1	98.1	99.9	99.9	99.1
Total arable land	98.2	100.0	99.9	99.1	98.7	100.0	99.1	99.2	98.2	99.9	99.9	99.1
Other agricultural land												
Permanent crops	10.3	23.8	38.4	18.5	13.0	29.7	38.7	19.5	10.0	23.4	38.4	18.4
Permanent pasture	0.9	3.4	5.6	2.4	1.1	3.9	4.8	2.2	0.9	3.3	5.6	2.4
Ponds	0.1	0.6	3.4	0.6	0.0	0.4	2.1	0.2	0.1	0.6	3.4	0.6
Non-agricultural land												
Woodland and forest	2.1	8.9	15.4	6.1	2.1	11.8	19.6	6.0	2.1	8.7	15.2	6.2
Total land holdings	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 5.7: AREA OF LAND HOLDINGS BY TYPE OF LAND – ECOLOGICAL BELTS AND DEVELOPMENT REGIONS BY SEX OF HOLDER, NEPAL, 2001/02

(Area in thousand hectares)

Geographic Area	Area			% of wet land	Area			% of wet land	Area			% of wet land
	Wet land	Dry land	Total		Wet land	Dry land	Total		Wet land	Dry land	Total	
	All holdings				Female holders				Male holders			
Ecological Belt												
Mountain	71.8	146.9	218.7	32.8	4.0	8.2	12.3	32.7	67.8	138.7	206.4	32.8
Hill	327.5	711.1	1,038.6	31.5	25.1	57.9	83.0	30.2	302.4	653.3	955.7	31.6
Tarai	1,206.9	189.7	1,396.6	86.4	39.8	8.8	48.6	81.9	1167.2	181.0	1348.2	86.6
Development Region												
Eastern	518.4	277.1	795.5	65.2	21.2	17.5	38.7	54.7	497.2	259.6	756.8	65.7
Central	503.4	246.8	750.2	67.1	17.7	14.0	31.8	55.8	485.7	232.7	718.4	67.6
Western	284.7	227.4	512.1	55.6	19.6	28.4	48.0	40.9	265.1	199.0	464.1	57.1
Mid Western	166.5	204.2	370.7	44.9	6.4	10.8	17.2	37.0	160.2	193.3	353.5	45.3
Far Western	133.2	92.3	225.4	59.1	3.9	4.1	8.0	48.6	129.3	88.1	217.4	59.5
NEPAL	1,606.2	1,047.7	2,653.9	60.5	68.8	74.9	143.8	47.9	1537.4	972.9	2510.3	61.2

TABLE 5.8: NUMBER AND AREA OF LAND HOLDINGS BY TYPE OF LAND AND SIZE OF THE HOLDING AND BY SEX OF HOLDER, NEPAL 2001/02

(In thousand except percent)

Size of holding	Type of land				
	Total number of holdings	Land area in hectares			% of Wet land
		Wet Land	Dry Land	Total	
	All holdings				
Less than 0.5 ha	1,578.9	189.3	200.9	390.2	48.5
0.5 - 2.0 ha	1,504.3	814.2	619.4	1,433.6	56.8
2.0 ha and over	254.2	602.7	227.4	830.1	72.6
Total	3,337.4	1,606.2	1,047.7	2,653.9	60.5
	Female holders				
Less than 0.5 ha	168.3	16.2	22.1	38.3	42.3
0.5 - 2.0 ha	92.9	38.2	43.5	81.7	46.8
2.0 ha and over	7.8	14.4	9.3	23.7	60.8
Total	269.0	68.8	74.9	143.8	47.9
	Male holders				
Less than 0.5 ha	1,410.6	173.1	178.8	351.8	49.2
0.5 - 2.0 ha	1,411.5	776.0	575.9	1,351.9	57.4
2.0 ha and over	246.4	588.3	218.1	806.4	72.9
Total	3,068.4	1,537.4	972.8	2,510.2	61.2

CHAPTER 6
TEMPORARY CROPS

Land under temporary crops has been increasing steadily. From 2,250 thousand hectares in 1981/82 it increased to 2,326 thousand hectares in 2001/02. Compared to 1981/82, the land under temporary crops increased by 34.4 thousand hectares (1.5%) in 1991/92. Likewise, the increase between 1991/92 and 2001/02 was 41.5 thousand hectares (1.8%).

The total area sown under temporary crops had increased by 23 percent between 1981/82 and 1991/92. The increase between 1991/92 and 2001/02 was comparatively low and was only 4.63 percent. Crops such as rice, maize, wheat occupy important position among the cereal crops grown in the country. And among other temporary crops legumes and oilseeds are important crops.

About 97.5 percent of the holdings reported having area under cereal crops in 2001/02. The percentage was even higher in 1991/92 and was at 98 percent. However, the percentage of holdings that cultivated cereals grain in 1981/82 was only 78.1 percent.

Area under vegetable has increased substantially during the period between 1981/82 and 2001/02. From 17 thousand hectares in 1981/82 the area under vegetables increased to 60.0 thousand hectares in 2001/02. Unlike area under vegetable, area under cash crops, oilseeds and spices do not show a steady trend.

Cropping intensity, which gives the measures of the extent of the use of the land, shows a positive trend. The cropping intensity has increased from 1.45 in 1981/82 to 1.75 in 1991/92 and to 1.80 in 2001/02.

Table 6.0 Summary Statistics

Description	1981/82	1991/92	2001/02
Arable land (‘000 ha)	2,287.5	2,323.4	2,357.0
Land under temporary crops (‘000 ha)	2,250.2	2,284.6	2,326.1
Temporary crop sown (‘000 ha)	3,315.0	4,063.0	4,251.3
Cropping intensity	1.45	1.75	1.80
Cereal grain (‘000 ha)	2,509.0	3,251.7	3,423.1
(Rice, Wheat, Maize, Other cereals)			
Legumes (‘000 ha)	334.6	340.4	379.4
Tubers (‘000 ha)	86.0	79.2	92.5
Cash crops (‘000 ha)	86.0	62.9	60.6
Oilseeds (‘000 ha)	224.1	260.1	214.2
Spices (‘000 ha)	58.1	29.3	40.7
Vegetables (‘000 ha)	17.2	39.5	60.0

6.1 Land under temporary crops

In Nepal, the agricultural land portion of the holding is composed of arable land, land under permanent crops, land under permanent meadows and pasture and pond. Land under temporary crops is a dominant composition of arable land. As presented in Chapter 5 Land Use, land under temporary crops comprised 87.6% of the total area of the holding with a total area of 2.3261 million hectares in 2001/02. Of this number 120.5 thousand hectares or 5.2% of the total was operated by female holders while the rest belong to the male holders.

The land under temporary crop is the physical area of land where annual crops are grown. Annual crops or temporary crops are plants whose growing cycle does not exceed one year. The plants are destroyed after harvest. Some crops, however, that remain in a field for more than one year were also considered as temporary crops like sugarcane, asparagus and strawberries. Most of the annual crops that are included in the census are cereal grains, legumes, oilseeds, leafy vegetables, flower vegetables, fruit vegetables, root crops and bulbs and cash crops. TABLE 6.1 would show a listing of the major temporary crops given prominence in the 2001/02 Census of Agriculture.

In accounting for the number of times that land under temporary crops was used, the actual area planted and harvested for every crop was reported. It is possible that a parcel of land under temporary crops can be counted as many times as planted and harvested during the reference year. Thus, the cropped area would be equal to or more than the physical area of the land under temporary crops.

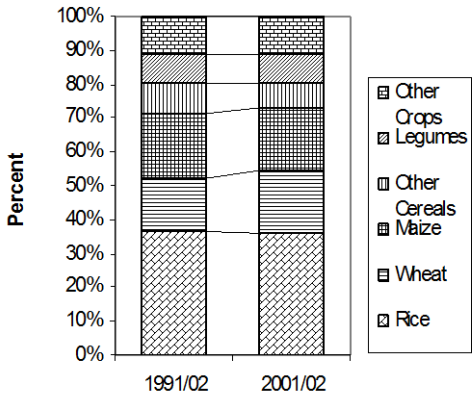
Cropped area also includes the area occupied by temporary crops planted in land under permanent crops but the area is negligible.

6.2 Composition of temporary crops

In 2001/02, out of the 3.3374 million agricultural land holdings in Nepal, 3.3054 holdings or 99.0% of the total were engaged in temporary crop cultivation. The total area cultivated to annual crops in 2001/02 was 4.2513 million hectares. This represents the cropped area out of a physical land area of 2.3261 million hectares of land under temporary crops that resulted in a utilization rate of 183.8%.

In 1991/92, out of the 2.7039 million agricultural land holdings in Nepal, 2.7019 million holdings or 99.9% of the total were engaged in the cultivation of temporary crops. The land under temporary crops in 1991/92 was 2.2846 million hectares. The

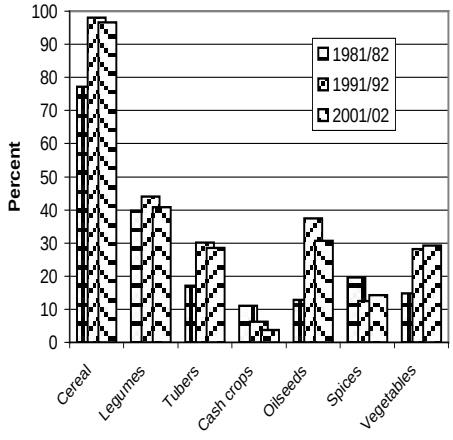
FIGURE 6.1: COMPOSITION OF CROP AREA, NEPAL, 1991/92 AND 2001/02



total area cultivated to temporary crops reported in 1991/92 was 4.063 million hectares. This is the cropped area out of a physical area of 2.2846 million hectares. The utilization rate of land under temporary crops in 1991/92 was 177.8%. In 1981/82, out of 2.1857 million agricultural land holdings, 2.1574 million or 98.7% were engaged in the cultivation of annual crops, which is almost at par with the 2001/02 proportion. The physical area of land under temporary crops was 2.2502 million hectares. The total cropped area reported on annual crops was 3.315 million hectares. The utilization rate computed for 1981/82 is 147.3%.

Based on the above findings, the 2001/02 agricultural holders utilized their land under temporary crops 83.8% more than the physical area, this means that the

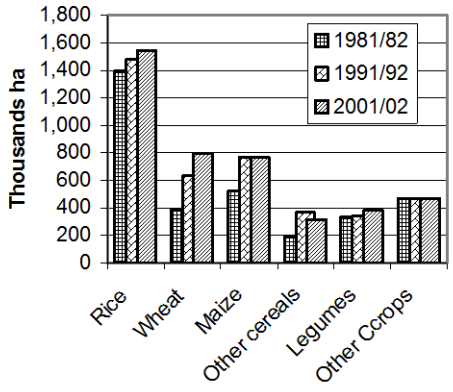
FIGURE 6.2: CROP GROWERS, NEPAL, PERCENT OF ALL HOLDINGS



holdings have practiced double cropping during the agricultural year. The 2001/02 holdings surpassed the use of the land by 6 percentage points over those in 1991/92. But what is revealing is the sudden increase in the use of the land between 1981/82 and 1991/92 where the utilization rate had increased by 30.5 percentage points. It appears that the high intensity of use of the land under temporary crops started to increase in the nineties.

There are seven major groups of temporary crops covered by the Agriculture Census,

FIGURE 6.3: CROP AREAS, NEPAL

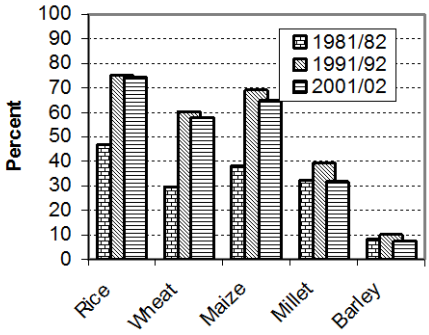


namely: cereal grains, legumes, tubers, cash crops, oilseeds, spices and vegetables.

The most common temporary crops grown was cereal grains where 97.5% of the holdings reported to have planted in 2001./02. The percentage was higher in 1991/92 at 98% although in 1981/82 the percentage of holdings that cultivated cereal grains was only 78.1%. The cropped area planted to cereal grains in 2001/02 was 3.423 million hectares which was 80.1% of the total cropped area reported for this year. The cropped area for cereal grains in 1991/92 was 3.2517 million hectares which was also 80% of the total cropped area, see TABLE 6.1.

The second important group of annual crops that many holdings raised is legumes where 1.3623 million holdings or 41.2% of the total reported legumes cultivation with a total cropped area of 379.4 thousand hectares. This cropped area was 8.9% of the total cropped area reported in 2001/02.

FIGURE 6.4: CEREAL GROWERS, NEPAL, PERCENT OF ALL HOLDINGS



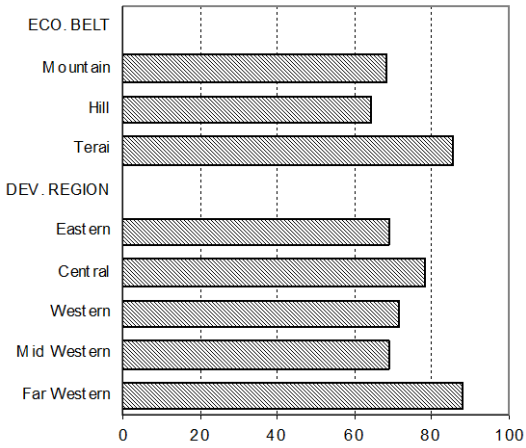
The third ranking group of annual crops that almost a third of the holdings raised is oilseeds with 1.0214 million holdings or 30.9% of the total holdings. The cropped area reported was only 5% of the total cropped area. Vegetables and tubers groups of crops almost shared the same number of holdings cultivating them: 978.1 thousand holdings engaged in vegetable cultivation and 950.5 thousand holdings engaged in planting tubers. The cropped area for tubers was 2.2% of the total while for vegetables only 1.4% of the total.

Spice growing was reported by 14.3% of the holdings while cash crops cultivation was engaged in only by 3.8% of the holdings in 2001/02. Cash crop growing in 1981/82 was engaged in by 11.2% of the holdings and this went down to 6.3% in 1991/92.

6.3 Rice

Rice growing in Nepal is still the most popular cereal grains cultivated by more than three-fourths of the holdings, 76.7% in 1991/92 and 77.0% in 2001/02. While the proportion is almost the same there was actually an increase in the number of holdings planting rice for all the three-season rice crops. The number of holdings engaged in planting early rice was 184.5 thousand in 1991/92 and this number increased to 193.6 thousand in 2001/02, or an increase of 4.9%; for the main rice, 1.906 million holdings in 1991/92 and increased to 2.3345 million in 2001/02 or an increase of 22.5%; and for upland rice,

FIGURE 6.5: RICE GROWERS, 2001/02, PERCENT OF HOLDINGS



from 189.9 thousand holdings in 1991/92 to 233.1 thousand holdings in 2001/02, or an increase of 22.8%, even a little bit higher than the increase in the planting of main rice.

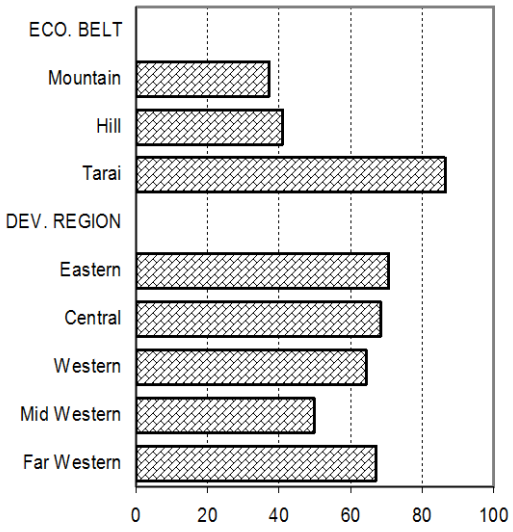
As a whole, the total number of holdings that were engaged in rice growing in 2001/02 was 2.4816 million compared with 2.0375 million in 1991/92 or an increase in the number of holdings growing rice by 21.8% within the past ten years. The total cropped area devoted to the cultivation of rice was 1.5446 million hectares which is 45.1% of the total cropped area planted to cereal grains in 2001/02. This rice cropped area is only 4.3% higher than in 1991/92.

Of the 2.4816 million holdings growing rice, 1.2627 million or 50.9% were found in the Tarai belt; 1.0156 million holdings or 40.9% were in Hill belt and the rest (203.3 thousand or 8.2%), were located in the Mountain belt, see TABLE 6.2. As a proportion to the arable land found in the ecological belt, both Tarai and Hill belts reported the highest on rice cropped area relative to the area of the arable land, which was 182.7% while Mountain belt reported 167.7%.

The arable land area in Tarai was 1.294 million hectares and in Hill belt, 863 thousand hectares. Mountain belt reported 200 thousand hectares of arable land. At the national level, the average area of rice farms in 2001/02 was 0.46 hectare that is about 36.1% of the average area under temporary crops. The average size of the holding was 0.80 hectare therefore the land devoted to rice, on the average, is about 57.5% of the holding.

Tarai belt registered the highest average 0.76 hectare on rice followed far behind by Mountain belt and Hill belt with 0.25 hectare and 0.22 hectare, respectively, see TABLE 6.4. Also in the average area sown for rice, Tarai belt reported the highest average of 0.88 hectare while that of the Mountain belt and Hill belt, 0.37 hectare and 0.35 hectare, respectively (TABLE 6.5). However, in terms of usage of rice land, on the average, Tarai holdings reported a utilization rate of 115.8% only compared with much higher average utilization rate for rice growers in

FIGURE 6.6: RICE AREA, 2001/02, PERCENT OF ARABLE LAND



Mountain belt and Hill belt at 148.0% and 159.1%, respectively.

By development region, Central region reported the most number of holdings engaged in rice culture where 803.3 thousand or 32.4% of the total rice growers in the country. Eastern region reported 22.2% of the total rice growers while Western region had 20.6%. These three regions reported 75.2% of all rice growers in the country. The rest of the rice growers were found in Mid Western region with 13% of the total and in Far Western region, 11.8%. While Central region reported the most number of holdings growing rice, Eastern region reported the biggest area planted to rice with 500.5 thousand hectares compared with 471.0 thousand hectares found in Central region. These two regions accounted 971.5 thousand hectares of rice land or 62.9% of the total area under rice cultivation in 2001/02. Western region had 17.5% of the total rice land while Mid Western and Far Western regions reported 10.6% and 9.0%, respectively. (TABLE 6.7)

Eastern region reported the highest average of rice cropped area at 0.63 hectare, which is 40.6% of the area under temporary crops, followed by Central region with 0.46 hectare; Far Western region with 0.42; Western region, 0.38 hectare and Mid-Western region, 0.35 hectare. The rice cropped area for the other four development regions is a little more than one-third of the total cropped area of temporary crops. When the average area sown is viewed from the holdings that were actually raising rice, the highest average was still reported by Eastern Region at 0.91 hectare followed far behind by Central region with an average of 0.59 hectare. All the other development regions reported an average sown of about half a hectare, see TABLE 6.9.

Comparatively, the proportion of holdings with less than half a hectare raising rice crop increased in 2001/02 compared with 1991/92 from 63.7% to 65.4% while the proportion of holdings raising crops in 2001/02 among holdings with area of 0.5 to less than 2 hectares stayed at par with 1991/92 but for large holdings of 2 hectares and over, there was a big decline over 1991./92 from 92.3% to 83.7% in 2001/02.

For the area planted to rice, there has been an increase to 58.7% in 2001/02 among holdings with half a hectare or less compared with only 49% of the total temporary crop areas in 1991/92. There is also an increase in the rice area of holding size 0.5 hectare to less than 2 hectares, from 58.9% in 1991/92 to 64.5% in 2001/02. The actual area increased from 649.2 thousand hectares to 824.4 thousand hectares, an increase of about 27.0%. However, among the large farms, a decrease in proportion was noted from 73.3% in 1991/92 to 70.5% in 2001/02. In actual rice area, the decline was from 704.2 thousand hectares in 1991/92 to 519.2 hectares in 2001/02, a decrease of 26.3%, see TABLE 6.11.

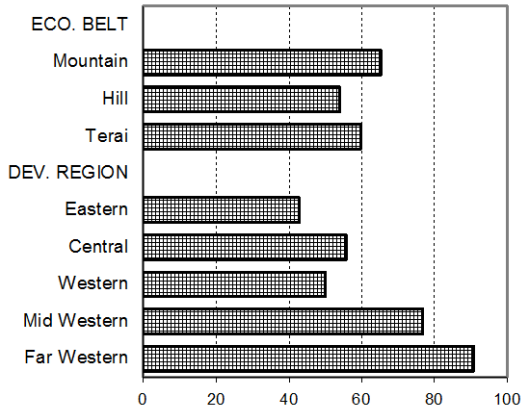
The distribution of the number of rice growers and other major cereal crops in the

different districts is shown in TABLE 6.14. Also in this table are: the average area of arable land, total area sown and average area sown by districts. The biggest rice grower in terms of area and the number of holdings is the district of Jhapa with 66.3 thousand holdings with rice in an area of 40.3 thousand hectares. However, the highest average sown was reported by Okhaldunga district at 0.62 hectare with Jhapa district following closely at 0.61 hectare. The district of Okhaldunga belongs to Eastern Hill region while Jhapa district is in Eastern Tarai. Both districts are in the eastern part of Nepal.

6.4 Wheat

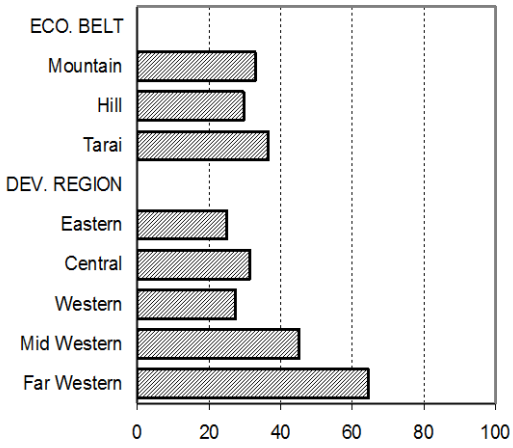
Wheat is becoming an important cereal grain crop during the past two decades. In

FIGURE 6.7: WHEAT GROWERS, 2001/02, PERCENT OF HOLDINGS



1981/82 there were only 649.5 thousand holdings or 38.5% of the total holdings raising temporary crops that planted wheat in a total area of 389.2 thousand hectares which is 15.5% of the total land under temporary crops. In 1991/92, there was a sudden increase of the number of holdings planting wheat to 1.9063 million, an increase of 151.9% over 1981/82 holdings. The wheat area also increased but not as much as the number of holdings but still a big increase of 63% over the 1981/82 figure. The increment in the number of holdings and the area planted to wheat continued up to 2001/02. The number of holdings increased to 1.9351 million, an increase of 18.3% and the area planted to wheat also increase by 25.3%, from 633.1 thousand hectares in 1991/92 to 793.5 thousand hectares in 2001/02.

FIGURE 6.8: WHEAT AREA, 2001/02, PERCENT OF ARABLE LAND



As a whole, 60.1% of the total holdings in 2001/02 cultivated wheat although the total area was only 23.2% of the total cropped area under temporary crops. Of the 1.9351 holdings engaged in the propagation of wheat, 883.9 thousand or 45.7% were found in Tarai belt while 856.5 thousand or 44.3% were located in Hill belt and the rest, (194.7 thousand) were in the Mountain belt.

Among the cereal grains crops, wheat ranks second in importance in Tarai belt with 59.7% of the holdings reporting as growers while in Hill belt and Mountain belt, wheat ranks third in importance, the first two being rice and maize.

Relative to the area of arable land within the belt in proportion to the area planted to wheat, the trend is going up for all the three belts. Tarai belt registered the biggest increase proportion to the arable land from 18.8% in 1981/82 to 28.0% in 1991/92, then to 36.4% in 2001/02. There was also a big jump in the proportion of arable land

to wheat crop area in Mountain belt but this occurred between 1981/82 to 1991/92 from 13.1% in 1981/82 to 30.0% in 1991/92. However, the increase in 2001/02 was only 2.8 percentage points over the 1991/92 figure. The same trend was observed in the Hill belt where the proportion started at 14.9% in 1981/82, then increased to 25.7% in 1991/92 then to 29.7% in 2001/02.

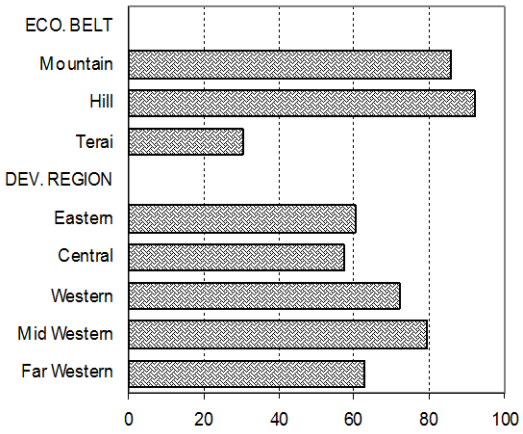
The average area devoted to the culture of wheat is comparatively small relative to the average area planted to rice in 2001/02. Tarai belt reported the highest average size of 0.32 hectare while the Hill belt reported the least with 0.16 hectare. Mountain belt average size of wheat area was 0.22 hectare. But when the average of area sown to wheat was obtained, the average area is almost comparable to that of rice. In Tarai belt, the average area sown to wheat was 0.53 hectare, 0.36 hectare in Hill belt and 0.34 hectare in the Mountain belt. The distribution of the holdings that raise wheat by development region showed that Central Region got the biggest number of wheat growers (572.1 thousand) which is 29.6% of the total while the rest of the four regions almost equally shared in the rest of the holdings ranging from 302 thousand in Far Western region to 361 thousand in Mid-Western region, see TABLE 6.6.

Of the 793.5 thousand hectares planted to wheat, 217.8 thousand hectares are located in Central region, which is 27.4% of the total. The second biggest area of wheat was found in Eastern region with 177.5 thousand hectares or 22.4% of the total. Almost half of the total wheat crop area was shared by the three regions as follows: 148.7 thousand or 18.7% for Mid-Western region; 133.6 thousand hectares or 16.8% for Far-Western region and 116 thousand hectares or 14.6% for Western region.

The area devoted to wheat growing in Far-Western region ranks almost equally with rice where about 65% of the cropped areas under temporary crops were planted to wheat compared with 67% of the area under temporary crops was used in rice growing. In the other four regions, only about one-fourth of the area under temporary crops was utilized for wheat growing.

Most of the wheat growers belong to holding size of 0.5 to less than 2 hectares with 988.8 thousand holdings reporting representing about 51% of all wheat growers. Only 194.7 thousand holdings belong to the large holding group of at least 2 hectares while the rest (751.6

FIGURE 6.9: MAIZE GROWERS, 2001/02, PERCENT OF HOLDINGS



thousand), belong to the holding size of loess than half a hectare, see TABLE 10.

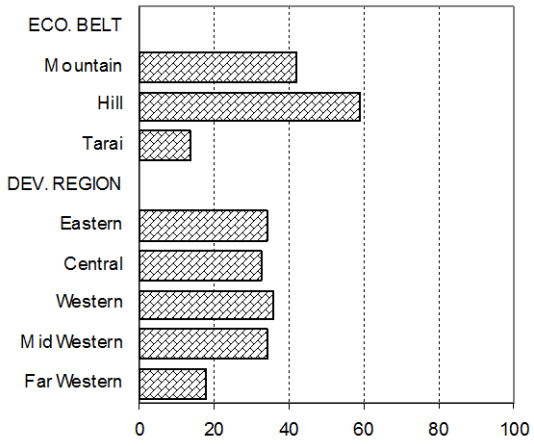
The area planted to wheat is only about one-third of the area of arable land for all the different sizes of the holding, see TABLE 6.11.

The biggest wheat growers reported among districts are those of the districts of Rupandehi and Kailali with 58.3 thousand each followed by Accham district with 41.4 thousand wheat growers. On the highest average size of wheat cropping area, the district of Bardiya reported the highest at 0.67 hectare followed by Kailali with 0.65 hectare.

6.5 Maize

Maize cultivation is second in importance to rice growing both in the number of holdings and the area planted to it. In 2001/02, there were 2.1663 million holdings that reported the cultivation of maize. This number represents 67.2% of the total holdings with land under temporary crops. The total crop area devoted to maize was 769.4 thousand hectares in 2001/02 which is 22.5% of the total cropped area in the same year. In 1991/92 the cropped area reported on maize was a little less at 768.7 thousand hectares, a difference of only 700 hectares. In short, the area devoted to maize has not improved within the last ten years.

FIGURE 6.10: MAIZE AREA, 2001/02, PERCENT OF ARABLE LAND



Most of the maize growers were found in the Hill belt where 1.4618 million or 67.5% of the total maize growers were found. Within the Hill belt, maize growers comprised 92.1% of the total holdings raising temporary crops. Tarai reported a total of 448.3 thousand maize growers which is only 30.3% of the total holdings with temporary crops within Tarai belt but 20.7% of the total maize growers in Nepal while the Mountain belt reported 256.2 thousand maize growers which is 11.8% of the total holdings raising maize. However, within the belt area, the proportion of maize growers to the total holdings with temporary crop was 85.9%, see Figure 6.9.

At the national level, the total area planted to maize is only 32.6% of the total area of arable land in 2001/02, a slight decrease when compared with the proportion in 1991/92 which was 33.1% although the area cultivated to maize did not decrease.

However, if we examine the proportion of maize area to the arable land within the belt, Tarai belt reported a very small proportion of 13.5% area of maize relative to the total arable land of 1.294 million hectares. In contrast, the Hill belt reported the highest proportion of maize area relative to the arable land at 59.1% while the Mountain belt reported 42.0%. In fact, in these two belts, maize is the most important crop area-wise. Rice is only second in importance according to the area devoted to the crop.

Central development region reported the most number of maize growers with 586.7 thousand that is equivalent to 27.1% of the total maize growers in the country. The second highest number of maize growers was found in Western region with 516.2 thousand holdings or 23.8% of the total. Eastern region reported 22.2% of the total Mid-Western region and Far Western region had 17.2% and 9.4%, respectively.

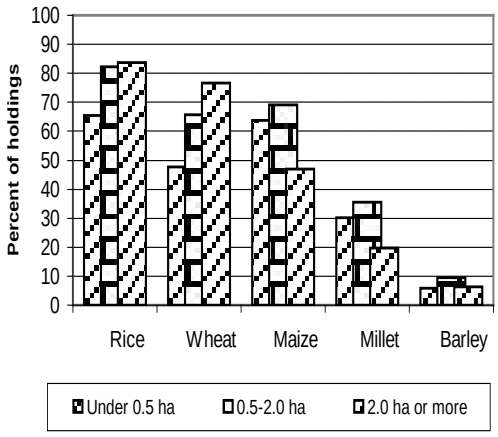
Of the 769.4 thousand hectares planted to maize, 30.5% were in Eastern region; 28.6% in Central region; 19.0% in Western region; 14.1% in Mid-western region; and 4.7% in Far Western region, see TABLE 6.7. Eastern region reported the highest average cropped area planted to maize at 0.30 hectare while the lowest average was reported by Far-Western region at 0.11 hectare. (TABLE 6.8). More than a million maize growers have holding size of less than half a hectare and another million maize growers reported their holding size between half a hectare and less than 2 hectares. Only 119.6 thousand maize

holdings belong to the large holding category. This is only 5.5% of the total maize holdings but they control 16.9% of the total area planted to maize.

6.6 Other cereal grains

The other cereal grains that are important in farming are millet, barley and buckwheat. In 200102, however, it was

FIGURE 6.11: CEREAL PRODUCERS BY SIZE OF HOLDING, NEPAL, 2001/02



observed that the number of holdings engaged in the production of millet and barley has decreased slightly. Because of the decrease, it may have affected the area planted to these two cereal grain crops. In millet for instance, there were 1.065 million holdings that planted this crop, which is 40.2% of the total holdings engaged in temporary crop farming in 11991/92.

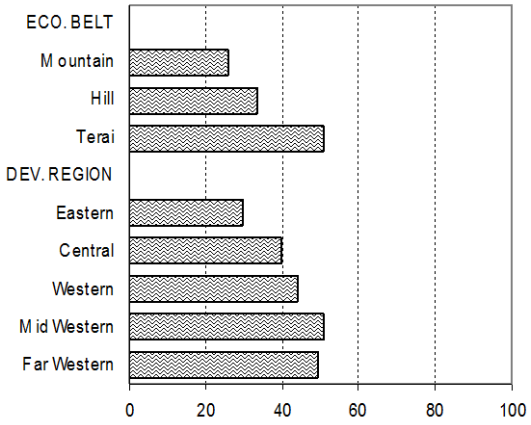
In 2001/02, the number decreased to 1.060 million holdings that resulted in the percentage of only 32.9% of the total. There was also a corresponding decrease in the area planted to millet from 301.5 thousand hectares in 1991/92 to 250.5 thousand hectares in 2001/02, a decrease of 16.9%. In the case of barley, there was also a decrease in the number of holdings planting this cereal. In 1991/92 there were 279.3 thousand holdings planting barley. This number decreased to 251 thousand or a decrease of 10.1%.

Buckwheat growing seems to have improved during the past ten years. In 1991/92 the total number of holdings engaged in the raising of buckwheat was 95.5 thousand. This number increased to 111.4 thousand, an increase of 16.6%. The area also increased from 16.3 thousand hectares to 20.8 thousand hectares, an increase of 27.6%.

6.7 Legumes

The cultivation of legumes was the second most important group of temporary crops raised by the holdings. In 2001/02, 1.3623 million holdings reported of having planted some kind of leguminous plants in their holding which comprised about 41.2% of all the holdings in the country

FIGURE 6.12: LEGUME GROWERS, 2001/02, PERCENT OF HOLDINGS



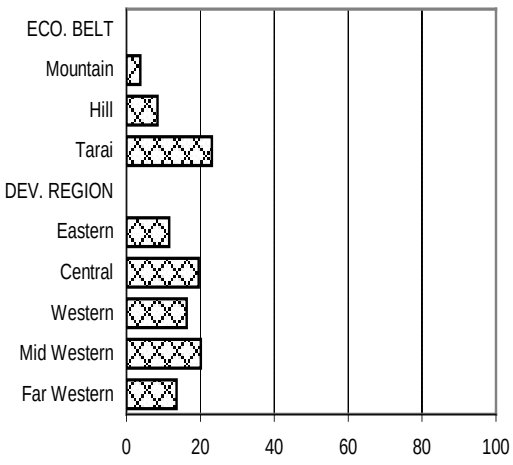
engaged in the cultivation of temporary crops. This percentage actually decreased when compared with 1991/92 where the percentage of holdings engaged in legumes cultivation was 44.1% of the total. However, the actual number of holdings did not decrease. In fact there was even an increase from 1.1916 million holdings in 1991/92 to 1.3623 million holdings with an increase of 14.3%.

The biggest number of holdings cultivating a particular kind of legume are those planting lentils with 756.1 thousand or 55.5% of the total holdings engaged in the

cultivation of legumes in 2001/02. The next biggest group composed of 257.2 thousand are holdings planting soybeans. Black grams, peas and cow pea cultivation was reported by about 170 thousand holdings each.

The area planted to legumes increased from 340.4 thousand hectares in 1991/92 to 379.4 thousand hectares in 2001/02, an increase of 11.5%. Among the legumes, lentils consisted of 62.4% of the total areas planted to legumes in 2001/02. This crop used to occupy only 47.2% of the total area devoted to legumes in 1991/92. The second important legume in terms of area planted is grass pea with 25.5 thousand hectares. Tarai belt reported the most number of holdings engaged in plating legumes with a total of 750.6 thousand which is 55.1% of the total legumes growers, while the hill belt reported 534.9 holdings or 39.3% of the total, see TABLE 6.2.

FIGURE 6.13: LEGUMES AREA, 2001/02, PERCENT OF ARABLE LAND



Of the 379.4 thousand hectares planted to legumes, 299.6 thousand hectares or about 79.0% of the total. This area represents 23.1% of the total arable land in Tarai belt. The area devoted to legumes in Hill Belt, which was 72.3 thousand hectares was only 8.4% of the total arable land in the belt. The least percentage was reported by Mountain belt with only 3.8% of the total arable land in the belt planted to legumes.

6.8 Tubers

Tubers group is another group of temporary crops that are equally important to the diet of the Nepalese people. This crop is grown all over Nepal but in small scale. The average area planted was only one-tenth of a hectare, which can be considered as subsistence type of farming. In 2001/02 there were 950.1 thousand holdings raising any kind of tubers, most of which are planting potatoes both during winter and summer. The tuber growers comprise about 28.7% of all holdings engaged in raising temporary crops in 2001/02. The area used in raising tubers, however, is comparatively small in size where only 2.2% of the total areas planted to temporary crops were planted. About 91% of these area were planted with potatoes, both winter and summer potatoes.

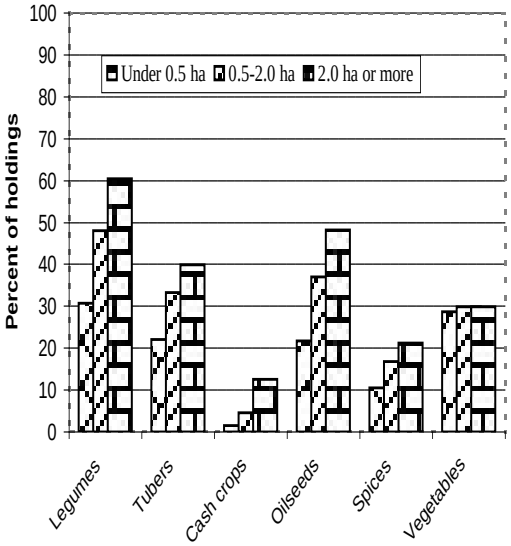
6.9 Cash Crops

Cash crops for the census of agriculture purposes are non-food crops that can provide immediate cash income to the farmer since these crops are not for table consumption of the family.

However, it is noted that, in general, the number of holdings engaged in raising cash crops has been declining through the years. The number of holdings raising any of these cash crops and corresponding area being cultivated to jute, tobacco and other cash crops has been declining fast during the past 20 years. However, the trend for sugar cane seems to be increasing both in number of holdings raising it and the area cultivated. As a whole, there were only 124.6 thousand holdings engaged growing cash crops involving a total gross area of 60.6 thousand hectares in 2001/02. Most of these holdings (68.3%) were engaged in

planting sugarcane which took 85.7% (or 51.9 thousand hectares out of 60.6 thousand hectares) of the total area planted to cash crops. Of the 124.6 thousand holdings engaged in cash crop farming, 100.4 thousand or 80.6% were found in Tarai belt in the central and eastern part, although some were also found in the western, mid-western, far western part of Tarai. Only 5.5 thousand holdings were found in the mountain belt area and 18.7 thousand in the Hill belt, see TABLE 6.2. Correspondingly, most of the areas belt with 58.8 thousand hectares representing 97% of the total area.

FIGURE 6.14: CROP GROWERS, NON-CEREAL CROPS BY SIZE OF HOLDING, NEPAL, 2001/02



6.10 Oilseeds

There were 1.0214 million holdings representing 30.9% of total holdings cultivating temporary crops that reported in the growing of oilseeds of only 214.2 thousand hectares or 5% of the total cropped area in 2001/02. The number of holdings increased by less than 1% over the last ten years but the area planted to oilseeds declined by 17.6% during the same period. These declines were observed in the planting of mustard and linseed both in the number of holdings and the area planted to these two crops. The gains were posted in the groundnut and other oilseeds both in the number of holdings and area although, comparatively speaking, the number of holdings and the area devoted to these crops do not even add up to 5% of the total oilseeds.

Looking back twenty years ago, there was actually a spurt increase in the number of holdings growing oilseeds by 260.1% between 1981/82 and 1991/92, see TABLE 6.1b. This may be the reason for the minimal increase in the number of holdings growing oilseeds in the last ten years (between 1991/92 and 2001/02).

While the trend had declined between 1991/92 and 2001/02, mustard and linseed crops are still the major oilseed crops in Nepal. Sesame crop is also on the decline although its importance to the whole oilseed group is only 2.2% of the total cropped area for this group.

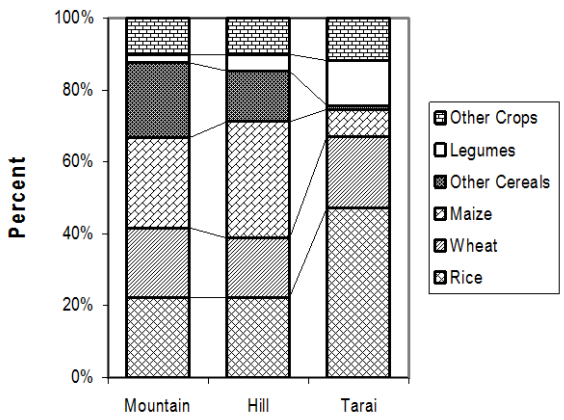
Most oilseed growers are located in Tarai (52.9%) and Hill belts (44.2%) and spread all over the different development regions. It is noted, however, that the number of holdings engaged in the growing of oilseeds in Eastern and Central regions was declining during the last ten years but the opposite is observed in the three other regions, namely: Western, Mid-western and Far Western regions, where the number of holders growing oilseeds had increased during the same period but only the area planted to oilseeds in Mid Western region had increased while that of Western region remained the same and Far Western region decreased by about half (from 28.2 thousand hectares in 1991/92 to 15.5 thousand hectares in 2001/02), see TABLE 6.7.

6.11 Spices

Spices as a group of crops is not considered a major crop for planting among holdings but certainly it is an important crop to the table of the Nepalese. In 2001/02 only 14.3% of the totals

holding raising temporary crops were engaged in spices growing in a very small

FIGURE 6.15: COMPOSITION OF CROP AREA, ECOLOGICAL BELTS, 2001/02



aggregate area of 40.7 thousand hectares which is only 1% of the total cropped area.

It is noted that there was an increase in the number of holdings growing spices between 1991/92 and 2001/02 from 336.4 thousand in 1991/92 to 473.7 thousand, an increase of 40.8%. Twenty years ago, the number of growers of this crop decreased by 21.3%. It was also noted that there was an increase of 38.9% in the total cropped area planted, from 29.3 thousand hectares to 40.7 thousand hectare between 1991/92 and 2001/02. Of the 473.7 thousand holdings engaged in growing spices, almost half of them (49%) were found in the Hill belt, 43.2% in Tarai belt and only 7.7% were in Mountain belt. The spice growers were spread across all regions with Eastern region reporting the biggest number of 144.4 thousand holdings.

6.12 Vegetables

Different kinds of vegetables are a common commodity in the diet of the Nepalese especially those who are vegetarian by choice. In Nepal, growing vegetables is not as lucrative as growing rice, which is a prime commodity in the food basket of a family. In 2001/02, the number of vegetable growers has not really increased proportionally relative to other temporary crops in the last ten years having registered a proportion of 29.6% in 2001/02 compared with 28.2% in 1991/92. However, if we examine its growth as a group, the number of holdings raising vegetables had increased by 28.2% in the last ten years, from 763.1 thousand holdings to 978.1 thousand holdings in 2001/02. The area used in growing vegetables also increased by 51.9% in the last ten years (see TABLE 6.1b) although proportionally with other crops, vegetable growing shares only1.4% of the total area under temporary crops in 2001/02, see TABLE 6.1

Majority of the holdings growing vegetables are found in Hill belt composed of 53.1% (518.9 thousand) of the total growers but a significant number (387.6 thousand) are found in Tarai belt.

In terms of area planted to vegetables, however, Tarai belt reported the most, which was 30.2 thousand hectares or a little more than half of the total crop area planted to vegetables in Nepal. The Mountain belt grows only an area of 3.7 thousand hectares.

The average area of vegetable crop was only 200 square meters for the country, which is the same size found in Hill and Tarai belts. Mountain vegetable garden is, on the average, only about 100 square meters. At the national level, the average area sown for vegetable crops in 2001/02 was 600 square meters or 0.06 hectare. Tarai belt exhibited the highest average of 800 square meters, an average use of the land 4 times a year compared with only 500 square meters each for the Hill belt and Mountain belt holdings, see Table 6.5. However, in terms of rate of usage of the vegetable area, the Mountain belt holdings reported the highest at 500%, followed by Tarai belt holdings with 400%. Hill belt holdings reported the lowest utilization rate of 250%. There may be a reason for

this low utilization rate in Hill belt. The holdings may have grown the long-maturing type of vegetables like asparagus and the like.

Vegetable growing holdings are spread all over the different development regions with the greatest number found in Central Western and Eastern regions and the least number in Far Western and Mid Western regions, see TABLE 6.6.

6.13 Cropping practices

Of the 3,364,139 holdings in Nepal, which include holdings with no land, 3,255,811 holdings cultivated temporary crops as a single crop or pure stand crop involving 3,990.4 million hectares. The actual physical area under temporary crops based on the land use classification in 2001/02 was 2.32612 million hectares. An indication of the double cropping, that is planting one crop in two or more cropping seasons, can be seen by the difference of the sown area and the physical area considering that mixed cropping is negligible. Based on the data on hand, there was 1.66428 million hectares double cropped in Nepal that is approximately 71.5% of the total physical area of land under temporary crops.

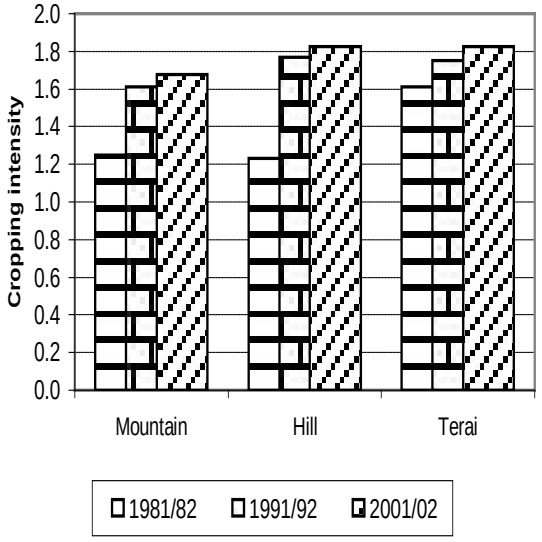
Mixed cropping or inter-planting of temporary crops and/or permanent crops with temporary crops is not a common practice among farmers in Nepal. In 2001/02, 667.1 holdings or 20% of the total holdings raising temporary crops practiced mixed cropping in an area of only 6.1% of the total area of temporary crops sown, see TABLE 6.15.

6.14 Cropping intensity

Cropping intensity measures the extent of the use of the land. There are two measures usually used, namely: the ratio of the area sown to temporary crops to the total arable land, and the ratio of the area sown to temporary crops to the total physical area of land under temporary crops.

The first ratio is a gross ratio because it includes land under temporarily fallow, temporary pastures and other arable land that were not actually utilized during the reference year. These are potential croplands. The second ratio provides the actual use of the same land as many times as it was used during the reference year, thus providing the actual intensity use of the land.

FIGURE 6.16: CROPPING INTENSITY



The graph below depicts the extent of the use of the land in the three ecological belts. TABLE 6.16 shows the comparative cropping intensities by ecological belt.

In 2001/02 Far Western and Central regions exhibited the highest cropping intensity of land use at 1.92 and 1.88, respectively.

By size of holding, those with half a hectare reported the highest cropping intensity of 2.04 compared with 1.65 only for large farms, see TABLE 6.18.

TABLE 6.1: DISTRIBUTION OF NUMBER OF HOLDINGS WITH TEMPORARY CROPS AND CROP AREA SOWN BY CROP TYPE, NEPAL, 1981/82 to 2001/02

Crop	(In thousand)						(In Percent)					
	Holdings reporting			Crop area (ha)			% to Holdings reporting			% to Crop area reported		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
Total	2,157.4	2,701.9	3,305.4	3,315.0	4,063.0	4,251.3	100.0	100.0	100.0	100.0	100.0	100.0
Cereal grains	1,685.6	2,649.0	3,221.6	2,509.0	3,251.7	3,423.1	78.1	98.0	97.5	75.7	80.0	80.1
							100.0	100.0	100.0	100.0	100.0	100.0
Rice	1,021.7	2,037.5	2,481.6	1,394.1	1,481.2	1,544.6	60.6	76.9	77.0	55.6	45.6	45.1
Early rice	na	184.5	193.6	na	79.2	59.4	na	7.0	6.0	na	2.4	1.7
Main rice	na	1,906.3	2,334.5	na	1,333.8	1,417.1	na	72.0	72.5	na	41.0	41.4
Upland rice	na	189.9	233.1	na	68.2	68.1	na	7.2	7.2	na	2.1	2.0
Wheat	649.5	1,635.8	1,935.1	389.2	633.1	793.5	38.5	61.8	60.1	15.5	19.5	23.2
Maize	838.6	1,872.6	2,166.3	522.5	768.7	769.4	49.8	70.7	67.2	20.8	23.6	22.5
Spring/winter maize	na	225.0	1,059.9	na	94.4	111.3	na	8.5	32.9	na	2.9	3.3
Summer maize	na	1,715.7	251.0	na	674.3	658.1	na	64.8	7.8	na	20.7	19.2
Millet	709.0	1,065.8	1,060.0	154.4	301.5	250.5	42.1	40.2	32.9	6.2	9.3	7.3
Barley	183.8	279.3	251.0	27.7	46.2	39.3	10.9	10.5	7.8	1.1	1.4	1.1
Buckwheat	48.0	95.5	111.4	10.8	16.3	20.8	2.8	3.6	3.5	0.4	0.5	0.6
Other cereals	na	33.8	35.9	na	4.7	4.9	na	1.3	1.1	na	0.1	0.1
Legumes	870.0	1,191.6	1,362.3	334.6	340.4	379.4	40.3	44.1	41.2	10.1	8.4	8.9
							100.0	100.0	100.0	100.0	100.0	100.0
Soyabeans	244.6	256.6	257.2	15.9	16.7	17.8	28.1	21.5	18.9	4.8	4.9	4.7
Black gram	215.0	210.0	172.3	13.8	19.2	19.4	24.7	17.6	12.6	4.1	5.6	5.1
Red gram	111.2	143.3	104.2	18.4	20.3	12.7	12.8	12.0	7.6	5.5	6.0	3.3
Grass pea	260.2	145.2	95.5	110.1	56.6	25.5	29.9	12.2	7.0	32.9	16.6	6.7
Lentils	278.7	513.1	756.1	102.8	160.7	236.8	32.0	43.1	55.5	30.7	47.2	62.4
Gram	181.5	92.1	81.1	51.1	19.6	11.5	20.9	7.7	6.0	15.3	5.8	3.0
Peas	89.0	109.5	177.8	6.6	12.7	18.1	10.2	9.2	13.1	2.0	3.7	4.8
Green gram	na	17.8	16.3	na	4.2	3.4	na	1.5	1.2	na	1.2	0.9
Horse gram	100.8	88.7	82.0	7.4	14.2	10.6	11.6	7.4	6.0	2.2	4.2	2.8
Cow pea	na	134.3	171.1	na	5.9	10.6	na	11.3	12.6	na	1.7	2.8
Other legumes	63.1	131.9	135.6	6.7	10.3	13.0	7.3	11.1	10.0	2.0	3.0	3.4

TABLE 6.1: DISTRIBUTION OF NUMBER OF HOLDINGS WITH TEMPORARY CROPS AND CROP AREA SOWN BY CROP TYPE, NEPAL, 1981/82 to 2001/02

Crop	(In thousand)						(In Percent)					
	Holdings reporting			Crop area (ha)			% to Holdings reporting			% to Crop area reported		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
Tubers	376.5	814.5	950.1	86.0	79.2	92.5	17.5	30.1	28.7	2.6	1.9	2.2
							100.0	100.0	100.0	100.0	100.0	100.0
Potatoes	193.2	734.7	857.5	67.4	70.5	83.9	51.3	90.2	90.3	78.4	89.0	90.6
Winter potatoes	na	543.2	649.1	na	40.0	48.8	na	66.7	68.3	na	50.5	52.7
Summer potatoes	na	205.3	231.7	na	30.5	35.1	na	25.2	24.4	na	38.5	37.9
Sweet potatoes	68.2	36.5	21.0	7.3	3.0	1.7	18.1	4.5	2.2	8.5	3.8	1.8
Colocasia	147.7	85.1	136.9	7.9	4.4	5.2	39.2	10.4	14.4	9.2	5.6	5.6
Other tubers	26.1	23.9	22.6	5.3	1.3	1.8	6.9	2.9	2.4	6.2	1.6	1.9
Cash crops	242.0	169.2	124.6	86.0	62.9	60.6	11.2	6.3	3.8	2.6	1.5	1.4
							100.0	100.0	100.0	100.0	100.0	100.0
Sugar cane	60.2	82.6	85.1	32.5	36.6	51.9	24.9	48.8	68.3	37.8	58.2	85.7
Jute	74.5	52.1	20.4	43.1	20.5	4.7	30.8	30.8	16.4	50.1	32.6	7.7
Tobacco	116.4	33.8	14.1	8.7	4.7	2.5	48.1	20.0	11.3	10.1	7.5	4.1
Other cash crops	15.1	6.1	7.2	1.7	1.1	1.5	6.2	3.6	5.8	2.0	1.7	2.4
Oilseeds	281.4	1,013.2	1,021.4	224.1	260.1	214.2	13.0	37.5	30.9	6.8	6.4	5.0
							100.0	100.0	100.0	100.0	100.0	100.0
Mustard	107.8	858.2	851.5	153.8	182.4	149.0	38.3	84.7	83.4	68.6	70.1	69.5
Groundnut	59.0	18.8	25.1	4.3	1.9	2.8	21.0	1.9	2.5	1.9	0.7	1.3
Linseed	190.8	209.9	203.0	58.9	67.7	54.5	67.8	20.7	19.9	26.3	26.0	25.4
Sesame	48.8	36.2	32.1	3.5	5.6	4.8	17.3	3.6	3.1	1.6	2.2	2.2
Other oilseeds	25.5	18.2	23.8	3.6	2.5	3.1	9.1	1.8	2.3	1.6	1.0	1.5

TABLE 6.1: DISTRIBUTION OF NUMBER OF HOLDINGS WITH TEMPORARY CROPS AND CROP AREA SOWN BY CROP TYPE, NEPAL, 1981/82 to 2001/02

Crop	(In thousand)						(In Percent)					
	Holdings reporting			Crop area (ha)			% to Holdings reporting			% to Crop area reported		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
Spices	427.7	336.4	473.7	58.1	29.3	40.7	19.8	12.5	14.3	1.8	0.7	1.0
							100.0	100.0	100.0	100.0	100.0	100.0
Chilli	264.6	126.8	139.3	8.0	3.9	4.1	61.9	37.7	29.4	13.8	13.3	10.2
Onion	182.9	130.1	197.2	7.5	4.7	6.4	42.8	38.7	41.6	12.9	16.0	15.6
Garlic	186.1	125.4	172.7	31.5	2.2	3.3	43.5	37.3	36.4	54.2	7.5	8.2
Ginger	109.5	53.5	103.7	4.2	3.4	10.2	25.6	15.9	21.9	7.2	11.6	25.1
Turmeric	131.7	27.2	50.6	3.9	0.8	1.3	30.8	8.1	10.7	6.7	2.7	3.2
Cardamom	10.4	20.8	29.8	1.7	10.6	11.0	2.4	6.2	6.3	2.9	36.2	27.1
Coriander	na	43.5	70.0	na	3.2	3.5	na	12.9	14.8	na	10.9	8.6
Other spices	35.1	14.9	11.4	1.3	0.4	0.8	8.2	4.4	2.4	2.2	1.4	2.1
Vegetables	324.2	763.1	978.1	17.2	39.5	60.0	15.0	28.2	29.6	0.5	1.0	1.4
							100.0	100.0	100.0	100.0	100.0	100.0
Winter vegetables	na	588.5	781.9	na	24.4	38.4	na	77.1	79.9	na	61.8	64.0
Summer vegetables	na	398.0	511.7	na	15.1	21.6	na	52.2	52.3	na	38.2	36.0
Summary:												
Holdings with temporary crops	2,157.4	2,701.9	3,305.4	...	...	...	100.0	100.0	100.0	…	…	…
Total land holdings	2,185.7	2,703.9	3,337.4	...	...	...	101.3	100.1	101.8	…	…	…
Area of all temporary crops	...	...	...	3,315.0	4,063.0	4,251.3	…	…	…	100.0	100.0	100.0

TABLE 6.1a: DISTRIBUTION OF NUMBER OF HOLDINGS WITH TEMPORARY CROPS AND CROP AREA SOWN BY CROP TYPE OF FEMALE AND MALE HOLDERS, NEPAL, 2001/02

Crop	(In thousand)						(In Percent)					
	Holdings reporting			Crop area (ha)			% to Holdings reporting			% to Crop area reported		
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
Total	269.0	3,036.4	3,305.4	224.9	4,050.8	4,251.3	100.0	100.0	100.0	100.0	100.0	100.0
Cereal grains	258.3	2,963.3	3,221.6	184.8	3,238.3	3,423.1	96.0	97.6	97.5	82.1	79.9	80.1
							100.0	100.0	100.0	100.0	100.0	100.0
Rice	na	na	2,481.6	68.6	1,476.0	1,544.6	na	na	77.0	37.1	45.6	45.1
Early rice	14.1	179.4	193.6	3.4	55.9	59.4	5.5	6.1	6.0	1.9	1.7	1.7
Main rice	165.1	2,169.4	2,334.5	62.7	1,354.5	1,417.1	63.9	73.2	72.5	33.9	41.8	41.4
Upland rice	14.7	218.4	233.1	2.5	65.6	68.1	5.7	7.4	7.2	1.3	2.0	2.0
Wheat	127.2	1,807.9	1,935.1	35.4	758.1	793.5	49.2	61.0	60.1	19.2	23.4	23.2
Maize	na	na	2,166.3	56.7	712.7	769.4	na	na	67.2	30.7	22.0	22.5
Spring/winter maize	32.6	1,027.3	1,059.9	8.7	102.6	111.3	12.6	34.7	32.9	4.7	3.2	3.3
Summer maize	185.0	65.9	251.0	48.0	610.1	658.1	71.6	2.2	7.8	26.0	18.8	19.2
Millet	108.1	951.9	1,060.0	19.8	230.7	250.5	41.9	32.1	32.9	10.7	7.1	7.3
Barley	18.0	233.0	251.0	2.5	36.8	39.3	7.0	7.9	7.8	1.4	1.1	1.1
Buckwheat	9.0	102.4	111.4	1.5	19.3	20.8	3.5	3.5	3.5	0.8	0.6	0.6
Other cereals	2.2	33.7	35.9	0.2	4.7	4.9	0.8	1.1	1.1	0.1	0.1	0.1
Legumes	92.9	1,269.3	1,362.3	16.1	363.3	379.4	34.5	41.8	41.2	7.2	9.0	8.9
							100.0	100.0	100.0	100.0	100.0	100.0
Soyabeans	24.3	232.9	257.2	1.2	16.6	17.8	26.1	18.3	18.9	7.2	4.6	4.7
Black gram	18.2	154.0	172.3	1.7	17.7	19.4	19.6	12.1	12.6	10.6	4.9	5.1
Red gram	4.0	100.2	104.2	0.5	12.1	12.7	4.3	7.9	7.6	3.3	3.3	3.3
Grass pea	3.2	92.3	95.5	0.9	24.7	25.5	3.4	7.3	7.0	5.3	6.8	6.7
Lentils	33.4	722.7	756.1	7.9	228.9	236.8	35.9	56.9	55.5	48.9	63.0	62.4
Gram	4.7	76.4	81.1	0.5	11.0	11.5	5.0	6.0	6.0	3.2	3.0	3.0
Peas	10.8	167.0	177.8	0.7	17.4	18.1	11.7	13.2	13.1	4.5	4.8	4.8
Green gram	0.5	15.8	16.3	0.1	3.3	3.4	0.6	1.2	1.2	0.6	0.9	0.9
Horse gram	6.5	75.5	82.0	0.7	9.9	10.6	7.0	5.9	6.0	4.4	2.7	2.8
Cow pea	19.0	152.1	171.1	0.9	9.7	10.6	20.5	12.0	12.6	5.3	2.7	2.8
Other legumes	12.8	122.8	135.6	1.1	12.0	13.0	13.8	9.7	10.0	6.7	3.3	3.4
Tubers	74.9	875.2	950.1	6.0	86.6	92.5	27.8	28.8	28.7	2.7	2.1	2.2
							100.0	100.0	100.0	100.0	100.0	100.0
Potatoes	na	na	857.5	5.3	78.6	83.9	na	na	90.3	88.7	90.7	90.6
Winter potatoes	47.4	601.6	649.1	2.9	45.9	48.8	63.3	68.7	68.3	48.3	53.0	52.7
Summer potatoes	17.2	214.5	231.7	2.4	32.7	35.1	23.0	24.5	24.4	40.4	37.7	37.9
Sweet potatoes	1.8	19.2	21.0	0.1	1.6	1.7	2.4	2.2	2.2	1.6	1.9	1.8
Colocasia	16.3	120.6	136.9	0.4	4.8	5.2	21.7	13.8	14.4	7.3	5.5	5.6
Other tubers	1.6	21.0	22.6	0.1	1.7	1.8	2.1	2.4	2.4	2.4	1.9	1.9
Cash crops	4.4	120.194	124.6	1.3	59.3	60.6	1.6	4.0	3.8	0.6	1.5	1.4
							100.0	100.0	100.0	100.0	100.0	100.0
Sugar cane	2.5	82.7	85.1	1.0	50.9	51.9	56.6	68.8	68.3	77.6	85.9	85.7
Jute	1.0	19.5	20.4	0.1	4.6	4.7	22.0	16.2	16.4	8.7	7.7	7.7
Tobacco	0.5	13.6	14.1	0.0	2.5	2.5	11.3	11.3	11.3	2.1	4.2	4.1
Other cash crops	0.5	6.7	7.2	0.2	1.3	1.5	11.7	5.6	5.8	11.6	2.2	2.4

TABLE 6.1a: DISTRIBUTION OF NUMBER OF HOLDINGS WITH TEMPORARY CROPS AND CROP AREA SOWN BY CROP TYPE OF FEMALE AND MALE HOLDERS, NEPAL, 2001/02

Crop	(In thousand)						(In Percent)					
	Holdings reporting			Crop area (ha)			% to Holdings reporting			% to Crop area reported		
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
Oilseeds	73.8	947.556	1,021.4	11.2	203.0	214.2	27.4	31.2	30.9	5.0	5.0	5.0
							100.0	100.0	100.0	100.0	100.0	100.0
Mustard	66.2	785.3	851.5	9.0	139.9	149.0	89.7	82.9	83.4	80.7	68.9	69.5
Groundnut	1.5	23.6	25.1	0.1	2.7	2.8	2.1	2.5	2.5	1.0	1.3	1.3
Linseed	7.5	195.5	203.0	1.6	53.0	54.5	10.1	20.6	19.9	13.9	26.1	25.4
Sesame	2.3	29.9	32.1	0.3	4.5	4.8	3.1	3.2	3.1	2.9	2.2	2.2
Other oilseeds	1.3	22.5	23.8	0.2	3.0	3.1	1.8	2.4	2.3	1.6	1.5	1.5
Spices	35.3	438.437	473.7	1.8	38.9	40.7	13.1	14.4	14.3	0.8	1.0	1.0
							100.0	100.0	100.0	100.0	100.0	100.0
Chilli	9.2	130.2	139.3	0.2	3.9	4.1	25.9	29.7	29.4	11.4	10.1	10.2
Onion	13.2	184.0	197.2	0.2	6.1	6.4	37.5	42.0	41.6	13.6	15.7	15.6
Garlic	15.2	157.5	172.7	0.2	3.1	3.3	43.0	35.9	36.4	12.0	8.0	8.2
Ginger	10.7	93.0	103.7	0.4	9.8	10.2	30.3	21.2	21.9	25.1	25.1	25.1
Turmeric	4.6	46.0	50.6	0.1	1.2	1.3	13.0	10.5	10.7	3.9	3.1	3.2
Cardamom	1.7	28.1	29.8	0.5	10.6	11.0	4.7	6.4	6.3	27.1	27.1	27.1
Coriander	4.6	65.4	70.0	0.1	3.4	3.5	13.0	14.9	14.8	4.7	8.7	8.6
Other spices	1.0	10.4	11.4	0.0	0.8	0.8	3.0	2.4	2.4	2.3	2.1	2.1
Vegetables	na	na	978.1	3.8	56.2	60.0	na	na	29.6	1.7	1.4	1.4
	120.0*	1173.6*					100.0	100.0	100.0	100.0	100.0	100.0
Winter vegetables	71.7	710.3	781.9	2.4	36.0	38.4	59.7	60.5	79.9	63.6	64.0	64.0
Summer vegetables	48.3	463.4	511.7	1.4	20.3	21.6	40.3	39.5	52.3	36.4	36.0	36.0
Summary:												
Holdings with temporary crops	269.0	3,039.7	3,305.4	…	…	…	100.0	100.0	100.0	…	…	…
Total land holdings	269.0	3,068.4	3,337.4	…	…	…	100.0	100.9	100.9	…	…	…
Area of all temporary crops	…	…	…	224.9	4,050.8	4,251.3	…	…	…	100.0	100.0	100.0

*Obtained the sum of winter and summer vegetables holdings for purposes of generating percentage distribution by season.

TABLE 6.1b: PERCENT INCREASE IN THE NUMBER OF HOLDINGS WITH TEMPORARY CROPS AND CROP AREA SOWN BY CROP TYPE, NEPAL, 1981/82 to 2001/02

Crop	(In thousand)						Percent Increase			
	Holdings reporting			Crop area (ha)			Holdings		Crop Area	
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981-1991	1991-2001	1981-1991	1991-2001
Total	2,157.4	2,701.9	3,305.4	3,315.0	4,063.0	4,275.7	25.2	22.3	22.6	5.2
Cereal grains	1,685.6	2,649.0	3,221.6	2,509.0	3,251.7	3,423.1	57.2	21.6	29.6	5.3
Rice	1,021.7	2,037.5	2,481.6	1,394.1	1,481.2	1,544.6	99.4	21.8	6.2	4.3
Wheat	649.5	1,635.8	1,935.1	389.2	633.1	793.5	151.9	18.3	62.7	25.3
Maize	838.6	1,872.6	2,166.3	522.5	768.7	769.4	123.3	15.7	47.1	0.1
Millet	709.0	1,065.8	1,060.0	154.4	301.5	250.5	50.3	-0.5	95.3	-16.9
Barley	183.8	279.3	251.0	27.7	46.2	39.3	52.0	-10.1	66.8	-14.9
Buckwheat	48.0	95.5	111.4	10.8	16.3	20.8	99.0	16.6	50.9	27.7
Other cereals	na	33.8	35.9	na	4.7	4.9	na	6.2	na	5.1
Legumes	870.0	1,191.6	1,362.3	334.6	340.4	379.4	37.0	14.3	1.7	11.5
Tubers	376.5	814.5	950.1	86.0	79.2	92.5	116.3	16.6	-7.9	16.9
Cash crops	242.0	169.2	124.6	86.0	62.9	60.6	-30.1	-26.4	-26.9	-3.7
Oilseeds	281.4	1,013.2	1,021.4	224.1	260.1	214.2	260.1	0.8	16.1	-17.6
Spices	427.7	336.4	473.7	58.1	29.3	40.7	-21.3	40.8	-49.6	38.8
Vegetables	324.2	763.1	978.1	17.2	39.5	60.0	135.4	28.2	129.7	51.9
Summary:										
Holdings w/ temporary crops	2,157.4	2,701.9	3,305.4	…	…	…	25.2	22.3	…	…
Total land holdings	2,185.7	2,703.9	3,337.4	…	…	…	23.7	23.4	…	…
Area of all temporary crops	…	…	…	3,315.0	4,063.0	4,251.3	…	…	22.6	5.2

TABLE 6.2: NUMBER AND PERCENT OF HOLDINGS WITH TEMPORARY CROPS BY CROP TYPE AND ECOLOGICAL BELT, 1981/82, 1991/92 AND 2001/02

Crop	Mountain			Hill			Terai			Nepal		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
	Number of holdings (' 000)											
Cereal grains	168.8	258.3	294.1	852.3	1,339.9	1,563.5	664.5	1,050.8	1,364.0	1,685.6	2,649.0	3,221.6
Rice	50.0	179.1	203.3	350.9	905.4	1,015.6	620.9	953.0	1,262.7	1,021.7	2,037.5	2,481.6
Wheat	34.6	184.5	194.7	267.0	755.0	856.5	347.9	696.3	883.9	649.5	1,635.8	1,935.1
Maize	79.1	228.3	256.2	607.1	1,263.5	1,461.8	152.3	380.8	448.3	838.6	1,872.6	2,166.3
Millet	94.1	182.0	191.2	538.4	805.7	813.9	76.5	78.2	54.9	709.0	1,065.8	1,060.0
Barley	43.4	70.5	80.1	109.6	192.7	160.3	30.8	16.1	10.6	183.8	279.3	251.0
Legumes	80.3	110.2	76.8	357.6	459.2	534.9	432.1	622.2	750.6	870.0	1,191.6	1,362.3
Tubers	55.2	109.5	115.1	257.3	364.6	469.9	64.0	340.3	365.1	376.5	814.5	950.1
Cash crops	9.7	5.1	5.5	41.3	27.3	18.7	190.9	136.8	100.4	242.0	169.2	124.6
Oilseeds	10.7	37.5	29.9	72.9	423.5	451.2	197.7	552.2	540.3	281.4	1,013.2	1,021.4
Spices	44.5	36.8	36.5	218.5	139.9	232.5	164.6	159.7	204.7	427.7	336.4	473.7
Vegetables	16.3	88.6	71.6	199.9	356.9	518.9	108.0	317.5	387.6	324.2	763.1	978.1
Holdings with crops	195.3	259.8	296.7	1,031.9	1,350.8	1,576.9	930.2	1,091.3	1,431.8	2,157.4	2,701.9	3,305.4
Total land holdings	197.1	259.9	298.2	1,041.9	1,351.3	1,586.4	946.8	1,092.8	1,479.5	2,185.7	2,703.9	3,337.4
	Percent											
Cereal grains	85.7	99.4	98.6	81.8	99.2	98.6	70.2	96.2	92.2	77.1	98.0	96.5
Rice	25.4	68.9	68.2	33.7	67.0	64.0	65.6	87.2	85.3	46.7	75.4	74.4
Wheat	17.6	71.0	65.3	25.6	55.9	54.0	36.7	63.7	59.7	29.7	60.5	58.0
Maize	40.2	87.9	85.9	58.3	93.5	92.1	16.1	34.8	30.3	38.4	69.3	64.9
Millet	47.8	70.0	64.1	51.7	59.6	51.3	8.1	7.2	3.7	32.4	39.4	31.8
Barley	22.0	27.1	26.9	10.5	14.3	10.1	3.3	1.5	0.7	8.4	10.3	7.5
Legumes	40.7	42.4	25.7	34.3	34.0	33.7	45.6	56.9	50.7	39.8	44.1	40.8
Tubers	28.0	42.1	38.6	24.7	27.0	29.6	6.8	31.1	24.7	17.2	30.1	28.5
Cash crops	4.9	2.0	1.8	4.0	2.0	1.2	20.2	12.5	6.8	11.1	6.3	3.7
Oilseeds	5.5	14.4	10.0	7.0	31.3	28.4	20.9	50.5	36.5	12.9	37.5	30.6
Spices	22.6	14.1	12.2	21.0	10.4	14.7	17.4	14.6	13.8	19.6	12.4	14.2
Vegetables	8.3	34.1	24.0	19.2	26.4	32.7	11.4	29.1	26.2	14.8	28.2	29.3
% with crops to total	99.1	100.0	99.5	99.0	100.0	99.4	98.2	99.9	96.8	98.7	99.9	99.0
Total land holdings	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 6.3: AREA UNDER TEMPORARY CROPS BY CROP TYPE AND ECOLOGICAL BELT, 1981/82, 1991/92 and 2001/02

Crop	Mountain			Hill			Tarai			Nepal		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
						Area ('000 ha)						
Cereal grains	116.7	226.7	293.7	904.9	1,352.3	1,343.5	1,487.4	1,672.7	1,785.9	2,509.0	3,251.7	3,423.1
Rice	25.4	49.3	74.2	284.0	335.2	353.0	1,084.7	1,096.8	1,117.4	1,394.1	1,481.2	1,544.6
Wheat	15.2	48.7	65.6	127.2	223.5	256.7	246.8	360.8	471.2	389.2	633.1	793.5
Maize	35.5	69.3	84.0	354.9	515.3	510.2	132.0	184.1	175.3	522.5	768.7	769.4
Millet	16.5	41.0	46.9	121.3	235.3	187.9	16.6	25.2	15.7	154.4	301.5	250.5
Barley	9.4	12.9	15.2	12.4	30.5	22.1	5.9	2.7	2.1	27.7	46.2	39.3
Legumes	7.1	7.8	7.6	38.9	57.6	72.3	288.6	275.0	299.6	334.6	340.4	379.4
Tubers	15.6	15.1	19.7	53.5	39.6	46.8	17.0	24.4	26.1	86.0	79.2	92.5
Cash crops	0.7	0.2	0.3	6.7	1.6	1.4	78.6	61.1	58.8	86.0	62.9	60.6
Oilseeds	1.6	4.1	2.9	33.5	61.4	65.0	188.9	194.7	146.3	224.1	260.1	214.2
Spices	1.9	4.8	7.1	13.1	11.7	18.5	43.1	12.7	15.1	58.1	29.3	40.7
Vegetables	0.8	3.1	3.7	5.9	14.0	26.1	10.5	22.3	30.2	17.2	39.5	60.0
Total temp. crops	144.3	261.8	333.8	1,056.6	1,538.2	1,568.9	2,114.2	2,262.9	2,348.6	3,315.0	4,063.0	4,251.3
Arable land	115.7	162.3	200.0	856.5	871.3	863.0	1,315.3	1,289.7	1,294.0	2,287.5	2,323.4	2,357.0
						Percent of arable land						
Cereal grains												
Rice	21.9	30.3	37.1	33.2	38.5	40.9	82.5	85.0	86.4	60.9	63.8	65.5
Wheat	13.1	30.0	32.8	14.9	25.7	29.7	18.8	28.0	36.4	17.0	27.2	33.7
Maize	30.7	42.7	42.0	41.4	59.1	59.1	10.0	14.3	13.5	22.8	33.1	32.6
Millet	14.3	25.3	23.4	14.2	27.0	21.8	1.3	2.0	1.2	6.8	13.0	10.6
Barley	8.1	7.9	7.6	1.4	3.5	2.6	0.4	0.2	0.2	1.2	2.0	1.7
Legumes	6.1	4.8	3.8	4.5	6.6	8.4	21.9	21.3	23.1	14.6	14.6	16.1
Tubers	13.4	9.3	9.8	6.2	4.5	5.4	1.3	1.9	2.0	3.8	3.4	3.9
Cash crops	0.6	0.1	0.2	0.8	0.2	0.2	6.0	4.7	4.5	3.8	2.7	2.6
Oilseeds	1.4	2.5	1.5	3.9	7.0	7.5	14.4	15.1	11.3	9.8	11.2	9.1
Spices	1.7	3.0	3.5	1.5	1.3	2.1	3.3	1.0	1.2	2.5	1.3	1.7
Vegetables	0.7	1.9	1.8	0.7	1.6	3.0	0.8	1.7	2.3	0.8	1.7	2.5
%Crops to arable land	124.7	161.3	167.7	123.4	176.5	182.7	160.7	175.5	182.7	144.9	174.9	181.4
Arable land	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 6.4: AVERAGE AREA UNDER TEMPORARY CROPS BY CROP TYPE AND ECOLOGICAL BELT, 2001/02

Crop	Mountain		Hill		Tarai		Nepal	
	Average area (ha)	Percent	Average area (ha)	Percent	Average area (ha)	Percent	Average area (ha)	Percent
Cereal grains	0.98	87.6	0.85	85.2	1.21	75.6	1.03	80.1
Rice	0.25	22.1	0.22	22.4	0.76	47.3	0.46	36.1
Wheat	0.22	19.6	0.16	16.3	0.32	19.9	0.24	18.6
Maize	0.28	25.0	0.32	32.4	0.12	7.4	0.23	18.0
Millet	0.16	14.0	0.12	11.9	0.01	0.7	0.08	5.9
Barley	0.05	4.5	0.01	1.4	0.00	0.1	0.01	0.9
Legumes	0.03	2.3	0.05	4.6	0.20	12.7	0.11	8.9
Tubers	0.07	5.9	0.03	3.0	0.02	1.1	0.03	2.2
Cash crops	0.00	0.1	0.00	0.1	0.04	2.5	0.02	1.4
Oilseeds	0.01	0.9	0.04	4.1	0.10	6.2	0.06	5.0
Spices	0.02	2.1	0.01	1.2	0.01	0.6	0.01	1.0
Vegetables	0.01	1.1	0.02	1.7	0.02	1.3	0.02	1.4
Total temp. crops	1.12	100.0	0.99	100.0	1.64	100.0	1.29	100.0
Ave. size of holding	0.73	...	0.65	...	0.94	...	0.79	...

TABLE 6.5: AVERAGE AREA SOWN PER CROP GROWER BY CROP TYPE AND ECOLOGICAL BELT, 1981/82, 1991/92 AND 2001/02

(In hectares)

Crop	Mountain			Hill			Terai			Nepal		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
Cereal grains	0.69	0.88	1.00	1.06	1.01	0.86	2.24	1.59	1.31	1.49	1.23	1.06
Rice	0.51	0.28	0.37	0.81	0.37	0.35	1.75	1.15	0.88	1.36	0.73	0.62
Wheat	0.44	0.26	0.34	0.48	0.30	0.30	0.71	0.52	0.53	0.60	0.39	0.41
Maize	0.45	0.30	0.33	0.58	0.41	0.35	0.87	0.48	0.39	0.62	0.41	0.36
Millet	0.18	0.23	0.25	0.23	0.29	0.23	0.22	0.32	0.29	0.22	0.28	0.24
Barley	0.22	0.18	0.19	0.11	0.16	0.14	0.19	0.17	0.19	0.15	0.17	0.16
Legumes	0.09	0.07	0.10	0.11	0.13	0.14	0.67	0.44	0.40	0.38	0.29	0.28
Tubers	0.28	0.14	0.17	0.21	0.11	0.10	0.27	0.07	0.07	0.23	0.10	0.10
Cash crops	0.07	0.05	0.06	0.16	0.06	0.08	0.41	0.45	0.59	0.36	0.37	0.49
Oilseeds	0.15	0.11	0.10	0.46	0.14	0.14	0.96	0.35	0.27	0.80	0.26	0.21
Spices	0.04	0.13	0.19	0.06	0.08	0.08	0.26	0.08	0.07	0.14	0.09	0.09
Vegetables	0.05	0.03	0.05	0.03	0.04	0.05	0.10	0.07	0.08	0.05	0.05	0.06

NOTE: The figures refer to the average area sown for holdings with the crop.

TABLE 6.6: NUMBER AND PERCENT OF HOLDINGS WITH TEMPORARY CROPS BY CROP TYPE AND DEVELOPMENT REGION, 1981/82, 1991/92 AND 2001/02

Crop	Eastern			Central			Western			Mid Western			Far Western			Nepal		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
								Number of holdings ('000)										
Cereal grains	388.0	606.1	747.4	533.3	826.7	996.9	393.7	595.4	698.1	229.5	362.7	455.4	141.1	258.2	323.8	1,685.6	2,649.0	3,221.6
Rice	234.2	468.4	552.0	380.6	655.2	803.3	227.0	439.1	511.4	105.9	248.9	322.4	74.0	225.8	292.6	1,021.7	2,037.5	2,481.6
Wheat	86.5	283.8	342.8	253.8	494.5	572.1	152.4	320.4	357.1	96.8	300.8	360.8	59.9	236.3	302.2	649.5	1,635.8	1,935.1
Maize	128.4	401.7	480.9	239.7	506.5	586.7	264.3	448.7	516.2	142.3	312.3	372.8	63.9	203.4	209.7	838.6	1,872.6	2,166.3
Millet	150.5	271.1	256.7	156.5	305.3	304.1	225.2	318.2	332.5	115.0	90.4	81.1	61.9	80.9	85.6	709.0	1,065.8	1,060.0
Barley	18.3	12.1	10.5	39.7	18.1	22.8	28.1	53.5	41.6	68.4	116.5	96.5	29.4	79.1	79.7	183.8	279.3	251.0
Legumes	196.9	239.0	237.9	299.9	398.7	406.1	161.2	239.2	315.3	131.9	181.4	238.6	80.1	133.3	164.4	870.0	1,191.6	1,362.3
Tubers	95.7	241.1	258.3	80.9	202.1	194.6	101.9	186.2	243.4	70.5	116.3	148.2	27.5	68.7	105.6	376.5	814.5	950.1
Cash crops	99.4	60.9	31.4	58.1	52.3	49.4	29.9	27.8	22.1	42.1	11.0	11.5	12.5	17.1	10.3	242.0	169.2	124.6
Oilseeds	55.6	218.7	196.7	82.7	298.1	271.5	55.4	232.4	248.6	60.2	152.4	188.6	27.6	111.5	116.0	281.4	1,013.2	1,021.4
Spices	100.7	105.3	144.4	74.5	87.8	79.5	96.2	55.9	94.8	96.3	43.1	81.3	60.0	44.4	73.6	427.7	336.4	473.7
Vegetables	79.3	221.3	209.1	61.6	223.2	238.2	71.1	137.0	232.2	76.0	114.2	165.9	36.2	67.3	132.7	324.2	763.1	978.1
Holdings with crops	568.8	627.9	783.7	694.0	842.7	1,018.7	447.9	603.1	706.7	274.4	368.3	466.3	172.2	260.0	330.0	2,157.4	2,701.9	3,305.4
Total land holdings	576.2	628.5	799.7	705.9	843.7	1,026.9	452.7	603.3	715.8	276.6	368.3	469.5	174.3	260.1	333.0	2,185.7	2,703.9	3,337.4
								Percent of holdings										
Cereal grains	67.3	96.4	93.5	75.5	98.0	97.1	87.0	98.7	97.5	83.0	98.5	97.0	80.9	99.3	97.3	77.1	98.0	96.5
Rice	40.6	74.5	69.0	53.9	77.7	78.2	50.2	72.8	71.4	38.3	67.6	68.7	42.4	86.8	87.9	46.7	75.4	74.4
Wheat	15.0	45.2	42.9	36.0	58.6	55.7	33.7	53.1	49.9	35.0	81.7	76.9	34.4	90.9	90.8	29.7	60.5	58.0
Maize	22.3	63.9	60.1	33.9	60.0	57.1	58.4	74.4	72.1	51.5	84.8	79.4	36.7	78.2	63.0	38.4	69.3	64.9
Millet	26.1	43.1	32.1	22.2	36.2	29.6	49.7	52.7	46.5	41.6	24.5	17.3	35.5	31.1	25.7	32.4	39.4	31.8
Barley	3.2	1.9	1.3	5.6	2.1	2.2	6.2	8.9	5.8	24.7	31.6	20.5	16.8	30.4	23.9	8.4	10.3	7.5
Legumes	34.2	38.0	29.7	42.5	47.3	39.5	35.6	39.6	44.1	47.7	49.2	50.8	45.9	51.3	49.4	39.8	44.1	40.8
Tubers	16.6	38.4	32.3	11.5	24.0	19.0	22.5	30.9	34.0	25.5	31.6	31.6	15.7	26.4	31.7	17.2	30.1	28.5
Cash crops	17.2	9.7	3.9	8.2	6.2	4.8	6.6	4.6	3.1	15.2	3.0	2.4	7.2	6.6	3.1	11.1	6.3	3.7
Oilseeds	9.6	34.8	24.6	11.7	35.3	26.4	12.2	38.5	34.7	21.8	41.4	40.2	15.8	42.9	34.8	12.9	37.5	30.6
Spices	17.5	16.7	18.1	10.6	10.4	7.7	21.3	9.3	13.2	34.8	11.7	17.3	34.4	17.1	22.1	19.6	12.4	14.2
Vegetables	13.8	35.2	26.2	8.7	26.5	23.2	15.7	22.7	32.4	27.5	31.0	35.3	20.8	25.9	39.9	14.8	28.2	29.3
Total land holdings	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 6.7: AREA UNDER TEMPORARY CROPS BY CROP TYPE AND DEVELOPMENT REGION, 1981/82, 1991/92 AND 2001/02

Crop	Eastern			Central			Western			Mid Western			Far Western			Nepal		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
									Area (' 000 ha)									
Cereal grains	699.0	941.4	1,013.3	856.2	950.1	1,011.1	494.0	673.2	610.3	305.4	407.1	461.4	154.4	279.9	327.0	2,509.0	3,251.7	3,423.1
Rice	463.4	489.0	500.5	465.7	449.3	471.0	253.3	290.6	270.6	137.6	131.0	164.1	74.1	121.3	138.4	1,394.1	1,481.2	1,544.6
Wheat	62.0	118.4	177.5	163.2	183.1	217.8	77.7	114.9	116.0	51.4	122.6	148.7	34.8	94.0	133.6	389.2	633.1	793.5
Maize	124.9	224.2	242.3	171.5	216.7	227.0	109.8	167.5	150.7	82.7	113.7	112.1	33.7	46.6	37.3	522.5	768.7	769.4
Millet		100.6	84.0	43.1	92.1	82.8	42.1	85.9	62.2	16.1	13.4	12.0	10.0	9.6	9.5	154.4	301.5	250.5
Barley	2.7	2.7	2.4	8.4	3.1	3.1	5.6	10.7	7.5	7.1	21.9	18.7	3.9	7.8	7.6	27.7	46.2	39.3
Legumes	83.9	78.8	81.7	170.9	127.0	134.7	26.1	48.5	68.7	34.3	50.3	66.4	19.4	35.7	27.9	334.6	340.4	379.4
Tubers	37.2	31.6	32.8	25.9	23.4	27.1	11.8	13.8	14.2	8.1	6.5	12.4	3.1	4.0	6.0	86.0	79.2	92.5
Cash crops	51.1	23.7	11.2	23.6	25.5	36.6	9.3	11.0	8.3	1.1	0.8	1.3	0.9	1.8	3.2	86.0	62.9	60.6
Oilseeds	65.3	74.6	58.7	77.9	79.3	54.5	18.2	45.1	45.1	43.2	32.9	40.2	19.5	28.2	15.5	224.1	260.1	214.2
Spices	11.0	16.7	19.4	5.4	5.7	6.1	31.6	3.4	4.6	5.2	1.7	8.3	4.9	1.7	2.3	58.1	29.3	40.7
Vegetables	9.5	13.6	14.4	2.6	12.9	19.1	1.7	5.2	9.9	1.9	4.3	10.4	1.5	3.5	6.3	17.2	39.5	60.0
Total temp. crops	957.0	1,180.5	1,233.6	1,162.6	1,223.9	1,290.2	592.5	800.2	762.1	399.2	503.7	600.9	203.7	354.7	388.9	3,315.0	4,063.0	4,251.3
Arable land	722.3	699.8	709.2	763.0	668.3	690.3	418.2	474.3	421.0	244.3	292.0	329.7	139.6	189.1	206.7	2,287.5	2,323.4	2,357.0
									Percent of arable land									
Cereal grains																		
Rice	64.2	69.9	70.6	61.0	67.2	68.2	60.6	61.3	64.3	56.3	44.9	49.8	53.1	64.2	67.0	60.9	63.8	65.5
Wheat	8.6	16.9	25.0	21.4	27.4	31.6	18.6	24.2	27.6	21.0	42.0	45.1	25.0	49.7	64.6	17.0	27.2	33.7
Maize	17.3	32.0	34.2	22.5	32.4	32.9	26.2	35.3	35.8	33.8	39.0	34.0	24.1	24.6	18.1	22.8	33.1	32.6
Millet	6.0	14.4	11.8	5.6	13.8	12.0	10.1	18.1	14.8	6.6	4.6	3.6	7.2	5.1	4.6	6.8	13.0	10.6
Barley	0.4	0.4	0.3	1.1	0.5	0.5	1.3	2.3	1.8	2.9	7.5	5.7	2.8	4.1	3.7	1.2	2.0	1.7
Legumes	11.6	11.3	11.5	22.4	19.0	19.5	6.2	10.2	16.3	14.0	17.2	20.1	13.9	18.9	13.5	14.6	14.6	16.1
Tubers	5.2	4.5	4.6	3.4	3.5	3.9	2.8	2.9	3.4	3.3	2.2	3.8	2.2	2.1	2.9	3.8	3.4	3.9
Cash crops	7.1	3.4	1.6	3.1	3.8	5.3	2.2	2.3	2.0	0.5	0.3	0.4	0.6	1.0	1.5	3.8	2.7	2.6
Oilseeds	9.0	10.7	8.3	10.2	11.9	7.9	4.3	9.5	10.7	17.7	11.3	12.2	14.0	14.9	7.5	9.8	11.2	9.1
Spices	1.5	2.4	2.7	0.7	0.9	0.9	7.6	0.7	1.1	2.1	0.6	2.5	3.5	0.9	1.1	2.5	1.3	1.7
Vegetables	1.3	1.9	2.0	0.3	1.9	2.8	0.4	1.1	2.3	0.8	1.5	3.1	1.1	1.8	3.0	0.8	1.7	2.5
Arable land	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 6.8: AVERAGE AREA UNDER TEMPORARY CROPS BY CROP TYPE AND DEVELOPMENT REGION, 2001/02

Crop	Eastern		Central		Western		Mid Western		Far Western		Nepal	
	Average Area (ha)	%	Average Area (ha)	%	Average Area (ha)	%	Average Area (ha)	%	Average Area (ha)	%	Average Area (ha)	%
Cereal grains	1.27	82.1	0.98	78.4	0.85	80.1	0.99	76.5	0.99	75.8	1.03	80.1
Rice	0.63	40.6	0.46	36.5	0.38	35.5	0.35	34.5	0.42	36.4	0.46	36.1
Wheat	0.22	14.4	0.21	16.9	0.16	15.2	0.32	12.9	0.40	17.1	0.24	18.6
Maize	0.30	19.6	0.22	17.6	0.21	19.8	0.24	20.7	0.11	16.5	0.23	18.0
Millet	0.11	6.8	0.08	6.4	0.09	8.2	0.03	4.0	0.03	4.9	0.08	5.9
Barley	0.00	0.2	0.00	0.2	0.01	1.0	0.04	1.8	0.02	1.9	0.01	0.9
Legumes	0.10	6.6	0.13	10.4	0.10	9.0	0.14	8.6	0.08	9.5	0.11	8.9
Tubers	0.04	2.7	0.03	2.1	0.02	1.9	0.03	2.0	0.02	1.5	0.03	2.2
Cash crops	0.01	0.9	0.04	2.8	0.01	1.1	1.10.00	0.3	0.01	0.4	0.02	1.4
Oilseeds	0.07	4.8	0.05	4.2	0.06	5.9	43.20.09	10.8	0.05	9.6	0.06	5.0
Spices	0.02	1.6	0.01	0.5	0.01	0.6	5.20.02	1.3	0.01	2.4	0.01	1.0
Vegetables	0.02	1.2	0.02	1.5	0.01	1.3	1.90.02	0.5	0.02	0.7	0.02	1.4
Total temp. crops	1.57	100.0	1.26	100.0	1.07	100.0	1.28	100.0	1.17	100.0	1.29	100.0
Ave. holding size	0.99	...	0.73	...	0.72	...	0.79	...	0.68	...	0.80	...

NOTE: The figures refer to the average over all holdings

TABLE 6.9: AVERAGE AREA SOWN PER CROP GROWER BY CROP TYPE AND DEVELOPMENT REGION, 1981/82 AND 1991/92

(In hectares)

Crop	Eastern			Central			Western			Mid Western			Far Western			Nepal		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
Cereal grains	1.80	1.55	1.36	1.61	1.15	1.01	1.25	1.13	0.87	1.33	1.12	1.01	1.09	1.08	1.01	1.49	1.23	1.06
Rice	1.98	1.04	0.91	1.22	0.69	0.59	1.12	0.66	0.53	1.30	0.53	0.51	1.00	0.54	0.47	1.36	0.73	0.62
Wheat	0.72	0.42	0.52	0.64	0.37	0.38	0.51	0.36	0.32	0.53	0.41	0.41	0.58	0.40	0.44	0.60	0.39	0.41
Maize	0.97	0.56	0.50	0.72	0.43	0.39	0.42	0.37	0.29	0.58	0.36	0.30	0.53	0.23	0.18	0.62	0.41	0.36
Millet	0.29	0.37	0.33	0.28	0.30	0.27	0.19	0.27	0.19	0.14	0.15	0.15	0.16	0.12	0.11	0.22	0.28	0.24
Barley	0.15	0.22	0.23	0.21	0.17	0.14	0.20	0.20	0.18	0.10	0.19	0.19	0.13	0.10	0.09	0.15	0.17	0.16
Legumes	0.43	0.33	0.34	0.57	0.32	0.33	0.16	0.20	0.22	0.26	0.28	0.28	0.24	0.27	0.17	0.38	0.29	0.28
Tubers	0.39	0.13	0.13	0.32	0.12	0.14	0.12	0.07	0.06	0.11	0.06	0.08	0.11	0.06	0.06	0.23	0.10	0.10
Cash crops	0.51	0.39	0.36	0.41	0.49	0.74	0.31	0.39	0.38	0.03	0.07	0.12	0.07	0.11	0.31	0.36	0.37	0.49
Oilseeds	1.17	0.34	0.30	0.94	0.27	0.20	0.33	0.19	0.18	0.72	0.22	0.21	0.71	0.25	0.13	0.80	0.26	0.21
Spices	0.11	0.16	0.13	0.07	0.06	0.08	0.33	0.06	0.05	0.05	0.04	0.10	0.08	0.04	0.03	0.14	0.09	0.09
Vegetables	0.12	0.06	0.07	0.04	0.06	0.08	0.02	0.04	0.04	0.03	0.04	0.06	0.04	0.05	0.05	0.05	0.05	0.06

Note: Figures refer to the average per holding with the crop.

TABLE 6.10: NUMBER AND PERCENT OF HOLDINGS WITH TEMPORARY CROPS BY CROP TYPE AND SIZE OF HOLDING, NEPAL, 1981/82, 1991/92 AND 2001/02

Crop	Size of holding											
	Less than 0.5 ha			0.5 ha - 2.0 ha			2.0 ha and over			Total		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
	Number of holdings (' 000)											
Cereal grains	767.5	1,116.6	1,471.7	595.8	1,236.8	1,496.5	322.2	295.6	253.1	1,685.6	2,649.0	3,221.6
Rice	380.3	743.2	1,032.6	386.6	1,020.5	1,236.1	254.9	273.8	212.7	1,021.7	2,037.5	2,481.6
Wheat	243.1	608.2	751.5	253.6	804.5	988.8	152.8	223.1	194.7	649.5	1,635.8	1,935.1
Maize	396.7	804.9	1,007.8	297.9	901.3	1,038.7	144.0	166.4	119.6	838.6	1,872.6	2,166.3
Millet	356.6	460.2	476.4	246.3	529.4	533.4	106.2	76.2	50.1	709.0	1,065.8	1,060.0
Barley	95.0	122.9	92.7	60.1	134.3	142.3	28.7	22.1	16.0	183.8	279.3	251.0
Legumes	323.3	381.9	484.9	337.1	617.1	723.7	209.6	192.6	153.6	870.0	1,191.6	1,362.3
Tubers	163.8	256.0	349.1	140.8	419.3	499.4	71.9	139.1	101.5	376.5	814.5	950.1
Cash crops	49.3	27.1	23.3	88.1	85.0	69.3	104.6	57.0	32.0	242.0	169.2	124.6
Oilseeds	52.0	304.5	342.3	108.6	528.3	556.6	120.7	180.5	122.4	281.4	1,013.2	1,021.4
Spices	166.5	106.1	167.1	154.7	167.8	252.2	106.6	62.5	54.2	427.7	336.4	473.7
Vegetables	121.1	295.9	451.8	123.5	361.2	449.6	79.6	106.0	76.1	324.2	763.1	978.1
Holdings with crops	1,079.9	1,164.4	1,577.8	728.3	1,240.9	1,490.7	349.2	296.7	235.1	2,157.4	2,701.9	3,305.4
Total land holdings	1,099.7	1,166.0	1,578.9	734.5	1,241.1	1,504.3	351.6	296.8	254.2	2,185.7	2,703.9	3,337.4
	Percent											
Cereal grains	69.8	95.8	93.2	81.1	99.7	99.5	91.6	99.6	99.6	77.1	98.0	96.5
Rice	34.6	63.7	65.4	52.6	82.2	82.2	72.5	92.3	83.7	46.7	75.4	74.4
Wheat	22.1	52.2	47.6	34.5	64.8	65.7	43.5	75.2	76.6	29.7	60.5	58.0
Maize	36.1	69.0	63.8	40.6	72.6	69.1	40.9	56.1	47.0	38.4	69.3	64.9
Millet	32.4	39.5	30.2	33.5	42.7	35.5	30.2	25.7	19.7	32.4	39.4	31.8
Barley	8.6	10.5	5.9	8.2	10.8	9.5	8.2	7.4	6.3	8.4	10.3	7.5
Legumes	29.4	32.8	30.7	45.9	49.7	48.1	59.6	64.9	60.4	39.8	44.1	40.8
Tubers	14.9	22.0	22.1	19.2	33.8	33.2	20.5	46.9	39.9	17.2	30.1	28.5
Cash crops	4.5	2.3	1.5	12.0	6.9	4.6	29.7	19.2	12.6	11.1	6.3	3.7
Oilseeds	4.7	26.1	21.7	14.8	42.6	37.0	34.3	60.8	48.1	12.9	37.5	30.6
Spices	15.1	9.1	10.6	21.1	13.5	16.8	30.3	21.1	21.3	19.6	12.4	14.2
Vegetables	11.0	25.4	28.6	16.8	29.1	29.9	22.7	35.7	29.9	14.8	28.2	29.3
Total land holdings	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 6.10a: NUMBER AND PERCENT OF HOLDINGS WITH TEMPORARY CROPS BY CROP TYPE, SIZE OF HOLDING AND SEX OF HOLDER, NEPAL, 2001/02

Crop	Size of holding and Sex of Holder											
	Less than 0.5 ha			0.5 ha - 2.0 ha			2.0 ha and over			Total		
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
	Number of holdings (' 000)											
Cereal grains	158.3	1,313.4	1,471.7	92.315	1,404.2	1,496.5	7.6	245.5	253.1	258.3	2,963.3	3,221.6
Rice	na	na	1,032.6	na	na	1,236.1	na	na	212.7	na	na	2,481.6
Early paddy	6.6	60.5	67.2	6.9	102.8	109.7	0.6	16.1	16.7	14.1	179.4	193.6
Main paddy	90.3	838.8	929.0	68.7	1,114.7	1,183.4	6.1	216.1	222.3	165.1	2,169.6	2,334.7
Upland paddy	7.2	84.3	91.5	6.9	115.2	122.1	0.6	19.0	19.5	14.7	218.4	233.1
Wheat	67.7	683.8	751.5	54.0	934.8	988.8	5.5	189.3	194.7	127.2	1,807.9	1,935.1
Maize	na	na	1,007.8	na	na	1,038.7	na	na	119.6	na	na	2,166.3
Spring/winter m.	18.6	111.6	130.3	12.8	156.9	169.7	1.1	27.0	28.1	32.6	295.5	328.1
Summer m.	112.3	784.4	896.7	68.4	880.1	948.6	4.4	103.5	107.9	185.0	1,768.1	1,953.1
Millet	64.7	411.8	476.4	41.3	492.1	533.4	8.9	41.2	50.1	108.1	951.9	1,060.0
Barley	8.5	84.2	92.7	8.9	133.4	142.3	0.6	15.4	16.0	18.0	233.0	251.0
Legumes	47.0	437.9	484.9	41.9	681.7	723.7	4.0	149.6	153.6	92.9	1,269.3	1,362.3
Tubers	40.6	308.5	349.1	31.1	468.3	499.4	3.2	98.3	101.5	74.9	875.2	950.1
Cash crops	1.7	21.6	23.3	2.3	66.9	69.3	0.3	31.6	32.0	4.4	120.2	124.6
Oilseeds	37.8	304.5	342.3	32.7	523.9	556.6	3.3	119.1	122.4	73.8	947.6	1,021.4
Spices	19.1	148.0	167.1	14.7	237.5	252.2	1.5	52.6	54.2	35.3	438.4	473.7
Vegetables	56.8	395.0	451.8	31.0	418.7	449.6	2.5	73.6	76.1	90.3	887.9	978.1
Holdings with crops	168.3	1,409.4	1,577.8	92.9	1,397.8	1,490.7	7.8	227.3	235.1	269.0	3,036.4	3,305.4
Total land holdings	168.3	1,410.6	1,578.9	92.9	1,411.5	1,504.3	7.8	246.4	254.2	269.0	3,068.4	3,337.4

TABLE 6.10a: NUMBER AND PERCENT OF HOLDINGS WITH TEMPORARY CROPS BY CROP TYPE, SIZE OF HOLDING AND SEX OF HOLDER, NEPAL, 2001/02

Crop	Size of holding and Sex of Holder											
	Less than 0.5 ha			0.5 ha - 2.0 ha			2.0 ha and over			Total		
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
						Percent						
Cereal grains	94.0	93.1	93.2	99.4	99.5	99.5	98.1	99.6	99.6	96.0	96.6	96.5
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Rice			70.2			82.6			84.0			77.0
Early paddy	4.2	4.6	4.6	7.5	7.3	7.3	7.5	6.6	6.6	5.5	6.1	6.0
Main paddy	57.0	63.9	63.1	74.4	79.4	79.1	80.4	88.0	87.8	63.9	73.2	72.5
Upland paddy	4.5	6.4	6.2	7.5	8.2	8.2	7.3	7.7	7.7	5.7	7.4	7.2
Wheat	42.8	52.1	51.1	58.5	66.6	66.1	71.4	77.1	76.9	49.2	61.0	60.1
Maize												
Spring/winter maize	11.8	8.5	8.9	13.9	11.2	11.3	14.9	11.0	11.1	12.6	10.0	10.2
summer maize	70.9	59.7	60.9	74.1	62.7	63.4	57.3	42.2	42.6	71.6	59.7	60.6
Millet	40.8	31.4	32.4	44.7	35.0	35.6	115.8	16.8	19.8	41.9	32.1	32.9
Barley	5.4	6.4	6.3	9.6	9.5	9.5	8.1	6.3	6.3	7.0	7.9	7.8
Legumes	27.9	31.0	30.7	45.2	48.3	48.1	50.6	60.7	60.4	34.5	41.4	40.8
Tubers	24.1	21.9	22.1	33.5	33.2	33.2	40.5	39.9	39.9	27.8	28.5	28.5
Cash crops	1.0	1.5	1.5	2.5	4.7	4.6	4.5	12.8	12.6	1.6	3.9	3.7
Oilseeds	22.5	21.6	21.7	35.2	37.1	37.0	42.5	48.3	48.1	27.4	30.9	30.6
Spices	11.4	10.5	10.6	15.8	16.8	16.8	19.3	21.4	21.3	13.1	14.3	14.2
Vegetables	33.7	28.0	28.6	33.3	29.7	29.9	31.9	29.9	29.9	33.6	28.9	29.3
Total land holdings	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 6.11: AREA UNDER TEMPORARY CROPS BY CROP TYPE AND SIZE OF HOLDING, NEPAL, 1981/82, 1991/92 AND 2001/02

Crop	Size of holding											
	Less than 0.5 ha			0.5 ha - 2.0 ha			2.0 ha and over			Total		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
						Area (' 000)						
Cereal grains	189.9	409.8	540.0	729.7	1,621.0	1,911.7	1,589.4	1,220.9	971.4	2,509.0	3,251.7	3,423.1
Rice	60.9	127.9	201.0	351.2	649.2	824.4	982.0	704.2	519.2	1,394.1	1,481.2	1,544.6
Wheat	31.3	90.7	123.6	124.0	314.4	430.1	233.8	227.9	239.8	389.2	633.1	793.5
Maize	57.5	121.9	159.1	176.8	438.2	480.4	288.1	208.7	129.9	522.5	768.7	769.4
Millet	30.1	57.1	58.9	61.3	179.9	158.0	63.1	64.5	33.6	154.4	301.5	250.5
Barley	6.1	9.3	7.6	9.9	27.0	25.5	11.7	9.9	6.2	27.7	46.2	39.3
Legumes	40.0	28.8	46.5	94.1	144.2	194.0	200.4	167.4	138.9	334.6	340.4	379.4
Tubers	11.8	12.7	18.0	28.7	41.0	52.2	45.6	25.5	22.3	86.0	79.2	92.5
Cash crops	3.8	2.5	2.7	16.0	20.3	22.7	66.3	40.2	35.2	86.0	62.9	60.6
Oilseeds	6.9	25.1	30.7	52.5	117.1	117.5	164.7	117.9	66.0	224.1	260.1	214.2
Spices	11.6	2.8	5.2	22.7	10.7	21.3	23.9	15.8	14.2	58.1	29.3	40.7
Vegetables	6.2	9.4	18.5	4.4	18.4	31.1	6.7	11.7	10.4	17.2	39.5	60.0
Total temp.crops	270.2	491.0	659.0	947.9	1,972.6	2,340.1	2,096.9	1,599.4	1,252.6	3,315.0	4,063.0	4,251.3
Arable land	143.4	260.8	342.5	698.8	1,101.4	1,278.4	1,445.3	961.2	736.2	2,287.5	2,323.4	2,357.0
						Percent of arable land						
Cereal grains												
Rice	42.5	49.0	58.7	50.3	58.9	64.5	67.9	73.3	70.5	60.9	63.8	65.5
Wheat	21.8	34.8	36.1	17.7	28.5	33.6	16.2	23.7	32.6	17.0	27.2	33.7
Maize	40.1	46.7	46.5	25.3	39.8	37.6	19.9	21.7	17.6	22.8	33.1	32.6
Millet	21.0	21.9	17.2	8.8	16.3	12.4	4.4	6.7	4.6	6.8	13.0	10.6
Barley	4.2	3.6	2.2	1.4	2.4	2.0	0.8	1.0	0.8	1.2	2.0	1.7
Legumes	27.9	11.0	13.6	13.5	13.1	15.2	13.9	17.4	18.9	14.6	14.6	16.1
Tubers	8.2	4.9	5.3	4.1	3.7	4.1	3.2	2.7	3.0	3.8	3.4	3.9
Cash crops	2.6	1.0	0.8	2.3	1.8	1.8	4.6	4.2	4.8	3.8	2.7	2.6
Oilseeds	4.8	9.6	9.0	7.5	10.6	9.2	11.4	12.3	9.0	9.8	11.2	9.1
Spices	8.1	1.1	1.5	3.2	1.0	1.7	1.7	1.6	1.9	2.5	1.3	1.7
Vegetables	4.3	3.6	5.4	0.6	1.7	2.4	0.5	1.2	1.4	0.8	1.7	2.5
Total land holdings	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 6.11a: AREA UNDER TEMPORARY CROPS BY CROP TYPE, SIZE OF HOLDING, AND SEX OF HOLDER, NEPAL, 2001/02

Crop	Size of holding and Sex of holder											
	Less than 0.5 ha			0.5 ha - 2.0 ha			2.0 ha and over			Total		
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
						Area (' 000)						
Cereal grains	52.9	487.0	540.0	106.0	1,805.7	1,911.7	25.8	945.6	971.4	184.8	3,238.3	3,423.1
Rice			201.0			824.4			519.2			1,544.6
Early rice	0.8	8.4	9.3	2.1	33.8	35.9	0.5	13.7	14.2	3.4	55.9	59.4
Main rice	14.9	156.2	171.1	35.4	697.5	732.9	12.4	500.8	513.2	62.7	1,354.5	1,417.1
Upland rice	0.7	10.7	11.3	1.4	34.4	35.8	0.4	20.6	21.0	2.5	90.1	92.6
Wheat	10.0	113.6	123.6	20.0	410.0	430.1	5.4	234.4	239.8	35.4	758.1	793.5
Maize			159.1			480.4			129.9			769.4
Spring/winter maize	2.5	16.7	19.2	5.0	64.4	69.4	1.3	21.5	22.8	8.7	102.6	111.3
Summer maize	15.7	119.8	135.4	28.2	379.4	407.6	4.1	111.0	115.1	48.0	610.1	658.1
Millet	7.4	51.6	58.9	11.2	146.7	158.0	1.2	32.4	33.6	19.8	230.7	250.5
Barley	0.7	6.9	7.6	8.9	16.6	25.5	0.2	6.0	6.2	2.5	36.8	39.3
Legumes	3.7	42.8	46.5	9.2	184.8	194.0	3.2	135.8	138.9	16.1	363.3	379.4
Tubers	1.9	16.1	18.0	3.2	49.0	52.2	0.9	21.4	22.3	6.0	86.6	92.5
Cash crops	0.1	2.6	2.7	0.8	21.9	22.7	0.4	34.8	35.2	1.3	59.3	60.6
Oilseeds	3.4	27.4	30.7	6.1	111.3	117.5	1.7	64.3	66.0	11.2	203.0	214.2
Spices	0.5	4.7	5.2	1.1	20.2	21.3	0.2	14.0	14.2	1.8	38.9	40.7
Vegetables	1.9	16.6	18.5	1.7	29.4	31.1	0.2	10.2	10.4	3.8	56.2	60.0
Total temporary Crops	38.3	654.2	692.5	81.7	2,305.2	2,386.9	23.7	1,172.6	1,196.3	143.8	4,131.9	4,251.3
Arable land	33.0	309.4	342.5	70.0	1,208.4	1,278.4	19.5	716.6	736.2	122.6	2,234.4	2,357.0
						Percent of arable land						
Cereal grains	160.3	157.4	157.7	151.4	149.4	149.5	132.4	131.9	132.0	150.8	144.9	145.2
Early rice	2.6	2.7	2.7	3.0	2.8	2.8	2.6	1.9	1.9	2.8	2.5	2.5
Main rice	45.1	50.5	50.0	50.5	57.7	57.3	63.5	69.9	69.7	51.1	60.6	60.1
Upland rice	2.1	3.4	3.3	2.0	2.8	2.8	2.1	2.9	2.8	2.0	4.0	3.9
Wheat	30.2	36.7	36.1	28.6	33.9	33.6	27.8	32.7	32.6	28.9	33.9	33.7
Maize	0.0	0.0	46.5	0.0	0.0	37.6	0.0	0.0	17.6	0.0	0.0	32.6
Spring/winter maize	7.5	5.4	5.6	7.1	5.3	5.4	6.7	3.0	3.1	7.1	4.6	4.7
Summer maize	47.4	38.7	39.5	40.3	31.4	31.9	21.2	15.5	15.6	39.2	27.3	27.9
Millet	22.3	16.7	17.2	16.1	12.1	12.4	6.1	4.5	4.6	16.1	10.3	10.6
Barley	2.2	2.2	2.2	12.7	1.4	2.0	1.1	0.8	0.8	2.0	1.6	1.7
Legumes	11.3	13.8	13.6	13.2	15.3	15.2	16.2	18.9	18.9	13.2	16.3	16.1
Tubers	5.7	5.2	5.3	4.6	4.1	4.1	4.4	3.0	3.0	4.9	3.9	3.9
Cash crops	0.4	0.8	0.8	1.1	1.8	1.8	2.3	4.9	4.8	1.1	2.7	2.6
Oilseeds	10.2	8.8	9.0	8.8	9.2	9.2	8.8	9.0	9.0	9.1	9.1	9.1
Spices	1.4	1.5	1.5	1.5	1.7	1.7	1.2	2.0	1.9	1.4	1.7	1.7
Vegetables	5.7	5.4	5.4	2.4	2.4	2.4	1.1	1.4	1.4	3.1	2.5	2.5
Total land holdings	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 6.12: AVERAGE AREA UNDER TEMPORARY CROPS BY CROP TYPE AND SIZE OF HOLDING NEPAL, 2001/02

Crop	Size of holding							
	Less than 0.5 ha		0.5 ha - 2.0 ha		2.0 ha and over		Total	
	Average area (ha)	%	Average area (ha)	%	Average area (ha)	%	Average area (ha)	%
Cereal grains	0.34	78.0	1.27	80.1	3.82	81.2	1.03	80.1
Rice	0.13	29.0	0.55	34.5	2.04	43.4	0.46	36.1
Wheat	0.08	17.8	0.29	18.0	0.94	20.0	0.24	18.6
Maize	0.10	23.0	0.32	20.1	0.51	10.9	0.23	18.0
Millet	0.04	8.5	0.11	6.6	0.13	2.8	0.08	5.9
Barley	0.00	1.1	0.02	1.1	0.02	0.5	0.01	0.9
Legumes	0.03	6.7	0.13	8.1	0.55	11.6	0.11	8.9
Tubers	0.01	2.6	0.03	2.2	0.09	1.9	0.03	2.2
Cash crops	0.00	0.4	0.02	1.0	0.14	2.9	0.02	1.4
Oilseeds	0.02	4.4	0.08	4.9	0.26	5.5	0.06	5.0
Spices	0.00	0.7	0.01	0.9	0.06	1.2	0.01	1.0
Vegetables	0.01	2.7	0.02	1.3	0.04	0.9	0.02	1.4
Total temporary crops	0.42	100.0	1.57	100.0	5.33	100.0	1.29	100.0
Average holding size	0.25	...	0.95	...	3.27	...	0.79	...

NOTE: The figures refer to the average over all holdings

TABLE 6.13: AVERAGE AREA SOWN PER CROP GROWER BY CROP TYPE AND SIZE OF HOLDING, NEPAL, 1981/82, 1991/92 AND 2001/02

(In hectares)

Crop	Size of holding											
	Less than 0.5 ha			0.5 ha - 2.0 ha			2.0 ha and over			Total		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
Cereal grains	0.25	0.37	0.37	1.22	1.31	1.28	4.93	4.13	3.84	1.49	1.23	1.06
Rice	0.16	0.17	0.19	0.91	0.64	0.67	3.85	2.57	2.44	1.36	0.73	0.62
Wheat	0.13	0.15	0.16	0.49	0.39	0.43	1.53	1.02	1.23	0.60	0.39	0.41
Maize	0.15	0.15	0.16	0.59	0.49	0.46	2.00	1.25	1.09	0.62	0.41	0.36
Millet	0.08	0.12	0.12	0.25	0.34	0.30	0.59	0.85	0.67	0.22	0.28	0.24
Barley	0.06	0.08	0.08	0.17	0.20	0.18	0.41	0.45	0.39	0.15	0.17	0.16
Legumes	0.12	0.08	0.10	0.28	0.23	0.27	0.96	0.87	0.90	0.38	0.29	0.28
Tubers	0.07	0.05	0.05	0.20	0.10	0.10	0.63	0.18	0.22	0.23	0.10	0.10
Cash crops	0.08	0.09	0.12	0.18	0.24	0.33	0.63	0.70	1.10	0.36	0.37	0.49
Oilseeds	0.13	0.08	0.09	0.48	0.22	0.21	1.36	0.65	0.54	0.80	0.26	0.21
Spices	0.07	0.03	0.03	0.15	0.06	0.08	0.22	0.25	0.26	0.14	0.09	0.09
Vegetables	0.05	0.03	0.04	0.04	0.05	0.07	0.08	0.11	0.14	0.05	0.05	0.06

NOTE: The figures refer to the average area sown for holdings with the crop.

TABLE 6.14: NUMBER OF GROWERS AND AREA AND AVERAGE SOWN OF MAIN CEREAL CROPS BY GEOGRAPHIC AREAS, NEPAL, 2001/02

(In thousand hectares except average area sown)

Ecological belt , development region and district	No. of land holdings	Arable land (ha)	Ave. Area arable land, ha	Rice			Wheat			Maize		
				No. of growers	Area sown (ha)	Ave area sown	No. of growers	Area sown (ha)	Ave area sown	No. of growers	Area sown (ha)	Ave area sown
NEPAL	3,364.1	2,357.0	0.7006	2,166.3	769.4	0.3552	1,935.1	793.5	0.4101	2,166.3	769.4	0.3552
ECOLOGICAL BELT												
MOUNTAIN	298.2	200.0	0.6707	256.2	84.0	0.3277	194.7	65.6	0.3371	256.2	84.0	0.3277
HILL	1,586.4	863.0	0.5440	1,461.8	510.2	0.3490	856.5	256.7	0.2997	1,461.8	510.2	0.3490
TARAI	1,479.5	1,294.0	0.8746	448.3	175.3	0.3910	883.9	471.2	0.5331	448.3	175.3	0.3910
DEVELOPMENT REGION												
EASTERN	810.0	709.2	0.8756	480.9	242.3	0.5038	342.8	177.5	0.5177	480.9	242.3	0.5038
CENTRAL	1,035.8	690.3	0.6664	586.7	227.0	0.3869	572.1	217.8	0.3807	586.7	227.0	0.3869
WESTERN	715.8	421.0	0.5881	516.2	150.7	0.2920	357.1	116.0	0.3248	516.2	150.7	0.2920
MID WESTERN	469.5	329.7	0.7023	372.8	112.1	0.3006	360.8	148.7	0.4121	372.8	112.1	0.3006
FAR WESTERN	333.0	206.7	0.6209	209.7	37.3	0.1780	302.2	133.6	0.4420	209.7	37.3	0.1780
Ecol-Region/District												
EASTERN MOUNTAIN	71.3	63.5	0.8898	64.9	29.5	0.4538	29.0	9.3	0.3195	64.9	29.5	0.4538
TAPLEJUNG	22.9	22.0	0.9619	22.0	11.1	0.5056	9.8	4.0	0.4121	22.0	11.1	0.5056
SOLUKHUMBU	20.2	18.2	0.8995	17.5	8.8	0.5064	11.0	3.8	0.3433	17.5	8.8	0.5064
SANKHUWASABHA	28.2	23.3	0.8245	25.5	9.5	0.3732	8.2	1.5	0.1772	25.5	9.5	0.3732
EASTERN HILL	282.8	214.4	0.7581	272.8	140.2	0.5137	74.8	23.0	0.3075	272.8	140.2	0.5137
BHOJPUR	37.0	30.9	0.8351	36.4	19.7	0.5404	10.0	2.8	0.2804	36.4	19.7	0.5404
OKHALDUNGA	29.0	23.7	0.8176	28.6	17.8	0.6208	12.6	3.4	0.2734	28.6	17.8	0.6208
KHOTANG	41.4	30.7	0.7428	40.9	22.9	0.5605	12.6	4.2	0.3328	40.9	22.9	0.5605
UDAYAPUR	45.1	30.1	0.6669	42.0	21.2	0.5048	11.4	5.2	0.4564	42.0	21.2	0.5048
PANCHTHAR	34.1	23.1	0.6786	33.3	10.7	0.3225	5.9	1.3	0.2248	33.3	10.7	0.3225
ILAM	48.5	35.8	0.7392	45.5	22.5	0.4939	10.7	2.9	0.2679	45.5	22.5	0.4939
DHANKUTA	28.4	22.2	0.7808	27.1	15.7	0.5800	5.4	1.4	0.2579	27.1	15.7	0.5800
TERHATHUM	19.3	17.8	0.9211	19.0	9.7	0.5087	6.2	1.8	0.2858	19.0	9.7	0.5087
EASTERN TARAI	455.9	431.4	0.9462	143.2	72.7	0.5077	239.0	145.2	0.6075	143.2	72.7	0.5077
SAPTARI	75.5	71.3	0.9436	2.1	0.5	0.2374	51.7	28.4	0.5493	2.1	0.5	0.2374
SIRAHA	78.9	76.9	0.9745	6.0	2.2	0.3599	46.2	24.4	0.5272	6.0	2.2	0.3599
JHAPA	104.7	98.0	0.9369	66.3	40.3	0.6075	38.2	19.3	0.5057	66.3	40.3	0.6075
MORANG	115.2	109.9	0.9547	49.0	24.0	0.4903	58.4	40.1	0.6861	49.0	24.0	0.4903
SUNSARI	81.7	75.3	0.9213	19.8	5.7	0.2897	44.5	33.0	0.7430	19.8	5.7	0.2897
CENTRAL MOUNTAIN	105.5	63.6	0.6026	100.5	37.2	0.3705	60.9	18.9	0.3108	100.5	37.2	0.3705
DOLAKHA	40.4	25.3	0.6260	38.4	13.9	0.3616	30.4	10.6	0.3507	38.4	13.9	0.3616
SINDHUPALCHOK	57.4	33.2	0.5796	54.6	19.5	0.3573	27.1	7.3	0.2681	54.6	19.5	0.3573
RASUWA	7.7	5.0	0.6508	7.5	3.8	0.5124	3.4	1.0	0.2952	7.5	3.8	0.5124
CENTRAL HILL	429.2	213.2	0.4967	374.8	144.2	0.3847	210.0	51.8	0.2468	374.8	144.2	0.3847
SINDHULI	46.3	28.0	0.6042	44.1	23.3	0.5286	15.6	4.7	0.3031	44.1	23.3	0.5286
RAMECHHAP	38.8	26.2	0.6759	37.0	18.9	0.5109	23.0	7.1	0.3091	37.0	18.9	0.5109
KAVRE	64.6	37.4	0.5793	63.1	24.3	0.3843	43.7	12.9	0.2959	63.1	24.3	0.3843
LALITPUR	32.6	9.3	0.2864	21.8	5.6	0.2579	17.4	2.4	0.1351	21.8	5.6	0.2579
BHAKTAPUR	25.7	5.5	0.2151	13.0	1.2	0.0919	22.0	3.3	0.1520	13.0	1.2	0.0919
KATHMANDU	53.6	12.8	0.2380	33.8	3.9	0.1149	35.8	8.7	0.2427	33.8	3.9	0.1149

TABLE 6.14: NUMBER OF GROWERS AND AREA AND AVERAGE SOWN OF MAIN CEREAL CROPS BY GEOGRAPHIC AREAS, NEPAL, 2001/02

(In thousand hectares except average area sown)

Ecological belt , development region and district	No. of land holdings	Arable land (ha)	Ave. Area arable land, ha	Rice			Wheat			Maize		
				No. of growers	Area sown (ha)	Ave area sown	No. of growers	Area sown (ha)	Ave area sown	No. of growers	Area sown (ha)	Ave area sown
NUWAKOT	49.8	29.1	0.5844	47.6	18.1	0.3792	21.0	5.8	0.2772	47.6	18.1	0.3792
DHADING	58.7	33.1	0.5639	57.8	24.5	0.4244	17.3	3.5	0.2042	57.8	24.5	0.4244
MAKWANPUR	59.1	31.7	0.5373	56.6	24.4	0.4315	14.2	3.3	0.2344	56.6	24.4	0.4315
CENTRAL TARAI	501.1	413.6	0.8253	111.3	45.6	0.4093	301.2	147.0	0.4882	111.3	45.6	0.4093
DHANUSHA	87.5	69.9	0.7995	4.3	1.5	0.3512	58.4	22.7	0.3890	4.3	1.5	0.3512
MAHOTTARI	72.6	62.0	0.8535	8.0	2.7	0.3438	39.7	19.4	0.4895	8.0	2.7	0.3438
SARLAHI	85.1	79.7	0.9367	17.6	6.1	0.3448	51.1	26.5	0.5180	17.6	6.1	0.3448
RAUTAHAT	67.0	62.8	0.9367	6.8	1.7	0.2428	46.6	23.4	0.5021	6.8	1.7	0.2428
BARA	62.3	51.3	0.8238	14.7	6.4	0.4358	43.2	23.5	0.5448	14.7	6.4	0.4358
PARSA	55.2	49.5	0.8969	4.1	1.9	0.4686	43.9	26.4	0.6015	4.1	1.9	0.4686
CHITWAN	71.4	38.3	0.5369	55.8	25.3	0.4523	18.3	5.1	0.2778	55.8	25.3	0.4523
WESTERN MOUNTAIN	4.2	2.0	0.4698	1.4	0.4	0.2629	2.2	0.5	0.2283	1.4	0.4	0.2629
MANANG	1.5	0.9	0.6173	0.5	0.2	0.4012	0.9	0.3	0.3329	0.5	0.2	0.4012
MUSTANG	2.7	1.0	0.3891	0.8	0.1	0.1767	1.3	0.2	0.1570	0.8	0.1	0.1767
WESTERN HILL	485.2	225.5	0.4648	464.5	137.4	0.2959	207.4	48.4	0.2334	464.5	137.4	0.2959
GORKHA	54.6	29.9	0.5474	52.6	17.8	0.3392	10.4	2.0	0.1969	52.6	17.8	0.3392
LAMJUNG	31.9	17.1	0.5359	30.9	10.5	0.3397	7.5	1.2	0.1653	30.9	10.5	0.3397
TANAHU	54.2	26.0	0.4795	52.0	15.2	0.2931	11.3	2.0	0.1762	52.0	15.2	0.2931
SYANGJA	55.9	22.0	0.3937	54.5	14.7	0.2692	25.6	4.2	0.1631	54.5	14.7	0.2692
KASKI	51.8	19.8	0.3818	46.3	8.3	0.1802	15.6	2.5	0.1577	46.3	8.3	0.1802
MYAGDI	21.5	11.6	0.5381	20.7	7.0	0.3371	12.2	2.9	0.2412	20.7	7.0	0.3371
PARBAT	28.5	11.7	0.4118	27.2	6.7	0.2449	12.9	2.3	0.1787	27.2	6.7	0.2449
BAGLUNG	48.7	23.9	0.4913	47.7	15.8	0.3315	32.0	8.2	0.2576	47.7	15.8	0.3315
GULMI	54.4	21.2	0.3891	53.1	15.2	0.2868	27.1	6.7	0.2481	53.1	15.2	0.2868
PALPA	44.4	22.7	0.5120	43.2	14.2	0.3278	19.2	4.8	0.2518	43.2	14.2	0.3278
ARGHAKHANCHI	39.1	19.6	0.4997	36.4	12.0	0.3307	33.6	11.5	0.3411	36.4	12.0	0.3307
WESTERN TARAI	226.5	193.5	0.8545	50.3	12.9	0.2565	147.4	67.0	0.4548	50.3	12.9	0.2565
NAWALPARASI	82.8	55.0	0.6642	30.4	9.7	0.3183	47.0	19.2	0.4081	30.4	9.7	0.3183
RUPANDEHI	86.3	71.9	0.8328	11.5	1.7	0.1511	58.3	28.5	0.4889	11.5	1.7	0.1511
KAPILBASTU	57.3	66.6	1.1621	8.5	1.5	0.1782	42.1	19.4	0.4597	8.5	1.5	0.1782
MID-WESTERN MOUNTAIN	50.2	37.1	0.7383	35.0	7.2	0.2063	37.2	13.0	0.3481	35.0	7.2	0.2063
DOLPA	5.4	2.5	0.4592	3.5	0.6	0.1734	1.6	0.2	0.1361	3.5	0.6	0.1734
JUMLA	14.9	7.8	0.5220	10.7	1.2	0.1082	11.0	1.5	0.1384	10.7	1.2	0.1082
KALIKOT	15.5	14.6	0.9414	13.8	4.8	0.3474	11.8	6.7	0.5702	13.8	4.8	0.3474
MUGU	7.6	6.3	0.8212	3.8	0.3	0.0730	7.0	2.1	0.2950	3.8	0.3	0.0730
HUMLA	6.8	5.9	0.8768	3.2	0.4	0.1158	5.9	2.4	0.4150	3.2	0.4	0.1158

TABLE 6.14: NUMBER OF GROWERS AND AREA AND AVERAGE SOWN OF MAIN CEREAL CROPS BY GEOGRAPHIC AREAS, NEPAL, 2001/02

(In thousand hectares except average area sown)

Ecological belt , development region and district	No. of land holdings	Arable land (ha)	Ave. Area arable land, ha	Rice			Wheat			Maize		
				No. of growers	Area sown (ha)	Ave area sown	No. of growers	Area sown (ha)	Ave area sown	No. of growers	Area sown (ha)	Ave area sown
MID-WESTERN HILL	253.9	145.1	0.5716	240.7	70.7	0.2938	232.9	89.5	0.3840	240.7	70.7	0.2938
PYUTHAN	37.9	21.0	0.5536	37.0	12.7	0.3441	32.2	12.4	0.3863	37.0	12.7	0.3441
ROLPA	36.8	23.9	0.6502	35.8	13.6	0.3805	35.4	14.4	0.4072	35.8	13.6	0.3805
RUKUM	32.5	15.5	0.4771	30.7	8.6	0.2794	29.4	8.6	0.2919	30.7	8.6	0.2794
SALYAN	35.9	23.5	0.6538	35.0	10.0	0.2850	35.4	16.7	0.4716	35.0	10.0	0.2850
SURKHET	48.3	24.7	0.5113	41.9	9.4	0.2250	40.8	13.7	0.3364	41.9	9.4	0.2250
DAILEKH	38.8	21.6	0.5557	37.0	8.3	0.2254	36.5	12.7	0.3466	37.0	8.3	0.2254
JAJARKOT	23.7	15.0	0.6322	23.3	8.0	0.3460	23.3	11.0	0.4709	23.3	8.0	0.3460
MID-WESTERN TARAI	165.4	147.5	0.8920	97.2	34.1	0.3512	90.7	46.3	0.5103	97.2	34.1	0.3512
DANG	68.5	57.7	0.8427	60.2	22.6	0.3746	38.9	17.8	0.4585	60.2	22.6	0.3746
BANKE	49.4	44.2	0.8960	20.5	5.2	0.2560	26.7	11.6	0.4338	20.5	5.2	0.2560
BARDIYA	47.5	45.6	0.9588	16.5	6.3	0.3844	25.1	16.8	0.6721	16.5	6.3	0.3844
FAR WESTERN MOUNTAIN	67.0	34.0	0.5067	54.5	9.7	0.1783	65.3	23.9	0.3668	54.5	9.7	0.1783
BAJURA	19.6	8.5	0.4349	14.8	1.3	0.0892	19.2	5.7	0.2953	14.8	1.3	0.0892
BAJHANG	27.6	11.8	0.4275	20.8	1.9	0.0910	26.6	8.1	0.3056	20.8	1.9	0.0910
DARCHULA	19.9	13.7	0.6873	18.9	6.5	0.3438	19.5	10.2	0.5205	18.9	6.5	0.3438
FAR WESTERN HILL	135.3	64.7	0.4786	108.9	17.6	0.1619	131.4	44.0	0.3349	108.9	17.6	0.1619
ACHHAM	42.4	17.1	0.4024	37.3	5.0	0.1329	41.4	11.3	0.2737	37.3	5.0	0.1329
DOTI	33.3	16.4	0.4936	15.7	2.1	0.1370	31.4	11.8	0.3757	15.7	2.1	0.1370
DADELDHURA	20.6	11.2	0.5416	17.6	2.7	0.1545	20.0	6.3	0.3148	17.6	2.7	0.1545
BAITADI	39.0	20.1	0.5152	38.3	7.8	0.2038	38.6	14.6	0.3778	38.3	7.8	0.2038
FAR WESTERN TARAI	130.6	108.0	0.8269	46.2	10.0	0.2156	105.6	65.6	0.6216	46.2	10.0	0.2156
KAILALI	77.1	64.2	0.8323	16.6	4.8	0.2916	58.3	37.9	0.6495	16.6	4.8	0.2916
KANCHANPUR	53.6	43.9	0.8191	29.7	5.1	0.1731	47.2	27.7	0.5872	29.7	5.1	0.1731

TABLE 6.15: MIXED CROPPING, TEMPORARY CROPS AND DEVELOPMENT REGIONS, 2001/02

Crop	Single crop cultivated alone	Mixed crop (a)	Total crop area sown	No. of holdings	Percent mixed crop(area)
				('000)	
ECOLOGICAL BELTS					
Mountain	319.7	14.1	333.8	41.2	4.2
Hill	1,443.8	132.8	1,568.9	362.4	8.0
Tarai	2,226.8	136.8	2,348.6	263.5	5.2
Eastern	1,183.2	43.6	1,226.8	97.4	3.6
Central	1,203.2	78.3	1,281.5	210.8	6.1
Western	702.4	55.0	757.4	156.0	7.3
Mid Western	537.3	60.9	598.1	138.6	10.2
Far Western	364.3	23.3	387.5	73.2	6.0
NEPAL	3,990.4	260.9	4,251.3.7	667.1	6.1

(a) Crops grown simultaneously with other temporary or permanent crops

TABLE 6.16: CROPPING INTENSITY (a) BY ECOLOGICAL BELT, 1981/82, 1991/92 AND 2001/02

Category	Ecological belt			
	Mountain	Hill	Terai	Nepal
		1981/82		
Arable land (' 000 ha)	115.7	856.5	1,315.3	2,287.5
Land under temporary crops (' 000 ha)	113.5	840.5	1,296.2	2,250.2
Temporary crops sown (' 000 ha)	144.3	1,056.6	2,114.2	3,315.0
Cropping intensity (a)	1.25	1.23	1.61	1.45
Cropping intensity (b)	1.27	1.26	1.63	1.47
		1991/92		
Arable land (' 000 ha)	162.3	871.3	1,289.7	2,323.4
Land under temporary crops (' 000 ha)	158.7	848.2	1,277.7	2,284.6
Temporary crops sown (' 000 ha)	261.8	1,538.2	2,262.9	4,063.0
Cropping intensity (a)	1.61	1.77	1.75	1.75
Cropping intensity (b)	1.65	1.81	1.77	1.78
		2001/02		
Arable land (' 000 ha)	200.0	863.0	1,294.0	2,357.0
Land under temporary crops (' 000 ha)	197.2	844.4	1,284.5	2,326.1
Temporary crops sown (' 000 ha)	333.8	1,568.9	2,348.6	4,251.3
Cropping intensity (a)	1.67	1.82	1.82	1.80
Cropping intensity (b)	1.69	1.86	1.83	1.83

(a) Area of temporary crops on arable land divided by area of arable land.
(b) Temporary crops sown divided by the land under temporary crops (physical area)

TABLE 6.17: CROPPING INTENSITY BY DEVELOPMENT REGION, 1981/82, 1991/92 AND 2001/02

Category	Development region					
	Eastern	Central	Western	Mid West.	Far West.	Nepal
				1981/82		
Arable land (' 000 ha)	722.3	763.0	418.2	244.3	139.6	2,287.5
Land under temporary crops (' 000 ha)	711.1	752.7	413.7	242.8	129.9	2,250.2
Temporary crops sown (' 000 ha)	957.0	1,162.6	592.5	399.2	203.7	3,315.0
Cropping intensity(a)	1.32	1.52	1.42	1.63	1.46	1.45
Cropping intensity(b)	1.35	1.54	1.43	1.64	1.57	1.47
				1991/92		
Arable land (' 000 ha)	699.8	668.3	474.3	292.0	189.1	2,323.4
Land under temporary crops (' 000 ha)	684.4	659.8	467.4	286.7	186.3	2,284.6
Temporary crops sown (' 000 ha)	1,180.5	1,223.9	800.2	503.7	354.7	4,063.0
Cropping intensity(a)	1.69	1.83	1.69	1.73	1.88	1.75
Cropping intensity(b)	1.72	1.85	1.71	1.76	1.90	1.78
				2001/02		
Arable land (' 000 ha)	709.2	690.3	421.0	329.7	206.7	2,357.0
Land under temporary crops (' 000 ha)	701.2	683.2	415.7	324.5	201.5	2,326.1
Temporary crops sown (' 000 ha)	1,226.8	1,281.5	757.4	598.1	387.5	4,251.3
Cropping intensity(a)	1.73	1.86	1.80	1.81	1.87	1.80
Cropping intensity(b)	1.75	1.88	1.82	1.84	1.92	1.83

(a) Area of temporary crops on arable land divided by area of arable land.
(b) Temporary crops sown divided by the land under temporary crops (physical area)

TABLE 6.18: CROPPING INTENSITY (a) BY SIZE OF HOLDING, NEPAL, 2001/02

Category	Size of holding			
	Less than 0.5 ha	5 - 2 ha	2 ha and over	Total
Arable land (' 000 ha)	342.5	1,278.4	736.2	2,357.0
Land under temporary crops (' 000 ha)	340.2	1,262.4	723.5	2,326.1
Temporary crops sown (' 000 ha)	692.5	2,386.9	1,196.3	4,275.7
Cropping intensity (a)	2.02	1.87	1.62	1.81
Cropping intensity (b)	2.04	1.89	1.65	1.84

(a) Area of temporary crops on arable land divided by area of arable land.
(b) Area sown divided by area under temporary crop.

CHAPTER 7
PERMANENT CROPS

Permanent crops are long-term crops which do not have to be replanted for several years after each harvest. As per the definition, permanent crops in Agriculture census 2001/02 cover all fruit trees together with tea and some other crops such as thatches, fodder trees and bamboos.

Permanent crops are grown either in compact plantation or scattered in the residential plot of agricultural holders. There is an increasing trend in the number of holdings reporting permanent crops over the years. The decade between 1981/82 and 1991/92 recorded a large increase in the number of holdings reporting permanent crops. The increase in the number of holdings reporting permanent crops between these two censuses was 48.6 percent. The decade between the census year 1991/92 and 2001/02 recorded an increase of 3.3 percent only.

The number of holdings with permanent crops having compact plantation in 1981/82 was 148.5 thousand. This increased to 281.4 thousand holdings n 1991/92 and to 429.5 thousand holdings in 2001/02.The number of holdings reporting compact plantation are far too few compared to those reporting scattered permanent plants. Area under compact plantation does not show much increment. Over the last three censuses (1981/82 – 2001/02) area under compact plantation has increased by 14 percent only.

Among fruits, mango is the most common with 565.0 thousand holdings (about 42 percent of the total holdings) reporting in 2001/02. Mango is followed by banana with 467 thousand holdings reporting it.

Table 7.0 Summary Statistics

(In thousand except percent and average area)

Description	Census year		
	1981/82	1991/92	2001/02
Holdings with permanent crops	329.2	1,314.5	1,356.9
Percent of land holdings	15.1	48.6	40.7
Holdings with compact crops	148.5	281.4	429.5
Percent of land holdings	6.8	10.4	12.9
Compact area in ha	29.1	29.4	33.2
Ave. compact area per holding in ha	0.1960	0.1045	0.0774

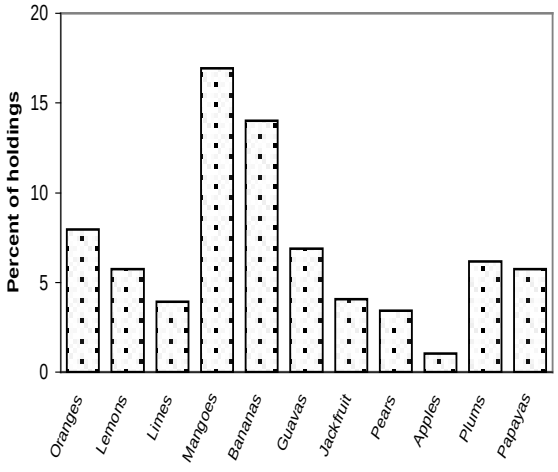
7.1 Permanent crops grown

Permanent crops are crops with a growing cycle of more than one year. For purposes of the 2001/02 Agriculture census, permanent crops cover all fruit trees, together with tea and some other permanent crops such as thatches, fodder trees and bamboos.

The most common or popular fruit tree grown in 2001/02 in 565 thousand holdings or about 42% of the total holding with permanent crops was mango. The second fruit tree most popular was banana with 467.1 thousand holdings growing them and the third most common fruit trees were oranges with 265.9 thousand holdings reporting as having them in their holding. Other fruit trees where significant numbers of holdings were reportedly growing them in 2001/02 are: guavas, plums, lemons, papayas, limes and pears, see TABLE 7.3.

In terms of the number of trees, bananas topped the list with 6.3 million of which about 3 million were found in compact plantations with an area of only 3,140 hectares. Second, were mango trees with a total of 4.2 million of which 2.6 million were in compact plantation with an aggregate area of 18.5 thousand hectares.

FIGURE 7.1: HOLDINGS WITH PERMANENT CROPS, TYPE OF CROP, NEPAL, 2001/02



The third highest number of trees was oranges with 2.8 million trees of which 1.7 were in compact plantations in an area of 3200 hectares. All the other fruit trees such as plum, lemon, apple, pineapple, guavas, papaya, lychee, pear, lime, etc., are less than a million in number, see TABLE 7.9.

7.2 Compact and scattered crops

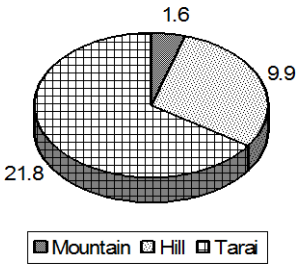
Permanent crops are either grown in compact plantations or scattered in backyards usually along fences that border the residential lot of agricultural holders. In 2001/02, the number of holdings with permanent crops totaled 1.356.9 million. This number represents 40.7% of the total land holdings in Nepal. Of this number, 429.5 thousand holdings reported as having compact plantation, which is 31.7% of the total holdings growing permanent crops, while the rest (927.4 thousand) reported growing scattered permanent trees. Comparing with 1991/92, the number of holdings with permanent crops has slightly increased by 3.3%.

While there was a slight increase in the number of holdings growing permanent crops between 1991/92 and 2001/02, the proportion of growers of permanent crops relative to the total holdings in the country decreased from 48.6% in 1991/92 to 40.7% in 2001/02. But there was an observed increase in the number of compact plantations from 281.4 thousand holdings in 1991/92 to 429.5 thousand holdings in 2001/02, see TABLE 7.1.

However, the increase by about 52% in the number of holdings growing permanent crops did not result in a big increase in the area of compact plantation. But there was an increase in area of 12.9% within a period of ten years, from 29.4 thousand hectares in 1991/92 to 33.2 thousand hectares in 2001/02.

It was observed that the average area of compact plantation per holding has been declining from 0.1960 hectare in 1981/2 to 0.1045 hectare in 1991/92 and further down to 0.0774 hectare in 2001/02, see TABLE 7.1.

FIGURE 7.2 COMPACT PERMANENT CROP PLANTATIONS, 2001/02 ('000 HA)



7.3 Ecological belt comparisons

In 2001/02, Hill belt reported the biggest number of growers of permanent crops. Of the total growers of permanent crops, 53.6% were found in Hill belt while 39.5% were in Tarai. Only 6.9% of permanent crop growers were found in Mountain belt.

Comparatively, there was an increase in the number of holdings growing permanent crops in Hill and Tarai belts between 1991/92 and 2001/02 but the increase in the Hill belt area was not as much as the increase in Tarai. The increase in Hill belt was less than 1% while that of Tarai was 17.0%. However, there was a noted decrease in the number of holdings growing permanent crops in the Mountain belt from 136.5 thousand to 94.2 thousand, a decrease of about 31% in ten year's time. In terms of compact plantation, the increase in the number of growers between 1991/92 and 2001/02 was remarkable in Hill belt from 78 thousand holdings to 191 thousand holdings, an increase of 145%. Tarai compact growers also increase but not as much from 190.3 thousand to 213.5 thousand, an increase of 12.2% for the same period.

Despite the decrease in the total number of permanent crop growers in Mountain belt, there was also a significant increase in the number of holdings growing compact plantation between 1991/92 and 2001/02 from 13.1 thousand to 25 thousand, an increase of about 91%. This increase also resulted to the more than double increase in the area of compact plantation from 700 hectares to 1600 hectares, an increase of 128.6%.

Tarai belt reported 65.6% of the total area of compact plantation (21.8 thousand hectares out of 33.2 thousand hectares). Mountain belt reported the least area of compact plantation of only 1.6 thousand hectares representing only 4.7% of the total while Hill belt reported the rest with 9.9 thousand hectares.

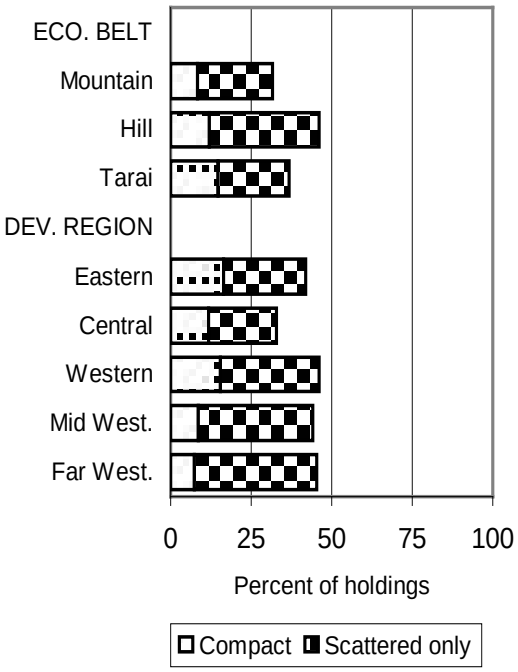
Although Hill belt has only 9.9 thousand hectares of compact plantation, the number of holdings growing permanent crops consisted of 44.5% (191 thousand) of the total holdings growing permanent crops in 2001/02. The big increase in the number of growers in Hill belt has depressed the average area of plantation per holding to only 516 square meters, the lowest among the three belts.

About 82% of holdings planting tea were found in the Hill belt, 14% in Tarai and the rest, 4% in Mountain belt.

7.4 Development regions comparisons

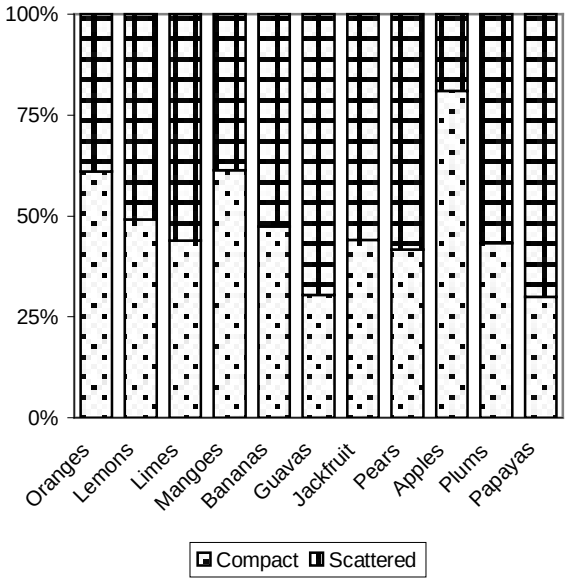
Except in Central development region, the proportion of holdings growing permanent trees relative to the total land holdings within the region in 2001/02 ranged from 42% in Eastern region to 45.4% in Far-Western region, to 44.2% in Mid-Western region, to 46% in Western region. The proportion of permanent crop growers in Central development region was 32.8%. While proportionally Central region yielded the lowest percentage of

FIGURE 7.3: HOLDINGS WITH PERMANENT CROPS, 2001/02



permanent crop growers within the region, it reported the largest number of holdings growing permanent crops among the five regions. Far-Western region reported the least number of holdings, see TABLE 7.2

FIGURE 7.4: COMPACT AND SCATTERED TREES, NEPAL, 2001/02



Compact plantation growers were mostly found in three regions, namely: Eastern region, 132.2 thousand holdings; Central region, 122.0 thousand holdings; and Western region, 110.6 thousand holdings. Mid Western and Far Western regions reported only 40.1 thousand and 24.5 thousand holdings growing compact plantation, respectively.

Of the 33.2 thousand hectares of compact plantation, more than one-third or 11.9 thousand hectares were found in Central region while 10.3 thousand hectares were in Eastern region. The three other regions reported the following area of compact plantation: Western region, 6,700 hectares; Mid-Western region, 3,100 hectares and Far-Western region, 1,200 hectares.

Central region had the largest average area of compact plantation per holding in 2001/02 with 979 square meters compared with the national average of 774 square meters, see T.ABLE 7.2.

Tea plantations were mostly found in Eastern region with 57% of the holdings growing tea and in Western region, 35% of the holdings were growing tea.

7.5 Comparison of small and large holdings

Majority of the holdings growing permanent crops was found in the middle-sized holdings of 0.5 to less than 2 hectares while 10% of the holdings growing permanent crops belong to the large holdings. Holdings with less than half a hectare comprised 39.1% of the total.

The distribution of compact plantations is still dominated by the middle-sized holdings where 56.6% of the total compact plantations belong, while a little more than one-fourth (25.5%) were with the small holdings. Compact plantations among large holdings consisted of 17.9% of the total.

Among the large holdings growing permanent crops, 56.4% were engaged in

compact crop growing, while the small holdings reported only 20.7%.

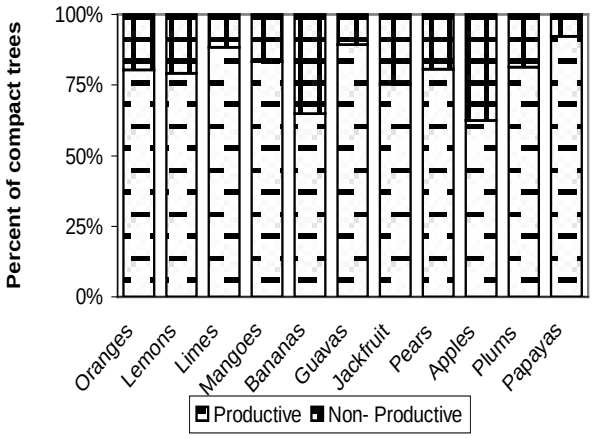
The most popular fruit tree among the large holdings is mango where 69.5% of the holdings reported growing mango trees. On the other hand, bananas were reported as the most common permanent crop among the small holdings where about one-third or 33.6% of the holdings have banana trees. The second permanent tree in importance is mango with less than a third of the holdings reporting. Other fruit trees that were usually present in about 10% to 17% of the holdings were: oranges, lemon, guavas, jack fruit, plums and papayas. Very few holdings reported the growing of pineapples, lychees, apples, pears and pomegranates, see TABLE 7.5.

7.6 Productive/non-productive trees

Of the 33,200 hectares planted to compact permanent trees, 26,500 hectares were reported to be productive or bearing fruits. This represents almost 79.8% of the total area of compact plantation. Non-productive trees occupied an area of 6,700 hectares equivalent to 20.2% of the total area under compact plantation.
There were a total of 12.932,000 fruit trees found in compact plantation of 33,200 hectares involving 429,400 land holdings. The average density per hectare of compact plantation in 2001/02 was 390 trees per hectare. In 1991/92 the total number of trees in compact plantation was 9,110,700 in an area of 29,400 hectares operated by 281,400 land holdings. The density per hectares was 310 trees per hectare. There was an increase of 25.8% in the density of compact plantation.

Of the 12.9 million fruit trees in compact plantations, about 9.5 million trees or 73.5% were productive or bearing fruits. The highest percentage of fruit trees bearing in 2001/02 was papaya with 92.4% of the total trees bearing, followed by guavas with 89.4% productive. Other fruit trees with more than 75% productive in 2001/02 were the following: lime, 89.4%; mangoes, 83.4%; plums, 81.35; pears, 80.5%; oranges, 80.4%; lemons, 79.3%; and jack fruit, 75.4%, see TABLE 7.10.
Among the non-productive trees, lychees reported the highest percentage of 53.9% of the total fruit trees of not being

FIGURE 7.5: PRODUCTIVE AND NON-PRODUCTIVE TREES, COMPACT CROPS, NEPAL, 2001/02



productive. The second largest group of non-productive trees percentage-wise was pomegranate with 45.5%.

For teas, 81% of the total area planted was reported to be productive in 2001/02. In 1991/92, the percentage of area with productive tea was higher at 88.1%.

7.7 Thatch, fodder trees and bamboo

For agriculture census purposes, thatch, fodder trees and bamboo grown in compact plantation within the boundaries of the agricultural holding were considered as permanent crops. Since these are not food crops, these were treated separately from the fruit crops.

Of the 3.34 million land holdings in Nepal in 2001/02, about 266,300 holdings or 8.0% of the total were found to cultivate thatch, 585,300 holdings or 17.5% were growing fodder trees and 353,100 holdings

or 10.6% of the total holdings were growing bamboo.
There was an increase in the number of holdings that cultivated thatch by 22.4% between 1991/92 and 2001/02. There was a minimal increase of 2.2% in the number of holdings in raising fodder trees but in the case of the bamboo, there was a decrease of 12.8% in the number of holdings engaged in the cultivation of bamboo during the same period.

In 2001/02, the total area of compact plantation of thatch was 67,600 hectares, an increase of 1.9% over the compact area in 1991/92. For fodder trees, the compact area in 2001/02 was 7,300 hectares and this area is 191.2% more than the compact area in 1991/92, which was only 2,500, the biggest increase was observed to have occurred in the Hill belt.

The compact area for bamboo in 2001/02 was comparatively the lowest among these three crops, which was 6,300 hectares and the increment was also minimal when compared with 1991/92 compact area of 6,000 hectares. In 1991/92, Hill belt reported the largest compact area of bamboo at 3200 hectares compared with 2400 hectares in Tarai and 500 hectares in Mountain. However, in 2001/02, Tarai belt reported the biggest compact area of 4000 hectares of bamboo plantation, an increase of 66% compared with decreased area in Mountain and Hill belts, see TABLE 7.11.

By development regions, a big increase in the number of holdings with compact plantation for thatch was noted in Central, Western and Far-Western regions between 1991/92 and 2001/02 but the number of growers decreased in Eastern and Mid-Western regions for the same period. The same trend was observed for fodder trees. However, for bamboo, it is only in Far-Western region where an increase was noted.

TABLE 7.1: NUMBER OF HOLDINGS WITH PERMANENT CROPS AND COMPACT AREA BY ECOLOGICAL BELT, NEPAL, 1981/82, 1991/92 AND 2001/02

(In thousand except percent and average area)

Category	Ecological belt						Nepal	%
	Mountain	% to total	Hill	% to total	Tarai	% to total		
				1981/82				
Holdings with permanent crops	24.8	7.5	84.3	25.6	220.1	66.9	329.2	100.0
Percent of land holdings	12.6	…	8.1	…	23.2	…	15.1	…
Holdings with compact crops	12.6	8.5	37.4	25.2	98.5	66.3	148.5	100.0
Percent of land holdings	6.4	…	3.6	…	10.4	…	6.8	…
Compact area in ha	0.8	2.7	8.5	29.2	19.8	68.0	29.1	100.0
Ave. compact area per holding in ha*	0.0635	…	0.2273	…	0.2010	…	0.1960	…
				1991/92				
Holdings with permanent crops	136.5	10.4	720.3	54.8	457.7	34.8	1,314.5	100.0
Percent of land holdings	52.5	…	53.3	…	41.9	…	48.6	…
Holdings with compact crops	13.1	4.7	78.0	27.7	190.3	67.6	281.4	100.0
Percent of land holdings	5.0	…	5.8	…	17.4	…	10.4	…
Compact area in ha	0.7	2.4	6.7	22.8	22.0	74.8	29.4	100.0
Ave. compact area per holding in ha*	0.0534	…	0.0859	…	0.1156	…	0.1045	…
				2001/02				
Holdings with permanent crops	94.2	6.9	727.2	53.6	535.6	39.5	1,356.9	100.0
Percent of land holdings	31.7	…	46.0	…	36.7	…	40.7	…
Holdings with compact crops	25.0	5.8	191.0	44.5	213.5	49.7	429.5	100.0
Percent of land holdings	8.4	…	12.1	…	14.6	…	12.9	…
Compact area in ha	1.6	4.7	9.9	29.7	21.8	65.6	33.2	100.0
Ave. compact area per holding ha*	0.0626	…	0.0516	…	0.1022	…	0.0774	…

*/Actual hectare not in thousand.

TABLE 7.2: NUMBER OF HOLDINGS WITH PERMANENT CROPS AND COMPACT AREA BY DEVELOPMENT REGION, 1981/82, 1991/92 AND 2001/02

(In thousand except percent and average area)

Category	Development region					Nepal
	Eastern	Central	Western	Mid Western	Far Western	
			1981/82			
Holdings with permanent crops	99.1	96.5	66.1	29.5	37.9	329.2
Percent of land holdings	17.2	13.7	14.6	10.7	21.8	15.1
Holdings with compact crops	51.9	44.3	26.9	14.1	11.3	148.5
Percent of land holdings	9.0	6.3	5.9	5.1	6.5	6.8
Compact area in ha	9.6	14.0	3.9	0.5	1.0	29.1
Ave. compact area per holding in ha*	0.1850	0.3160	0.1450	0.0355	0.0885	0.1960
			1991/92			
Holdings with permanent crops	313.3	352.2	311.1	207.8	130.0	1,314.5
Percent of land holdings	49.9	41.7	51.6	56.4	50.0	48.6
Holdings with compact crops	86.4	103.7	60.0	20.2	11.1	281.4
Percent of land holdings	13.8	12.3	9.9	5.5	4.3	10.4
Compact area in ha	12.3	9.4	5.4	1.5	0.8	29.4
Ave. compact area per holding in ha*	0.1424	0.0906	0.0900	0.0743	0.0721	0.1045
			2001/02			
Holdings with permanent crops	335.5	336.8	327.7	206.5	150.5	1,356.9
Percent of land holdings	42.0	32.8	46.0	44.2	45.4	40.7
Holdings with compact crops	132.2	122.0	110.6	40.1	24.5	429.5
Percent of land holdings	16.5	11.9	15.5	8.6	7.4	12.9
Compact area in ha	10.3	11.9	6.7	3.1	1.2	33.2
Ave. compact area per holding in ha*	0.0777	0.0979	0.0608	0.0782	0.0471	0.0774

*/Actual hectare, not in thousand.

TABLE 7.3: NUMBER AND PERCENT OF HOLDINGS WITH PERMANENT CROPS BY CROP TYPE AND ECOLOGICAL BELT, NEPAL, 2001/02

(In thousand except percent)

Crop	Ecological belt						Nepal	%
	Mountain	% to total	Hill	% to total	Tarai	% to total		
Total land holdings	297.2	8.9	1,581.4	47.4	1,458.8	43.7	3,337.4	100.0
Citrus fruit								
Oranges	14.3	5.4	247.8	93.2	3.7	1.4	265.9	100.0
Lemons	11.1	5.8	135.9	70.9	44.8	23.3	191.8	100.0
Limes	4.7	3.6	96.8	73.9	29.5	22.5	131.0	100.0
Sweet oranges	2.9	7.9	32.2	86.9	1.9	5.2	37.0	100.0
Other citrus fruit	9.4	9.0	64.7	62.1	30.2	29.0	104.3	100.0
Other fruit								
Mangoes	7.9	1.4	167.6	29.6	390.0	69.0	565.4	100.0
Bananas	24.4	5.2	295.3	63.2	147.4	31.6	467.1	100.0
Guavas	6.3	2.8	126.0	54.9	97.0	42.3	229.4	100.0
Jackfruit	2.4	1.7	50.8	37.4	82.8	60.9	136.0	100.0
Pineapples	1.0	3.6	19.6	74.3	5.8	22.0	26.4	100.0
Lychees	1.0	1.3	28.6	36.1	49.7	62.6	79.3	100.0
Pears	11.7	10.3	96.2	84.6	5.7	5.0	113.6	100.0
Apples	17.2	49.2	17.2	49.0	0.6	1.8	35.0	100.0
Plums	30.7	14.9	156.8	76.0	18.7	9.1	206.2	100.0
Papayas	2.3	1.2	102.6	53.6	86.6	45.2	191.5	100.0
Pomegranate	1.4	5.4	16.9	65.3	7.6	29.3	25.9	100.0
Other fruit	12.6	8.0	39.9	25.5	104.0	66.4	156.5	100.0
Tea	0.9	3.9	17.8	81.7	3.1	14.4	21.8	100.0
Holdings with permanent crops	94.2	6.9	727.2	53.6	535.6	39.5	1,356.9	100.0
Holdings with compact crops	25.0	5.8	191.0	44.5	213.5	49.7	429.5	100.0

Note: Holdings reported as many permanent crops as there are in the holding.

TABLE 7.3a: PERCENT OF HOLDINGS GROWING PERMANENT CROPS BY TYPE BY ECOLOGICAL BELTS, NEPAL, 2001/022

(In thousand except percent)

Crop	Ecological belt						Nepal	%
	Mountain	%	Hill	%	Tarai	%		
Total land holdings	297.2	100.0	1,581.4	100.0	1,458.8	100.0	3,337.4	100.0
Citrus fruit								
Oranges	14.3	4.8	247.8	15.7	3.7	0.3	265.9	8.0
Lemons	11.1	3.7	135.9	8.6	44.8	3.1	191.8	5.7
Limes	4.7	1.6	96.8	6.1	29.5	2.0	131.0	3.9
Sweet oranges	2.9	1.0	32.2	2.0	1.9	0.1	37.0	1.1
Other citrus fruit	9.4	3.1	64.7	4.1	30.2	2.1	104.3	3.1
Other fruit								
Mangoes	7.9	2.7	167.6	10.6	390.0	26.7	565.4	16.9
Bananas	24.4	8.2	295.3	18.7	147.4	10.1	467.1	14.0
Guavas	6.3	2.1	126.0	8.0	97.0	6.7	229.4	6.9
Jackfruit	2.4	0.8	50.8	3.2	82.8	5.7	136.0	4.1
Pineapples	1.0	0.3	19.6	1.2	5.8	0.4	26.4	0.8
Lychees	1.0	0.3	28.6	1.8	49.7	3.4	79.3	2.4
Pears	11.7	4.0	96.2	6.1	5.7	0.4	113.6	3.4
Apples	17.2	5.8	17.2	1.1	0.6	0.0	35.0	1.0
Plums	30.7	10.3	156.8	9.9	18.7	1.3	206.2	6.2
Papayas	2.3	0.8	102.6	6.5	86.6	5.9	191.5	5.7
Pomegranate	1.4	0.5	16.9	1.1	7.6	0.5	25.9	0.8
Other fruit	12.6	4.2	39.9	2.5	104.0	7.1	156.5	4.7
Tea	0.9	0.3	17.8	1.1	3.1	0.2	21.8	0.7
Holdings with permanent crops	94.2	31.7	727.2	46.0	535.6	36.7	1,356.9	40.7
Holdings with compact crops	25.0	8.4	191.0	12.1	213.5	14.6	429.5	12.9
% holdings with compact crops	26.5	…	26.3	…	39.9	…	31.7	…

TABLE 7.4: NUMBER OF HOLDINGS WITH PERMANENT CROPS BY CROP TYPE AND DEVELOPMENT REGION, NEPAL, 2001/02

(In thousand)

Crop	Development region					Nepal
	Eastern	Central	Western	Mid West.	Far West.	
Total land holdings	799.7	1,026.9	711.7	467.4	331.7	3,337.4
Citrus fruit						
Oranges	30.4	42.0	121.1	41.3	31.1	265.9
Lemons	30.1	35.3	53.4	44.7	28.3	191.8
Limes	12.4	31.3	53.2	19.9	14.2	131.0
Sweet oranges	1.0	2.5	4.9	5.3	23.3	37.0
Other citrus fruit	19.6	25.7	18.3	19.1	21.7	104.3
Other fruits						
Mangoes	174.0	169.7	85.2	74.7	61.8	565.4
Bananas	118.3	99.0	113.2	84.5	52.2	467.1
Guavas	39.0	44.8	62.9	47.4	35.3	229.4
Jackfruit	39.2	38.3	30.3	12.9	15.3	136.0
Pineapples	5.3	7.4	10.7	2.2	0.7	26.4
Lychees	30.2	22.9	16.3	5.6	4.4	79.3
Pears	15.8	25.6	41.6	21.9	8.8	113.6
Apples	4.5	4.2	4.0	17.2	5.0	35.0
Plums	23.7	43.2	52.1	42.5	44.8	206.2
Papayas	26.6	41.7	59.2	38.6	25.4	191.5
Pomegranate	3.8	9.2	3.5	4.7	4.7	25.9
Other fruit	91.7	21.0	13.4	13.5	16.9	156.5
Tea	12.4	1.0	7.7	0.5	0.3	21.8
Holdings with permanent crops	335.5	336.8	327.7	206.5	150.5	1,356.9
Holdings with compact crops	132.2	122.0	110.6	40.1	24.5	429.5

Note: Holdings reported as many permanent trees as there are in the holding.

TABLE 7.4a: PERCENT OF HOLDINGS GROWING PERMANENT CROPS BY TYPE AND BY DEVELOPMENT REGION, NEPAL, 2001/02

(In percent)

Crop	Development region					Nepal
	Eastern	Central	Western	Mid West.	Far West.	
Total land holdings	799.7	1,026.9	711.7	467.4	331.7	3,337.4
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Citrus fruit						
Oranges	3.8	4.1	17.0	8.8	9.4	8.0
Lemons	3.8	3.4	7.5	9.6	8.5	5.7
Limes	1.6	3.0	7.5	4.3	4.3	3.9
Sweet oranges	0.1	0.2	0.7	1.1	7.0	1.1
Other citrus fruit	2.4	2.5	2.6	4.1	6.5	3.1
Other fruit						
Mangoes	21.8	16.5	12.0	16.0	18.6	16.9
Bananas	14.8	9.6	15.9	18.1	15.7	14.0
Guavas	4.9	4.4	8.8	10.1	10.6	6.9
Jackfruit	4.9	3.7	4.3	2.8	4.6	4.1
Pineapples	0.7	0.7	1.5	0.5	0.2	0.8
Lychees	3.8	2.2	2.3	1.2	1.3	2.4
Pears	2.0	2.5	5.8	4.7	2.7	3.4
Apples	0.6	0.4	0.6	3.7	1.5	1.0
Plums	3.0	4.2	7.3	9.1	13.5	6.2
Papayas	3.3	4.1	8.3	8.3	7.6	5.7
Pomegranate	0.5	0.9	0.5	1.0	1.4	0.8
Other fruit	11.5	2.0	1.9	2.9	5.1	4.7
Tea	1.6	0.1	1.1	0.1	0.1	0.7
Holdings with permanent crops	42.0	32.8	46.0	44.2	45.4	40.7
Holdings with compact crops	16.5	11.9	15.5	8.6	7.4	12.9
% holdings with compact crops	39.4	36.2	33.8	19.4	16.3	31.7

TABLE 7.5: NUMBER OF HOLDINGS WITH PERMANENT CROPS BY CROP TYPE AND SIZE OF HOLDING, NEPAL, 2001/02

(In thousand except percent)

Crop	Size of holding						Nepal	%
	Less than 0.5 ha	% to total	0.5 - < 2.0 ha.	% to total	2.0 ha. & over	% to total		
Total land holdings	1,578.9	100.0	1,504.3	100.0	254.2	100.0	3,337.4	100.0
Citrus fruit								
Oranges	109.2	20.6	143.1	20.7	13.6	10.0	265.9	19.6
Lemons	66.8	12.6	108.5	15.7	16.5	12.1	191.8	14.1
Limes	47.0	8.9	74.1	10.7	9.9	7.3	131.0	9.7
Sweet oranges	13.5	2.5	20.9	3.0	2.6	1.9	37.0	2.7
Other citrus fruit	40.8	7.7	54.4	7.9	9.1	6.7	104.3	7.7
Other fruit								
Mangoes	172.9	32.6	297.9	43.1	94.6	69.5	565.4	41.7
Bananas	178.2	33.6	252.2	36.5	36.6	26.9	467.1	34.4
Guavas	92.6	17.5	117.0	16.9	19.7	14.5	229.4	16.9
Jackfruit	40.4	7.6	75.7	11.0	19.9	14.7	136.0	10.0
Pineapples	8.2	1.6	15.6	2.3	2.6	1.9	26.4	1.9
Lychees	23.3	4.4	42.9	6.2	13.1	9.6	79.3	5.8
Pears	38.5	7.3	67.0	9.7	8.1	6.0	113.6	8.4
Apples	10.7	2.0	21.2	3.1	3.1	2.3	35.0	2.6
Plums	80.0	15.1	114.4	16.6	11.9	8.7	206.2	15.2
Papayas	82.1	15.5	96.1	13.9	13.4	9.9	191.5	14.1
Pomegranate	9.5	1.8	14.1	2.0	2.2	1.6	25.9	1.9
Other fruit	56.3	10.6	78.9	11.4	21.3	15.6	156.5	11.5
Tea	4.9	0.9	12.2	1.8	4.7	21.7	21.8	1.6
Holdings with permanent crops	530.1	39.1	690.7	50.9	136.1	10.0	1,356.9	100.0
Holdings with compact crops	109.7	25.5	242.9	56.6	76.8	17.9	429.4	100.0
% holding with compact crops	20.7	…	35.2	…	56.4	…	31.6	…

TABLE 7.6: NUMBER OF PERMANENT CROP TREES BY TYPE AND ECOLOGICAL BELT, NEPAL, 2001/02

(In thousand except percent)

Crop	Ecological belt						Nepal	%
	Mountain	% to total	Hill	% to total	Terai	% to total		
Citrus fruit	301.4	6.0	4,411.4	88.0	299.6	6.0	5,012.5	100.0
Oranges	169.3	6.0	2,637.3	93.4	18.1	0.6	2,824.7	100.0
Lemons	63.6	7.2	720.7	81.6	99.1	11.2	883.4	100.0
Limes	10.4	2.2	399.7	84.1	65.2	13.7	475.3	100.0
Sweet oranges	19.9	7.4	238.6	88.8	10.2	3.8	268.6	100.0
Other citrus fruit	38.2	6.8	415.2	74.1	107.0	19.1	560.4	100.0
Other fruit	1,018.4	5.4	8,649.0	45.5	9,341.7	49.1	19,009.0	100.0
Mangoes	36.1	0.9	803.5	19.2	3,355.9	80.0	4,195.5	100.0
Bananas	224.3	3.6	3,308.0	52.5	2,767.3	43.9	6,299.7	100.0
Guavas	26.8	3.1	578.3	67.0	257.9	29.9	863.0	100.0
Jackfruit	7.1	1.7	197.4	46.9	216.5	51.4	420.9	100.0
Pineapples	34.1	3.9	759.7	87.7	72.4	8.4	866.2	100.0
Lychees	12.5	2.2	166.5	29.2	390.7	68.6	569.7	100.0
Pears	37.9	7.4	464.0	90.0	13.8	2.7	515.8	100.0
Apples	399.3	45.6	471.0	53.7	6.1	0.7	876.4	100.0
Plums	157.3	16.5	743.3	77.9	53.6	5.6	954.2	100.0
Papayas	16.3	2.3	396.1	55.9	296.3	41.8	708.7	100.0
Pomegranate	4.3	2.8	133.8	86.9	15.8	10.3	154.0	100.0
Other fruit	62.3	2.4	627.4	24.3	1,895.3	73.3	2,585.0	100.0

TABLE 7.7: NUMBER OF PERMANENT CROP TREES BY CROP TYPE AND DEVELOPMENT REGION, NEPAL, 2001/02

(In thousand)

Crop	Ecological belt					Nepal
	Eastern	Central	Western	Mid-Western	Far Western	
Citrus fruit 1(Total)	672.4	780.6	2,232.6	811.5	515.5	5,012.5
Oranges	417.2	444.1	1,282.2	475.7	205.6	2,824.7
Lemons	128.8	107.7	379.5	180.8	86.6	883.4
Limes	37.0	100.4	247.0	54.0	36.9	475.3
Sweet oranges	5.5	28.4	72.3	48.1	114.4	268.6
Other citrus fruit	83.9	100.0	251.5	52.9	72.1	560.4
Other fruits (Total)	5,761.6	4,398.7	4,783.6	2,568.1	1,497.1	19,009.0
Mangoes	1,186.0	1,784.0	566.5	381.6	277.4	4,195.5
Bananas	1,459.2	1,221.5	2,199.5	759.7	659.8	6,299.7
Guavas	111.9	139.3	341.2	163.2	107.4	863.0
Jackfruit	117.6	107.0	127.5	27.6	41.3	420.9
Pineapples	148.9	314.3	371.2	27.3	4.6	866.2
Lychees	316.4	131.0	95.3	18.3	8.7	569.7
Pears	46.9	106.0	190.0	143.3	29.7	515.8
Apples	73.2	47.9	61.4	656.9	36.9	876.4
Plums	108.8	177.4	322.8	198.6	146.5	954.2
Papayas	85.4	132.7	269.9	128.0	92.8	708.7
Pomegranate	12.0	45.4	74.3	12.8	9.5	154.0
Other fruit	2,095.4	192.2	163.9	50.8	82.7	2,585.0
			Percent to total			
Citrus fruit (Total)	13.4	15.6	44.5	16.2	10.3	100.0
Oranges	14.8	15.7	45.4	16.8	7.3	100.0
Lemons	14.6	12.2	43.0	20.5	9.8	100.0
Limes	7.8	21.1	52.0	11.4	7.8	100.0
Sweet oranges	2.0	10.6	26.9	17.9	42.6	100.0
Other citrus fruit	15.0	17.8	44.9	9.4	12.9	100.0
Other fruits (Total)	30.3	23.1	25.2	13.5	7.9	100.0
Mangoes	28.3	42.5	13.5	9.1	6.6	100.0
Bananas	23.2	19.4	34.9	12.1	10.5	100.0
Guavas	13.0	16.1	39.5	18.9	12.4	100.0
Jackfruit	27.9	25.4	30.3	6.6	9.8	100.0
Pineapples	17.2	36.3	42.9	3.2	0.5	100.0
Lychees	55.5	23.0	16.7	3.2	1.5	100.0
Pears	9.1	20.5	36.8	27.8	5.8	100.0
Apples	8.4	5.5	7.0	75.0	4.2	100.0
Plums	11.4	18.6	33.8	20.8	15.4	100.0
Papayas	12.0	18.7	38.1	18.1	13.1	100.0
Pomegranate	7.8	29.5	48.2	8.3	6.2	100.0
Other fruit	81.1	7.4	6.3	2.0	3.2	100.0

TABLE 7.8: NUMBER PERMANENT CROP TREES BY CROP TYPE AND SIZE OF HOLDING, NEPAL, 2001/02

(In thousand except percent)

Crop	Size of holding in hectare						Nepal	%
	Less than 0.5 ha	% to total	0.5 - 2.0 ha	% to total	2 ha and over	% to total		
Citrus fruit (Total)	1,303.6	26.0	2,984.3	59.5	724.5	14.5	5,012.5	100.0
Oranges	729.9	25.8	1,720.3	60.9	374.5	13.3	2,824.7	100.0
Lemons	185.1	21.0	507.7	57.5	190.6	21.6	883.4	100.0
Limes	100.8	21.2	329.5	69.3	45.1	9.5	475.3	100.0
Sweet oranges	101.3	37.7	110.2	41.0	57.1	21.3	268.6	100.0
Other citrus fruit	186.6	33.3	316.6	56.5	57.2	10.2	560.4	100.0
Other fruits (Total)	4,058.3	21.3	10,489.9	55.2	4,460.8	23.5	19,009.0	100.0
Mangoes	695.3	16.6	1,981.9	47.2	1,518.2	36.2	4,195.5	100.0
Bananas	1,515.9	24.1	3,280.7	52.1	1,503.1	23.9	6,299.7	100.0
Guavas	235.8	27.3	469.6	54.4	157.7	18.3	863.0	100.0
Jackfruit	78.4	18.6	246.8	58.6	95.6	22.7	420.9	100.0
Pineapples	165.5	19.1	622.3	71.8	78.4	9.1	866.2	100.0
Lychees	58.6	10.3	408.8	71.8	102.3	18.0	569.7	100.0
Pears	122.3	23.7	345.8	67.1	47.7	9.2	515.8	100.0
Apples	116.0	13.2	659.8	75.3	100.6	11.5	876.4	100.0
Plums	240.8	25.2	664.6	69.7	48.8	5.1	954.2	100.0
Papayas	219.6	31.0	370.6	52.3	118.6	16.7	708.7	100.0
Pomegranate	19.9	13.0	122.8	79.8	11.2	7.3	154.0	100.0
Other fruit	590.2	22.8	1,316.3	50.9	678.5	26.2	2,585.0	100.0

TABLE 7.9: PERMANENT CROPS - COMPACT AREA AND NUMBER OF COMPACT AND SCATTERED TREES, NEPAL, 1981/82, 1991/92 AND 2001/02

(In thousand except percent)

Crop	Compact area in hectare				Number of trees						
					1991/92			2001/02			% Change
	1981/82	1991/92	2001/02	% Increase 1991-2001 (area)	Compact	Scattered	Total	Compact	Scattered	Total	1991-2001 (trees)
Citrus fruit	1.70	3.40	4.68	37.7	883.4	1,792.6	2,676.0	2,819.0	2,193.5	5,012.5	87.3
Oranges	0.60	2.40	3.20	33.3	619.5	788.4	1,407.9	1,724.6	1,100.1	2,824.7	100.6
Lemons	0.40	0.40	0.62	55.6	124.7	421.1	545.9	434.0	449.4	883.4	61.8
Limes	0.40	0.20	0.29	45.9	52.3	298.1	350.3	208.5	266.8	475.3	35.7
Sweet oranges	0.10	-	0.23	100.0	13.9	60.8	74.7	122.3	146.3	268.6	259.6
Other citrus fruit	0.20	0.40	0.34	-15.2	73.0	224.2	297.2	329.6	230.8	560.4	88.6
Other fruits	27.50	22.50	28.04	24.6	8,227.3	7,832.7	16,060.0	10,113.2	8,895.8	19,009.0	18.4
Mangoes	5.20	15.20	18.48	21.6	1,538.4	832.9	2,371.3	2,573.7	1,621.8	4,195.5	76.9
Bananas	4.00	2.10	3.14	49.5	1,796.2	3,799.1	5,595.4	2,987.0	3,312.7	6,299.7	12.6
Guavas	1.10	0.40	0.48	21.0	107.4	615.4	722.8	262.7	600.3	863.0	19.4
Jackfruit	1.80	0.60	0.68	12.7	50.3	176.6	226.9	185.2	235.7	420.9	85.5
Pineapples	0.40	0.20	0.23	14.4	3,073.5	518.4	3,591.9	454.8	411.4	866.2	-75.9
Lychees	0.10	0.30	0.78	159.7	44.8	64.6	109.4	397.3	172.4	569.7	420.7
Pears	0.20	0.10	0.35	245.7	34.3	154.3	188.6	215.1	300.7	515.8	173.5
Apples	na	0.60	1.38	130.0	150.9	184.3	335.2	709.5	166.9	876.4	161.4
Plums	na	0.10	0.45	347.2	36.5	393.3	429.8	412.1	542.1	954.2	122.0
Papayas	0.70	0.10	0.30	200.9	76.7	418.4	495.1	211.9	496.8	708.7	43.1
Pomegranate	na	0.10	0.09	-13.1	17.2	40.0	57.2	103.8	50.1	154.0	169.2
Other fruit	14.00	2.70	1.70	-37.2	1,301.1	635.4	1,936.4	1,600.1	984.9	2,585.0	33.5
Tea	na	3.50	6.20	77.1	…	…	…	…	…	…	…

TABLE 7.10: COMPACT PERMANENT CROPS – PRODUCTIVE AND NON-PRODUCTIVE TREES, NEPAL, 2001/02

Crop	Number of trees (' 000)			Percent to total trees		
	Productive	Non-Productive	Total trees	Productive	Non-Productive	Total percent
Citrus fruit	2,249.9	569.1	2,819.0	79.8	20.2	100.0
Oranges	1,386.9	337.7	1,724.6	80.4	19.6	100.0
Lemons	344.0	90.0	434.0	79.3	20.7	100.0
Limes	184.1	24.4	208.5	88.3	11.7	100.0
Sweet oranges	89.3	33.0	122.3	73.0	27.0	100.0
Other citrus fruit	245.5	84.1	329.6	74.5	25.5	100.0
Other fruits	7,249.2	2,864.1	10,113.2	71.7	28.3	100.0
Mangoes	2,145.9	427.8	2,573.7	83.4	16.6	100.0
Bananas	1,941.7	1,045.3	2,987.0	65.0	35.0	100.0
Guavas	234.8	27.9	262.7	89.4	10.6	100.0
Jackfruit	139.6	45.6	185.2	75.4	24.6	100.0
Pineapples	313.2	141.6	454.8	68.9	31.1	100.0
Lychees	183.3	214.0	397.3	46.1	53.9	100.0
Pears	173.2	41.9	215.1	80.5	19.5	100.0
Apples	443.2	266.4	709.5	62.5	37.5	100.0
Plums	335.0	77.1	412.1	81.3	18.7	100.0
Papayas	195.8	16.2	211.9	92.4	7.6	100.0
Pomegranate	56.5	47.3	103.8	54.5	45.5	100.0
Other fruit	1,087.0	513.2	1,600.1	67.9	32.1	100.0
Tea*	…	…	…	81.0	19.0	100.0
Compact area ('000 ha)	26.5	6.7	33.2	79.8	20.2	100.0

*/Percent of area

TABLE 7.11: PLANTATION FEATURES OF THATCH, FODDER TREES AND BAMBOO IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02

Geographic area	Total land holdings ('000)	Number of holdings (' 000)			Compact area (' 000 ha)		
		Thatch	Fodder tree	Bamboo	Thatch	Fodder tree	Bamboo
			1991/92				
NEPAL	2,703.9	217.6	572.5	405.1	66.4	2.5	6.0
ECOLOGICAL BELTS							
Mountain	259.9	9.5	89.0	49.2	3.0	0.1	0.5
Hill	1,351.3	197.4	461.0	238.1	60.4	2.2	3.2
Terai	1,092.8	10.6	22.6	117.8	3.0	0.2	2.4
DEVELOPMENT REGIONS							
Eastern	628.5	41.8	147.9	176.3	13.7	0.9	3.8
Central	843.7	11.9	117.4	80.0	3.2	0.2	1.2
Western	603.3	109.1	185.1	101.1	34.1	1.0	0.7
Mid-western	368.3	41.6	107.6	43.9	11.0	0.3	0.3
Far-western	260.1	13.1	14.4	3.7	4.3	…	…
			2001/02				
NEPAL	3,337.4	266.3	585.3	353.1	67.6	7.3	6.3
ECOLOGICAL BELTS							
Mountain	297.2	20.7	38.2	15.5	4.0	0.3	0.1
Hill	1,581.4	236.8	498.5	209.0	60.0	6.6	2.3
Terai	1,458.8	8.8	48.7	128.6	3.7	0.4	4.0
DEVELOPMENT REGIONS							
Eastern	799.7	34.4	116.7	136.1	9.5	3.6	3.1
Central	1,026.9	21.6	122.4	69.6	4.2	0.4	2.3
Western	711.7	160.7	227.3	99.3	42.4	2.4	0.7
Mid-western	467.4	30.4	82.3	43.1	8.2	0.7	0.2
Far-western	331.7	19.2	36.7	5.0	3.3	0.1	…
			% change 2001/02 vs. 1991/92				
		Percent change in holding			Percent change in area		
NEPAL	23.4	22.4	2.2	-12.8	1.9	191.2	5.8
ECOLOGICAL BELTS							
Mountain	14.4	117.8	-57.0	-68.6	34.5	190.5	-83.8
Hill	17.0	19.9	8.1	-12.2	-0.7	199.5	-28.7
Terai	33.5	-16.6	115.3	9.2	21.7	100.2	66.0
DEVELOPMENT REGIONS							
Eastern	27.2	-17.7	-21.1	-22.8	-30.5	304.6	-17.3
Central	21.7	81.4	4.2	-13.0	30.8	97.4	92.2
Western	18.0	47.3	22.8	-1.8	24.4	142.2	2.3
Mid-western	26.9	-26.8	-23.5	-1.9	-25.4	134.8	-47.9
Far-western	27.5	46.2	154.7	34.6	-22.8	100.0	…
			Percent to total, 2001/02				
		Holding			Area		
NEPAL	100.0	8.0	17.5	10.6	100.0	100.0	100.0
ECOLOGICAL BELTS							
Mountain	100.0	7.0	12.9	5.2	6.0	4.0	1.3
Hill	100.0	15.0	31.5	13.2	88.6	90.5	35.9
Terai	100.0	0.6	3.3	8.8	5.4	5.5	62.8
DEVELOPMENT REGIONS							
Eastern	100.0	4.3	14.6	17.0	14.1	50.0	49.5
Central	100.0	2.1	11.9	6.8	6.2	5.4	36.3
Western	100.0	22.6	31.9	14.0	62.7	33.3	11.3
Mid-western	100.0	6.5	17.6	9.2	12.1	9.7	2.5
Far-western	100.0	5.8	11.1	1.5	4.9	1.6	…

CHAPTER 8
IRRIGATION

Definition of irrigation adopted for the census refers to purposively providing land with water, other than rain for crop production. With increase in number of holdings having irrigation, area under irrigation has increased over the years. In 1981/82, 845.8 thousand holdings reported having irrigation covering a total area of 583.9 thousand hectares. This increased to 1997.6 thousand holdings with area coverage of 1168.3 thousand hectares in 2001/02. Almost 60 percent of land holding reported having some form of irrigation in 2001/02.

Land area under irrigation had increased from 23.7 percent in 1981/81 to 44.0 percent in 2001/02.

In 1981/82, 19.8 thousand hectares (3.3%) in mountain, 119.2 thousand hectares (20%) in hill and 444.9 thousand hectares (76%) in tarai were irrigated land. Likewise in 1991/92, 41.8 thousand hectares (5%) in mountain, 245.5 thousand hectares (28%) in hill and 595.1 thousand hectares (67%) in tarai were irrigated land.

In the same way in 2001/02, the irrigated land of mountain, hills and tarai were 62.1 thousand hectares (5%), 304.9 thousand hectares (26%) and 801.3 thousand hectares (69%) respectively.

The trend shows that irrigated land of tarai in 2001/02 increased by 34 percent compared to 1991/92 and increased by 80 percent compared to 1981/82.

Table 8.0 Summary Statistics

Description	Census year		
	1981/82	1991/92	2001/02
Number of Holdings with Irrigation (‘000)	845.8	1,377.5	1,997.6
Percent of Land Holdings	38.7	50.9	59.9
Area of Irrigated (‘000 ha)	583.9	882.4	1,168.3
- Mountain (‘000 ha)	19.8	41.8	62.1
- Hill (‘000 ha)	119.2	245.5	304.9
- Tarai (‘000 ha)	444.9	595.1	801.3
Percent of Holding Area	23.7	34.0	44.0

8.1 Concept of Irrigation

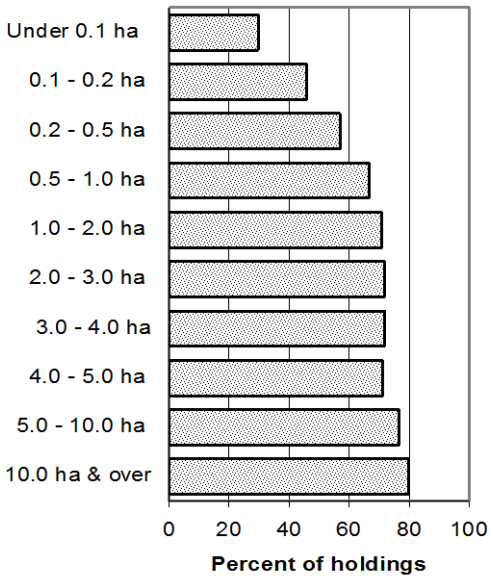
For the purpose of the 2001/02 Agriculture census, irrigation refers to purposely providing land with water through artificial means for crop production or improving pastures. Natural flooding of land by rainfall or overflow of rivers is not considered as irrigation. However, when rainwater and uncontrolled overflow of water from rivers and streams are collected, stored and later on used on the land for crop and pasture production, this is considered as irrigation.

8.2 Land holdings with access to irrigation

The number of land holdings that have access to irrigation facilities in Nepal has been increasing through the years. In 1981/82 a total of 845,800 holdings reported of having irrigation in their farming operations. This number represented 38.7% of the total holdings in the country during that period. The number of holdings with irrigation had increased to 1.4 million in 1991/92, which was 50.9% of the total holdings existing at the time, an increase of 62.9%. In 2001/02, almost 2 million holdings availed of irrigation facilities, which is 59.9% of the total holdings, an increase of 45% over the number in 1991/92.

Tarai belt registered the highest proportion of holdings with irrigation relative to the total holdings within the belt in 2001/02 at 63.3% compared with Mountain belt of 58.2% and Hill belt with 57% of the total holdings with irrigation facilities. In 1991/92, the number of holdings with irrigation in Tarai was 545,300 holdings. This represented 49.9% of the total holdings in Tarai. In 2001/02, the number of holdings with irrigation shut up to 922,700 holdings, an increase of 377,400 holdings more with irrigation facilities which is about 69% over the number in 1991/92. The increase in the number of holdings with irrigation in Hill belt was also significant from 681,800 holdings to 902,100 holdings, an addition of 220,300 holdings that translated to an increase of 32.3%. It is in the Mountain belt where the increase is not dramatic, from 150,500 holdings with irrigation to 172,900 irrigated holdings, an increase of only about 15%.

FIGURE 8.1: HOLDINGS WITH IRRIGATION BY SIZE OF HOLDING, NEPAL, 2001/02



It is significant to observe that the size of the holding is positively correlated with the incidence of holdings with irrigation facilities. That is, as the size of the holdings becomes bigger, the proportion of land holdings with access to irrigation increases. The above chart illustrates the positive relationship. If we look at TABLE 8.8, the access to irrigation facilities has greatly improved among the small holdings, especially those below 0.1 hectare where the increase in the number of holdings with irrigation registered at 91.5% between 1991/92 and 2001/02. It is noted that as the size of the holding becomes bigger, the increment in the use

of irrigation declined up to the point where the number of holdings availing of irrigation facilities actually decreased in number. This phenomenon was observed to occur among the large holdings starting with size 3 hectares onwards, see TABLE 8.8.

8.3 Land under irrigation

The total land area under irrigation has steadily increased proportionally and physically since 1981/82.

In 1981/82, the total land area irrigated registered at 583,900 hectares. This was 23.7% of the total land area of the holdings. The area under irrigation increased to 882,400 hectares in 1991/92, an increase of 51.1% over the area in 1981/82. There was also a corresponding increase in the proportion of this irrigated area to the total land area of the holdings during the period, to 34%.

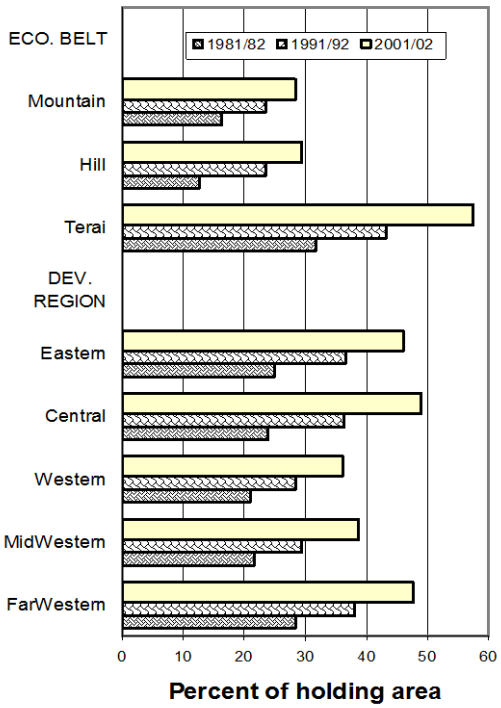
In 2001/02, the area under irrigation had increased to 1,168,300 hectares, an increase of 32.4% over the area under irrigation in 1991/92. Take note, however, that the increase has started to slow down when compared with the level of increase between 1881/82 and 1991/92.

By ecological belt, it is observed that there was a sizeable increase in the area irrigated between 1991/92 and 2001/02 in Tarai belt from 595,100 hectares to 801,300 hectares, an increase of about 35%; 41,800 hectares to 62,100 hectares in Mountain belt, an increase of about 49%; and 245,500 hectares to 304,900 hectares in Hill belt, an increase of approximately 24%.

The proportion of the irrigated area relative to the total area of the holdings was observed to be rather high in Tarai at 57.4% compared with only 29.4% and 28.4% in Hill belt and Mountain belt, respectively.

Like the ecological belts, all the development regions exhibited increases in

FIGURE 8.2: AREA OF LAND IRRIGATED, 1981/82, 1991/92 AND 2001/02



the area under irrigation since 1981/82 up to 2001/02. However, it was observed that the increases had slowed down except in Central development region where the increase between 1991/92 and 2001/02 was higher than the increase between 1981/82 and 1991/92, see TABLE 8.2.

The average area under irrigation has been going down from 0.6904 hectare in 1981/82 to 0.6406 hectare in 1991/92 and 0.5849 hectare in 2001/02. However, if we examine the averages by ecological belt, there seemed to be an increasing average in Mountain belt that runs counter to the trend in Hill and Tarai belts, both of which were on the downtrend.

Except for Mid-Western region where the average irrigated area was increasing, all the other regions exhibited a decreasing average size of irrigated area per holding.

8.4 Source of irrigation

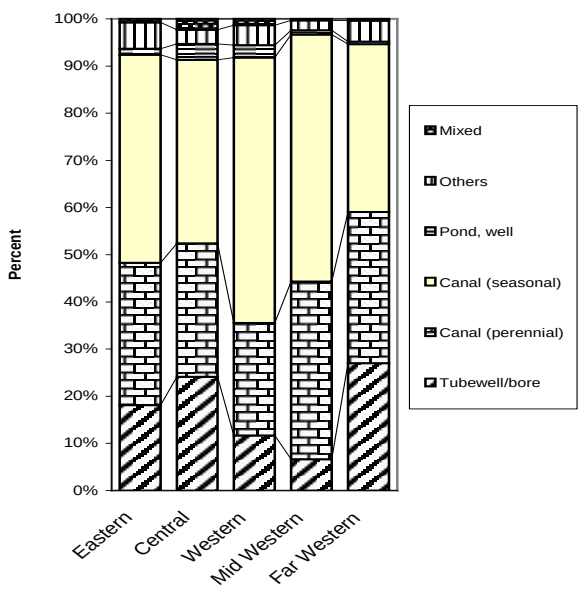
About 57% of the total holdings with irrigation reported "canal (seasonal)" as the source of irrigation water to irrigate their holdings in 1991/92. The percentage of holdings availing of this source declined a little bit in 2001/02 to 54.7% but the area irrigated had increased comparatively. It may be noted, however, that there are holdings that availed of several sources of irrigation water both in 1991/92 and 2001/02.

The second most common source of irrigation both in 1991/92 and 2001/02 is the canal (permanent) where 37.4% of the total holdings reported in 2001/02 as the source of irrigation. Tubewell/bore was availed of only by about 8.7% of the holding in 1991/92 and 15.2% in 2001/02.

However, in Tarai, tubewell/bore ranked second as the source of irrigation compared with canal (permanent) for the Hill belt and Mountain belt.

In Hill and Mountain belts, almost all of the irrigated land holdings depend on canal (seasonal) as well as canal (permanent) as their source of irrigation water. In Tarai belt, there were three important sources of irrigation, as follows in the order of importance areawise: canal (seasonal), 309,700 hectares; tubewell/bore, 212,200 hectares; and canal (permanent), 207,600 hectares.

FIGURE 8.3: SOURCE OF IRRIGATION, NEPAL, 2001/02, PERCENT OF IRRIGATED LAND



By development regions, the two most common source of irrigation are: canal (seasonal) and canal (permanent) where almost 90% of all the holdings reported as their source.

In terms of the area being served by irrigation, there were three regions where three sources were utilized. These sources are canal(seasonal), canal (permanent) and tubewell/bore and the three regions were: Eastern, Central and Far-Western. The use of tubewell/bore for irrigation in Western and Mid-Western regions covered only 11.7% and 6.6% of the total irrigated area, respectively.

TABLE 8.1: NUMBER AND PERCENT OF LAND HOLDINGS IRRIGATING - ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, 1981/82, 1991/92 AND 2001/02

Geographic area	Number irrigating (' 000)			% to total land holdings		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
NEPAL	845.8	1,377.5	1,997.6	38.7	50.9	59.9
ECOLOGICAL BELTS						
Mountain	103.1	150.5	172.9	52.3	57.9	58.2
Hill	413.7	681.8	902.1	39.7	50.5	57.0
Terai	329.1	545.3	922.7	34.8	49.9	63.3
DEVELOPMENT REGIONS						
Eastern	213.0	327.4	451.9	37.0	52.1	56.5
Central	263.9	421.7	652.4	37.4	50.0	63.5
Western	187.5	300.0	405.9	41.4	49.7	57.0
Mid Western	105.3	189.7	271.3	38.1	51.5	58.0
Far Western	76.0	138.8	216.1	43.6	53.4	65.1

TABLE 8.2: AREA AND PERCENT OF LAND IRRIGATED IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1981/82, 1991/92 AND 2001/02

Geographic area	Area irrigated (' 000 ha)			% to total area of land holding		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
NEPAL	583.9	882.4	1,168.3	23.7	34.0	44.0
ECOLOGICAL BELTS						
Mountain	19.8	41.8	62.1	16.2	23.6	28.4
Hill	119.2	245.5	304.9	12.7	23.5	29.4
Terai	444.9	595.1	801.3	31.7	43.3	57.4
DEVELOPMENT REGIONS						
Eastern	192.2	287.0	365.9	24.9	36.6	46.0
Central	196.4	261.4	367.1	23.9	36.3	48.9
Western	97.2	161.0	184.6	21.0	28.4	36.0
Mid Western	56.1	95.6	143.4	21.7	29.4	38.7
Far Western	41.9	77.4	107.4	28.4	38.1	47.7
		Increase/Decrease				
		1981-1991	1991-2001		1981-1991	1991-2001
NEPAL		51.1	32.4 .		43.5	29.5
ECOLOGICAL BELTS						
Mountain		111.1	48.5		45.7	20.3
Hill		106.0	24.2		85.0	24.9
Terai		33.8	34.7		36.6	32.5
DEVELOPMENT REGIONS						
Eastern		49.3	27.5		47.0	25.7
Central		33.1	40.4		51.9	34.8
Western		65.6	14.6		35.2	26.9
Mid Western		70.4	50.0		35.5	31.6
Far Western		84.7	38.8		34.2	25.1
	Average area irrigated per reporting holding			Increase/Decrease		
				1981-1991	1991-2001	
NEPAL	0.6904	0.6406	0.5849	-7.2	-8.7	
ECOLOGICAL BELTS						
Mountain	0.1920	0.2777	0.3592	44.6	29.3	
Hill	0.2881	0.3601	0.3380	25.0	-6.1	
Terai	1.3519	1.0913	0.8685	-19.3	-20.4	
DEVELOPMENT REGIONS						
Eastern	0.9023	0.8766	0.8096	-2.9	-7.6	
Central	0.7442	0.6199	0.5626	-16.7	-9.2	
Western	0.5184	0.5367	0.4547	3.5	-15.3	
Mid Western	0.5328	0.5040	0.5285	-5.4	4.9	
Far Western	0.5513	0.5576	0.4973	1.1	-10.8	

TABLE 8.3: NUMBER OF HOLDINGS WITH ACCESS TO IRRIGATION AND AREA IRRIGATED BY SOURCE OF IRRIGATION, NEPAL, 1991/92 AND 2001/02

Source	Holdings with irrigation		Area irrigated	
	No. ('000)	% 1991/92	'000 ha	%
Canal (permanent)	119.9	8.7	99.8	11.3
Canal (seasonal)	474.3	34.4	245.8	27.9
Pond, well	787.1	57.1	436.7	49.5
Others	51.7	3.8	25.4	2.9
Mixed	129.6	9.4	74.7	8.5
Total	1,377.5	100.0	882.4	100.0
		2001/02		
Tubewell/bore	303.2	15.2	214.9	18.4
Canal (permanent)	747.7	37.4	346.8	29.7
Canal (seasonal)	1,092.7	54.7	521.3	44.6
Pond, well	71.8	3.6	23.9	2.0
Others	115.7	5.8	46.9	4.0
Mixed	25.7	1.3	14.6	1.3
Total	1,997.6	100.0	1,168.3	100.0

TABLE 8.4: NUMBER AND PERCENT OF HOLDINGS WITH ACCESS TO IRRIGATION BY SOURCE OF IRRIGATION AND BY ECOLOGICAL BELT, NEPAL, 2001/02

Source of irrigation (a)	Ecological Belt			
	Mountain	Hill	Tarai	Nepal
	Number of holdings reporting ('000)			
Tubewell/bore	1.5	12.4	289.4	303.2
Canal (permanent)	77.5	386.8	283.4	747.7
Canal (seasonal)	112.7	561.7	418.3	1,092.7
Pond, well	1.8	18.8	51.2	71.8
Others	1.9	36.7	77.0	115.7
Mixed	2.1	9.3	14.4	25.7
Total holdings with access to irrigation	172.9	902.1	922.7	1,997.6
	Percent to total holdings with irrigation			
Tubewell/bore	0.9	1.4	31.4	15.2
Canal (permanent)	44.9	42.9	30.7	37.4
Canal (seasonal)	65.2	62.3	45.3	54.7
Pond, well	1.0	2.1	5.6	3.6
Others	1.1	4.1	8.3	5.8
Mixed	1.2	1.0	1.6	1.3
Total	100.0	100.0	100.0	100.0

(a) Some holdings reported more than one source of irrigation

TABLE 8.5: AREA OF LAND HOLDINGS IRRIGATED BY SOURCE OF IRRIGATION AND BY ECOLOGICAL BELT, NEPAL, 2001/02

Source of irrigation	Ecological Belt			Nepal
	Mountain	Hill	Tarai	
	Area of land holdings irrigated ('000 ha)			
Tubewell/bore	0.3	2.4	212.2	214.9
Canal (permanent)	20.8	118.3	207.6	346.8
Canal (seasonal)	39.2	172.3	309.7	521.3
Pond, well	0.6	2.8	20.4	23.9
Others	0.3	7.4	39.2	46.9
Mixed	0.8	1.6	12.2	14.6
Total area irrigated	62.1	304.9	801.3	1,168.3
	Percent to total area irrigated			
Tubewell/bore	0.4	0.8	26.5	18.4
Canal (permanent)	33.6	38.8	25.9	29.7
Canal (seasonal)	63.2	56.5	38.7	44.6
Pond, well	1.0	0.9	2.6	2.0
Others	0.5	2.4	4.9	4.0
Mixed	1.4	0.5	1.5	1.3
Total	100.0	100.0	100.0	100.0

TABLE 8.6: NUMBER AND PERCENT OF LAND HOLDINGS WITH ACCESS TO IRRIGATION BY SOURCE OF IRRIGATION AND BY DEVELOPMENT REGION, NEPAL, 2001/02

Source of irrigation (a)	Ecological Belt					Nepal
	Eastern	Central	Western	Mid Western	Far Western	
	Number of land holdings					
Tubewell/bore	86.3	134.9	33.5	13.4	35.1	303.2
Canal (permanent)	159.3	237.1	122.5	130.3	98.5	747.7
Canal (seasonal)	232.7	334.5	273.5	149.7	102.4	1,092.7
Pond, well	14.2	32.3	15.7	4.3	5.2	71.8
Others	36.4	35.8	25.7	8.6	9.2	115.7
Mixed	4.7	12.9	5.0	1.6	1.6	25.7
Holdings with access to irrigation	451.9	652.4	405.9	271.3	216.1	1,997.6
	Percent to total land holdings reporting					
Tubewell/bore	19.1	20.7	8.2	5.0	16.2	15.2
Canal (permanent)	35.3	36.3	30.2	48.0	45.6	37.4
Canal (seasonal)	51.5	51.3	67.4	55.2	47.4	54.7
Pond, well	3.2	4.9	3.9	1.6	2.4	3.6
Others	8.1	5.5	6.3	3.2	4.3	5.8
Mixed	1.0	2.0	1.2	0.6	0.7	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

(a) Some holdings reported more than one source of irrigation.

TABLE 8.7: AREA OF LAND HOLDINGS IRRIGATED BY SOURCE OF IRRIGATION AND BY DEVELOPMENT REGION, NEPAL, 2001/02

Source of irrigation	Development region					Nepal
	Eastern	Central	Western	Mid Western	Far Western	
	Total area of land holding irrigated ('000 ha)					
Tubewell/bore	66.2	88.5	21.6	9.5	29.0	214.9
Canal (permanent)	110.4	104.0	44.0	54.0	34.4	346.8
Canal (seasonal)	161.4	142.7	103.9	75.1	38.2	521.3
Pond, well	4.7	12.5	4.8	1.3	0.6	23.9
Others	20.4 `		7.8	3.0	4.7	46.9
Mixed	2.8	8.4	2.5	0.5	0.4	14.6
Total area irrigated	365.9	367.1	184.6	143.4	107.4	1,168.3
	Percent to total area irrigated					
Tubewell/bore	18.1	24.1	11.7	6.6	27.0	18.4
Canal (permanent)	30.2	28.3	23.8	37.7	32.0	29.7
Canal (seasonal)	44.1	38.9	56.3	52.4	35.6	44.6
Pond, well	1.3	3.4	2.6	0.9	0.6	2.0
Others	5.6	3.0	4.2	2.1	4.4	4.0
Mixed	0.8	2.3	1.4	0.3	0.4	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 8.8: NUMBER AND PERCENT OF LAND HOLDINGS WITH ACCESS TO IRRIGATION BY SIZE OF HOLDING, NEPAL, 1991/92 AND 2001/02

Size of Holding	1991/92			2001/02			
	Total land holdings ('000)	Holding with access to irrigation ('000)	Percent of holdings with irrigation	Total land holdings ('000)	Holding with access to irrigation ('000)	Percent of holdings with irrigation	% increase in no. of holdings with access to irrigation
Under 0.1 ha	173.0	40.2	23.2	260.5	77.0	29.5	91.5
0.1 ha and under 0.2 ha	263.8	97.1	36.8	346.1	158.7	45.8	63.4
0.2 ha and under 0.5 ha	729.3	341.8	46.9	972.3	552.6	56.8	61.7
0.5 ha and under 1 ha	711.7	392.2	55.1	915.7	609.1	66.5	55.3
1 ha and under 2 ha	529.5	317.5	60.0	588.6	416.6	70.8	31.2
2 ha and under 3 ha	168.4	103.7	61.6	157.0	112.7	71.8	8.7
3 ha and under 4 ha	59.6	38.1	64.0	51.6	37.0	71.7	-2.9
4 ha and under 5 ha	28.6	19.3	67.5	20.2	14.4	71.2	-25.4
5 ha and under 10 ha	32.0	21.7	67.8	21.6	16.5	76.6	-23.8
10 ha and over	8.2	6.0	73.1	3.8	3.0	80.0	-49.6
Total	2703.9	1,377.5	50.9	3,337.4	1,997.6	59.9	45.0

CHAPTER 9
USE OF INPUTS

In 1981/82, there were only 3.2 percent of rice growers using improved seed but this percentage increased to 24 percent in 1991/92. Between 1991/92 and 2001/02 there was an increase of only 1.1 percent. About 4.8 percent of wheat growers in Nepal used improved seed in 1981/82 and it increased to 30.7 percent in 1991/92. Between 1991/92 and 2001/02 the number of wheat growers using improved seeds did not change much and remained at 30 percent. Some 2.4 percent of maize growers used improved seeds in 1981/82. It increased to 11.9 percent in 1991/92 and further increased to 14.9 percent in 2001/02.

Number of farmers using pesticides has been increasing over the years. Below 1 percent of rice growers used pesticides in 1981/82. The proportion of rice growers using pesticides increased to 13.2 percent in 1991/92 and to 20.4 percent in 2001/02. In the case of wheat crops, use of pesticides has not been increasing as in the case of rice. Approximately one percent of the wheat growers used pesticides in 1981/82. In the span of 20 year (1981/82 – 2001/02), it increased to 8.9 percent, an addition of 7.9 percent only. The percentage of pesticides users among the maize growers has been very low in the country. In the last three censuses of 1981/82, 1991/92 and 2001/02 the percent of pesticides users among maize grower were just 0.9, 2.8 and 4.2 respectively.

Use of chemical fertilizer has been increasing rather rapidly. Only 16 percent of rice growers used chemical fertilizer in 1981/82. This percentage increased to 48.8 percent in 1991/92 and increased further to 64.9 percent in 2001/02. Wheat growers ranked second in the proportion of growers applying chemical fertilizer. There were 52.4 percent of wheat farmers using chemical fertilizer in 1991/92. It increased to 57.7 percent in 2001/02. Number of maize grower using chemical fertilizer has also been increasing. The percentage of chemical fertilizer users among maize growers were 5.1 percent, 22.6 percent and 35.0 percent in 1981/82, 1991/92 and 2001/02 respectively.

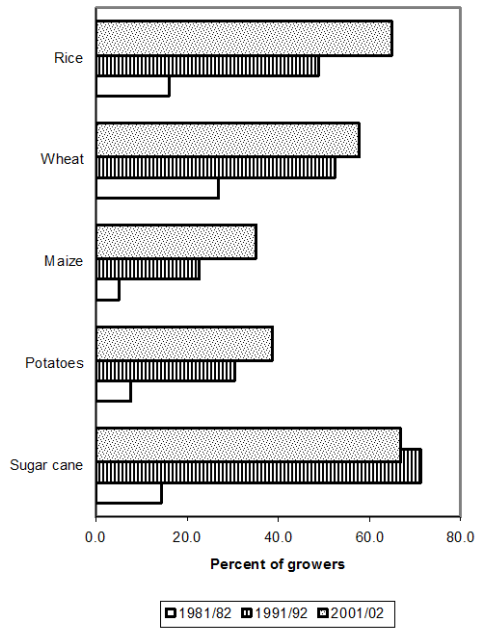
Table 9.0 Summary Statistics

Crop	Holdings with crop (' 000)			Improved seeds (% of crop growers)			Pesticides (% of crop growers)			Chemical fertilizer (% of crop growers)		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
Rice	1,021.7	2,037.5	2,481.6	3.2	24.0	25.1	0.8	13.2	20.4	16.0	48.8	64.9
Wheat	649.5	1,635.8	1,935.1	4.8	30.7	30.0	1.0	5.4	8.9	26.9	52.4	57.7
Maize	838.6	1,872.6	2,166.3	2.4	11.9	14.9	0.9	2.8	4.2	5.1	22.6	35.0
Total land holdings	2,185.7	2,703.9	3,337.4	...	...	...	...	...	...	...	...	...

9.1 Agricultural inputs

Statistics on the agricultural inputs used in the farming operations of agricultural holdings in Nepal are necessary information required to support the developmental efforts of government as well as the private sector in improving the output from agriculture. Agricultural inputs for the purpose of the Census of Agriculture are materials or improved practices that are used or adopted in the cultivation of crops and raising of livestock to increase agricultural production. These include the use of chemical fertilizers, use of improved seeds like high yielding varieties (HYVs), and, the use of pesticides for important crops grown by most holdings in Nepal.

FIGURE 9.1: GROWERS USING CHEMICAL FERTILIZER, NEPAL

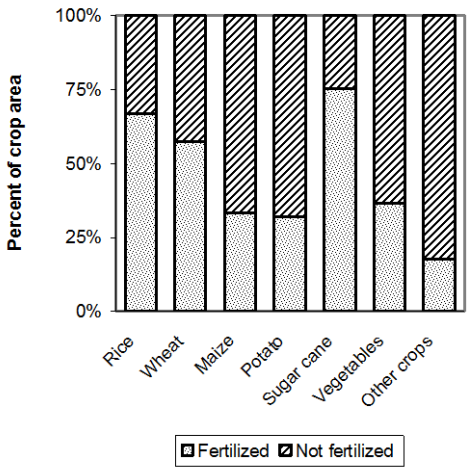


9.2 Growers using chemical fertilizers

There has been an increasing usage of chemical fertilizers in the cultivation of important crops in Nepal since 1981/82.

In 2001/02, sugar cane growers reported the highest percentage (66.7%) of using chemical fertilizers in their sugar cane fields although the number of growers was not as many as those engaged in the culture of rice, maize and wheat. Rice growers ranked second in the usage of chemical fertilizers with 64.9% of them using while wheat growers ranked third in the proportion of growers applying chemical fertilizers (57.7%). It ranked third also in the total number of growers engaged in crop cultivation. Take note that maize ranked second in terms of the total number of growers but only 35% applied fertilizers

FIGURE 9.2: CHEMICAL FERTILIZERS, AREA TREATED, NEPAL, 2001/02



in their maize field in 2001/02. Potato growers ranked 4th in the usage of chemical fertilizers with 38.8% of the total. This percentage was even higher than maize growing.

The levels of percentages in 2001/02 were considerably higher than in 1991/92 and in 1981/82. In the 80's the use of chemical fertilizer was not as yet popular. The highest proportion of fertilizer usage was reported among wheat growers with 26.9% while that of rice growers and sugar cane growers were 16% and 14.3%, respectively. In 1991/92, there was an upsurge in the use of chemical fertilizers on sugar cane with

71.2%. Wheat and rice growers also registered remarkable increases in usage to 52.4% for wheat and 48.8% for rice.

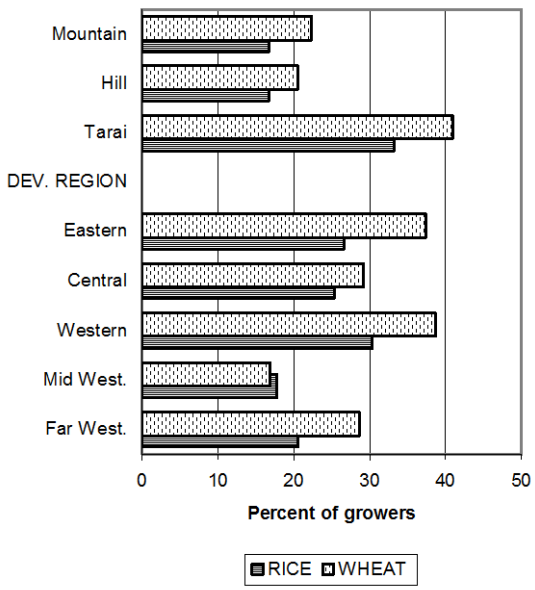
TABLE 9.2 shows the increases in the utilization of chemical fertilizers by type of crop between 1991/92 and 2001/02. It is observed that it is only in sugar cane where there was a decrease in the level of users. But despite the decrease in the number of sugar cane growers using chemical fertilizers, the area fertilized had increased. Notables in the increase in area fertilized were vegetables and maize with 150.5% and 81.6% increases, respectively.

9.3 Growers using improved seeds.

The use of improved seeds has not progressed very much between 1991/92 and 2001/02 although it can be seen from TABLE 9.1 that there was a big improvement in the use of improved seeds between 1981/82 and 1991/92.

In the 80's only 3.2% of the rice growers used improved rice seed varieties but the percentage went up to 24% in 1991/92. However, between 1991/92 and 2001/02, only 1.1 percentage points were added. In fact, for wheat, there was even a decrease by 0.7 percentage point in the proportion of wheat growers using improved wheat seeds as planting materials.

FIGURE 9.3: GROWERS USING IMPROVED SEEDS, 2001/02



There was a significant increase on the use of improved seeds among potato growers from only 1% in 1981/82 to 17.9% in 1991/92 and further increased to 25.9% 2001/02. Maize growers also increased in the adoption of improved seeds from 2.4% in 1981/82 to 11.9% in 1991/92 and increased to 14.9% in 2001/02.

In general, the use of improved seeds to increase production of the major temporary crops is comparatively low in Nepal.

9.4 Growers using pesticides

The use of pesticides by crop growers in the 80's was practically unknown where the highest percentage was reported among wheat growers with only 1% that applied pesticides in their farming operations. Less than 1% among rice, maize, potato and sugar cane growers used pesticides during the same period.

In 1991/92, the proportion of sugar cane growers increased to 23.5% which is quite remarkable and this percentage continued to increase in 2001/02 to 30.9%. In other words, almost one third of sugar cane growers used pesticides in 2001/02 to protect their cane fields from attacks of insects and pests.

Rice growers also increased their usage of pesticides from 0.8% in 1981/82 to 13.2% in 1991/92 and then 20.4% in 2001/02. This means that one out of 5 growers used pesticides in his rice fields.

Potato growers also increased their utilization of pesticides from 0.5% in 1981/82, to 10.7% in 1991/92 to 19.5% in 2001/02.

9.5 Rice

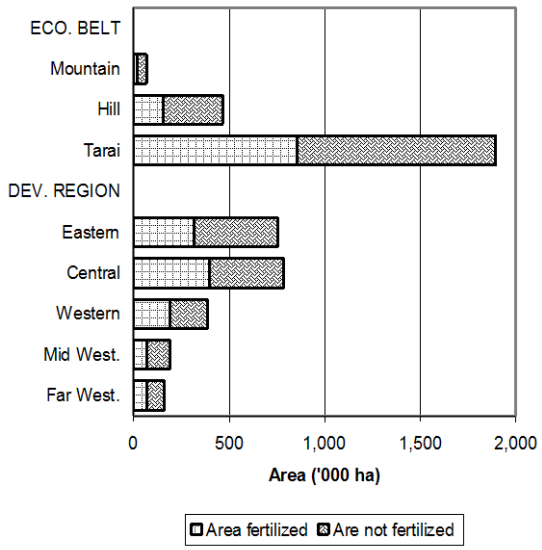
Among cereal crops, rice is still the most important temporary crop being raised by almost two-thirds of the total holdings in the country.

Of the 3.3 million holdings in 2001/02, 2.48 million holdings cultivate rice in an area of .54 million hectares. The rice growers were distributed unevenly in Tarai belt (1.26 million), Hill belt (1.02 million) and Mountain belt (203,300). While more than 1 million holdings planting rice were found in the Hill belt, only 353,000 hectares of rice land were being tilled by them. Of the 1.54 million hectares of rice land, 1.12 million rice land were located in the Tarai belt. This makes Tarai belt rice farmers important in the production of rice.

Among the development regions, the Eastern, Central and Western regions have an aggregate of 1.9 million rice farmers with 1.24 million hectares of rice land comprising 80% of the total rice land in Nepal. These three regions therefore are important to rice growing.

Among the three ecological belts, Tarai belt rice holdings seem to exhibit the highest percentages of usage of improved seeds, pesticides and chemical fertilizers both in 1991/92 and 2001/02. However, in the use of improved seeds, there was a decrease in the percentage of users between 1991/92 and 2001/02 from 36.9% to 33.2%. What was notable was the big increase in the number of rice growers using chemical fertilizers in Tarai from 66.2% in 1991/92 to 82.3% in 2001/02 and the area applied to fertilizer from 52.8% to 76.6% of the total crop area. There was also an increase in the use of pesticides but the level of usage was comparatively low from 20.9% in 1991/92 to 28.5% in 2001/02.

FIGURE 9.4: CHEMICAL FERTILIZERS, RICE AREA TREATED, 2001/02



Among the development regions, the proportion of users of chemical fertilizers among rice growers in Central region was reportedly the highest at 89.1% in 2001/02 from 87.8% in 1991/92. Second in rank in usage was far below at 64.5% in Western region and the third ranking was Eastern region with 61.3%.

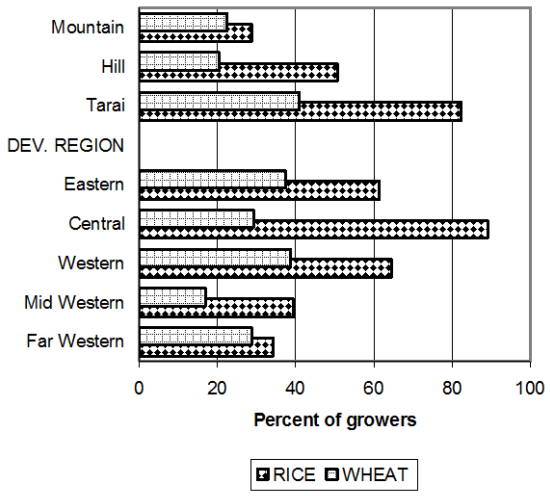
There had been an improvement in the use of improved seeds in four regions except Central region. In 1991/92, Central region reported the highest proportion of improved seeds users at 34.5% but declined to 25.3% in 2001/02. On the other hand, Western region reported the highest percentage of users of improved seeds in 2001/02 at 30.3%.

9.6 Wheat

Growing of wheat in Nepal has progressed slowly in terms of the utilization of inputs that increase production. At the national level, majority (52.4%) of wheat growers used chemical fertilizers in 1991/92. This percentage increased to 57.7% in 2001/02. On the use of pesticides, only 5.4% of the growers used it in 1991/92 and this proportion increased to 8.9% in 2001/02. However, in the use of improved seeds, the proportion of growers decreased from 30.7% in 1991/92 to 30.0% in 2001/02.

By ecological belt, the picture changes. Wheat growers in Tarai and hill belts using chemical fertilizers suddenly reduced in proportion. Tarai belt growers decreased from 78.7% in 1991/92 to only 40.9% in 2001/02 while Hill belt growers decreased from 36.7% to only 20.5% for the same period. While the number of growers decreased proportionally, the area treated with fertilizers increased during the same period. In Tarai belt, the area fertilized in 1991/92 was 69.5% of the total crop area. In 2001/02, the area fertilized increased to 78.2% of the total crop area. The same trend was observed for Hill belt but the increase was not significant, see TABLE 9.4.

FIGURE 9.5: GROWERS USING CHEMICAL FERTILIZER, 2001/02

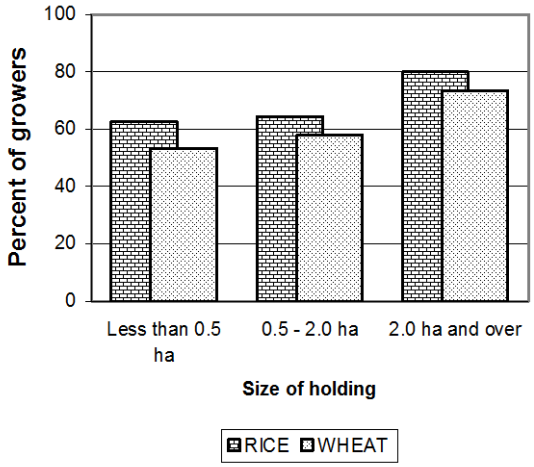


The same pattern in Tarai belt and Hill belt was observed in the utilization of improved seeds where the proportion of wheat growers using improved seeds declined between 1991/92 and 2001/02.

While the use of pesticide was not as prevalent as the chemical fertilizer, the proportions of users have increased conservatively within the ten-year period being observed.

By development regions, four out of five regions reported a decrease in the usage of chemical fertilizers. It was only in Mid-Western region where an increase in the use of fertilizers was observed. However, it might be delightful to know that the areas treated with fertilizers increased in four regions out of five, with the exception of Central region where the area decreased from 79.8% of the total crop area in 1991/92 to 78.2% in 2001/02.

FIGURE 9.6: GROWERS USING CHEMICAL FERTILIZER BY SIZE OF HOLDING, NEPAL, 2001/02



9.7 Maize

Maize is second in rank to rice as temporary crop raised by holdings in Nepal. There were 2.2 million holdings reporting in 2001/02 as cultivating maize in an aggregate area of 769,400 hectares. Most of these holdings (1.46 million) were found in Hill belt with aggregate crop area of 510,200 hectares. Tarai belt maize growers totaled 448,300 with a total crop area of 175,200 hectares while in Mountain belt there were 256,200 maize growers involving 84,000 hectares. The bulk of maize growers in development regions was spread out in Eastern, Central and Western regions in an aggregate area of 608,400 hectares, which is 79.2% of the total area sown to maize.

The application of chemical fertilizers in maize fields was not as prevalent as in the culture of rice. In 1991/92, 22.6% of maize

growers used chemical fertilizers and in 2001/02 the users increased to 35%. The total area fertilized also increased from 18.3% of the total crop area in 1991/92 to 33.2% in 2001/02. It is interesting to observe that the Mountain belt reported the highest proportion of maize growers with 25.1% of the total growers in this area followed by Hill belt with 23.8%. Tarai belt reported the lowest percentage of chemical fertilizer users on maize at 16.9% of the total holdings with maize.

Among development regions, Central region reported an extraordinarily high percentage of fertilizer users on their maize farm compared with the other regions both in 1991/92 and 2001/02. In 1991/92, 61.4% of the maize holdings used fertilizer in Central region compared with only 12.6% for Western region and 11% for Eastern region. In 2001/02, the fertilizer users in Central region increased to 68.6% compared with 29.5% for Western region and 30.2% for Eastern region, see TABLE 9.5

While Tarai belt reported the lowest proportion of fertilizer users among maize growers, it reported the highest proportion of usage of improved seeds with 17.8% compared with only 11.1% for Hill and 6.3% for Mountain belt..

The same trend was observed for users of pesticides where Tarai belt reported the highest percentage at 5.1% followed by Hill belt with 2.5% and 0.6% in Mountain belt in 1991/92. In 2001/02, the percentage of users in Tarai belt increased to 8.8% followed by Mountain belt with 3.5% pesticide users and Hill belt with 2.9%.

Central development region reported the highest percentage of pesticide users among the five development regions at 6.9% followed by Eastern region at 5.4% in 2001/02.

9.8 Other crops

The use of agricultural inputs in the cultivation of other crops in Nepal is not as popular as in the three major temporary crops earlier discussed.

In 1991/92, the percentage of users of chemical fertilizers among potato growers registered at 30.5% and this percentage increased to 38.8% in 2001/02. Tarai belt reported the highest proportion of fertilizer users both in 1991/92n and 2001/02 at 41.5% and 54.4%, respectively compared with only 26% and 31.7% for the same period among potato growers in Hill belt.

Among development regions, Central region reported the highest percentage of users at 60.2% in 1991/92 and increased to 61.6% in 2001/02. It seems that it is this region where improved farm practices are observed by majority of the holdings compared with other regions.

The users of fertilizers among vegetable farmers are comparatively lower than potato growers both in 1991/92 and 2001/02. Tarai belt vegetable growers still reported the highest percentage of users compared with the other belts.

On the use of improved seeds and pesticides, still tarai belt growers reported the highest usage. Users of improved seeds and pesticides among sugar cane growers in Hill and Mountain belts are negligible when compared with those in Tarai belt.

9.9 Comparison of small and large holdings

The use of agricultural inputs in the different holdings according to size category seemed to reveal a pattern for the three major temporary crops. TABLE 9.9 shows that the large holdings reported a higher incidence of usage of the three agricultural inputs than the smaller ones.

On the use of improved seeds, the large holdings reported a usage percentage of 38.8% for rice compared with 21.1% for small holdings; 73.5% for wheat compared with 26.3% for small holdings; and 22.1% for maize compared with 13.1% for maize.

The same pattern was observed on the use of pesticides although the difference was rather big when compared with rice. For large holdings, the use of pesticides registered at 87.9% of the total large holdings compared with only 17.4% for the small holdings.

For wheat growing, the difference was not as great compared with rice but still there is a wide gap, 13.5% for the large holdings against 7.9% among the small holdings. For maize, users of pesticides among large holdings was only 8.4% of the total compared with 3.7% of the total among small holdings.

In the application of chemical fertilizers, the large holdings also reported higher percentages for the three crops but the difference was not as great compared with the first two inputs discussed.

In 2001/02, almost 80% among large holdings reported as having used chemical fertilizers for rice cultivation compared with 62.5% users among small holdings. For wheat, about 74% of the large holdings used fertilizer compared with 53% users among the small holdings.

For maize growing, the difference in the percentage of users of chemical fertilizers among the different sizes of holdings was not very apparent although the large holdings reported a little bit higher percentage (37.1% vs. 34.5%).

TABLE 9.1: HOLDINGS USING DIFFERENT INPUTS FOR SELECTED CROPS, NEPAL, 1981/82, 1991/92 AND 2001/02

Crop	Holdings with crop (' 000)			Improved seeds (% of crop growers)			Pesticides (% of crop growers)			Chemical fertilizer (% of crop growers)		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
Rice	1,021.7	2,037.5	2,481.6	3.2	24.0	25.1	0.8	13.2	20.4	16.0	48.8	64.9
Wheat	649.5	1,635.8	1,935.1	4.8	30.7	30.0	1.0	5.4	8.9	26.9	52.4	57.7
Maize	838.6	1,872.6	2,166.3	2.4	11.9	14.9	0.9	2.8	4.2	5.1	22.6	35.0
Potato	193.2	734.7	857.3	1.0	17.9	25.9	0.5	10.7	19.5	7.7	30.5	38.8
Sugar cane	60.2	82.6	85.1	3.0	31.8	31.4	0.4	23.5	30.9	14.3	71.2	66.7
Vegetables	324.2	763.1	977.5	na	19.2	29.9	na	7.1	16.1	na	18.3	29.5
Other crops	na	2,246.6	1,888.3	na	4.7	6.7	na	1.9	4.5	na	15.5	26.5
Total land holdings	2,185.7	2,703.9	3,337.4	...	...	...	...	...	...	...	...	...

TABLE 9.2: USE OF CHEMICAL FERTILIZERS FOR SELECTED CROPS, NEPAL, 1991/92 AND 2001/02

(In thousand except percent)

Crop	Number of holdings with crop	Holdings using chemical fertilizer	Percent holdings using fertilizer	Area of crop (ha)	Area fertilized (ha)	Percent of crop area fertilized
			1991/92			
Rice	2,037.5	994.5	48.8	1,481.2	683.0	46.1
Wheat	1,635.8	857.4	52.4	633.1	316.3	50.0
Maize	1,872.6	422.8	22.6	768.7	140.5	18.3
Potato	734.7	224.2	30.5	70.5	18.2	25.8
Sugar cane	82.6	58.8	71.2	36.6	30.3	82.7
Vegetables	763.1	139.7	18.3	39.5	8.8	22.3
Other crops	2,246.6	348.9	15.5	1,033.4	130.5	12.6
			2001/02			
Rice	2,481.6	1,611.6	64.9	1,544.6	1,033.1	66.9
Wheat	1,935.1	1,116.8	57.7	793.5	454.2	57.2
Maize	2,166.3	759.2	35.0	769.4	255.1	33.2
Potato	857.3	332.6	38.8	83.9	26.9	32.0
Sugar cane	85.1	56.8	66.7	51.9	39.2	75.5
Vegetables	977.5	288.3	29.5	60.0	22.0	36.7
Other crops	1,888.3	500.9	26.5	972.4	173.6	17.9
			Percent increase 2001/02 vs 1991/92			
Rice	21.8	62.1	33.1	4.3	51.3	45.1
Wheat	18.3	30.3	10.1	25.3	43.6	14.5
Maize	15.7	79.6	55.1	0.1	81.6	81.2
Potato	16.7	48.4	27.2	18.9	47.6	24.2
Sugar cane	3.1	-3.4	-6.3	41.9	29.3	-8.8
Vegetables	28.1	106.3	61.1	51.9	150.5	64.7
Other crops	-15.9	43.6	71.1	-5.9	33.0	41.7

TABLE 9.3: RICE GROWERS, USE OF SELECTED INPUTS IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02

Geographic area	Holdings with rice ('000)	Area of rice sown ('000 ha)	Improved seeds (% growers)	Pesticides (% growers)	Chemical fertilizers	
					(% growers)	(% crop area)
			1991/92			
NEPAL	2,037.5	1,481.2	24.0	13.2	48.8	46.1
ECOLOGICAL BELTS						
Mountain	179.1	49.3	5.9	2.0	26.3	25.1
Hill	905.4	335.2	14.0	7.4	35.0	27.3
Tarai	953.0	1,096.8	36.9	20.9	66.2	52.8
DEVELOPMENT REGIONS						
Eastern	468.4	489.0	23.9	11.2	33.4	27.3
Central	655.2	449.3	34.5	18.9	87.8	78.8
Western	439.1	290.6	18.1	16.5	45.2	51.5
Mid Western	248.9	131.0	17.0	6.2	16.6	22.0
Far Western	225.8	121.3	13.0	2.4	10.1	13.8
			2001/02			
NEPAL	2,481.6	1,544.6	25.1	20.4	64.9	66.9
ECOLOGICAL BELTS						
Mountain	203.3	74.2	16.7	6.0	28.6	27.4
Hill	1,015.6	353.0	16.7	13.1	50.6	44.5
Tarai	1,262.7	1,117.4	33.2	28.5	82.3	76.6
DEVELOPMENT REGIONS						
Eastern	552.0	500.5	26.6	15.6	61.3	62.6
Central	803.3	471.0	25.3	31.9	89.1	84.1
Western	511.4	270.6	30.3	22.5	64.5	69.0
Mid Western	322.4	164.1	17.8	9.2	39.5	41.2
Far Western	292.6	138.4	20.6	6.4	34.3	50.0

TABLE 9.4: WHEAT GROWERS, USE OF SELECTED INPUTS - ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02

Geographic area	Holdings with wheat ('000)	Area of wheat sown ('000 ha)	Improved seeds (% growers)	Pesticides (% growers)	Chemical fertilizers	
					(% growers)	(% crop area)
			1991/92			
NEPAL	1,635.8	633.1	30.7	5.4	52.4	50.0
ECOLOGICAL BELTS						
Mountain	184.5	48.7	9.3	1.0	17.2	14.0
Hill	755.0	223.5	22.2	3.5	36.7	26.3
Tarai	696.3	360.8	45.7	8.7	78.7	69.5
DEVELOPMENT REGIONS						
Eastern	283.8	118.4	41.8	7.8	59.0	57.0
Central	494.5	183.1	41.2	8.2	86.9	79.8
Western	320.4	114.9	29.1	5.4	56.1	55.0
Mid Western	300.8	122.6	16.7	1.9	15.0	17.3
Far Western	236.3	94.0	15.6	1.3	15.1	19.3
			2001/02			
NEPAL	1,935.1	793.5	30.0	8.9	57.7	57.2
ECOLOGICAL BELTS						
Mountain	194.7	65.6	22.4	3.9	22.4	13.1
Hill	856.5	256.7	20.5	4.3	20.5	30.0
Tarai	883.9	471.2	40.9	14.4	40.9	78.2
DEVELOPMENT REGIONS						
Eastern	342.8	177.5	37.4	11.0	37.4	73.5
Central	572.1	217.8	29.2	15.0	29.2	78.2
Western	357.1	116.0	38.7	5.9	38.7	60.8
Mid Western	360.8	148.7	16.8	3.1	16.8	21.8
Far Western	302.2	133.6	28.6	5.4	28.6	37.9

TABLE 9.5: MAIZE GROWERS, USE OF SELECTED INPUTS IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02

Geographic area	Holdings with maize ('000)	Area of maize sown ('000 ha)	Improved seeds (% growers)	Pesticides (% growers)	Chemical fertilizers	
					(% growers)	(% crop area)
			1991/92			
NEPAL	1,872.6	768.7	11.9	2.8	22.6	18.3
ECOLOGICAL BELTS						
Mountain	228.3	69.3	6.3	0.6	25.2	22.0
Hill	1,263.5	515.3	11.1	2.5	23.8	18.9
Tarai	380.8	184.1	17.8	5.1	16.9	15.1
DEVELOPMENT REGIONS						
Eastern	401.7	224.2	6.8	2.0	11.0	9.9
Central	506.5	216.7	21.1	5.4	61.4	46.6
Western	448.7	167.5	12.1	2.7	12.6	8.6
Mid Western	312.3	113.7	6.1	0.8	2.1	1.6
Far Western	203.4	46.6	7.0	0.9	2.1	2.2
			2001/02			
NEPAL	2,166.3	769.4	14.9	4.2	35.0	33.2
ECOLOGICAL BELTS						
Mountain	256.2	84.0	15.4	3.5	28.7	29.9
Hill	1,461.8	510.2	13.3	2.9	36.4	34.2
Tarai	448.3	175.3	20.0	8.8	34.2	31.6
DEVELOPMENT REGIONS						
Eastern	480.9	242.3	14.2	5.4	30.2	27.5
Central	586.7	227.0	19.4	6.9	68.6	62.9
Western	516.2	150.7	16.0	2.8	29.5	22.6
Mid Western	372.8	112.1	9.1	2.0	9.2	7.2
Far Western	209.7	37.3	11.7	1.6	11.9	9.3

TABLE 9.6: POTATO GROWERS, USE OF SELECTED INPUTS IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02

Geographic area	Holdings with potato ('000)	Area of potato sown ('000 ha)	Improved seeds (% growers)	Pesticides (% growers)	Chemical fertilizers	
					(% growers)	(% crop area)
			1991/92			
NEPAL	734.7	70.5	17.9	10.7	30.5	25.8
ECOLOGICAL BELTS						
Mountain	101.8	14.6	4.4	1.0	8.9	5.7
Hill	307.4	34.7	12.4	7.7	26.0	21.7
Tarai	325.5	21.2	27.4	16.7	41.5	46.5
DEVELOPMENT REGIONS						
Eastern	225.2	29.3	15.5	6.9	22.8	16.1
Central	187.1	21.2	27.2	20.6	60.2	50.0
Western	156.4	11.0	18.1	13.3	33.9	22.0
Mid Western	100.1	5.3	12.3	3.5	5.7	7.7
Far Western	65.9	3.6	8.0	0.9	2.3	1.6
			2001/02			
NEPAL	857.3	83.9	25.9	19.5	38.8	32.0
ECOLOGICAL BELTS						
Mountain	112.4	19.0	22.0	7.5	14.7	15.4
Hill	392.5	41.5	20.9	14.9	31.7	26.7
Tarai	352.3	23.4	32.7	28.4	54.4	55.1
DEVELOPMENT REGIONS						
Eastern	249.3	30.8	19.3	20.8	37.5	23.5
Central	183.7	25.6	31.6	33.1	61.6	54.6
Western	202.5	12.1	29.8	17.7	45.7	33.1
Mid Western	128.1	9.9	27.4	9.6	15.6	10.5
Far Western	93.7	5.5	22.2	6.5	14.4	11.5

TABLE 9.7: SUGAR CANE GROWERS, USE OF SELECTED INPUTS IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02

Geographic area	Holdings with sugar cane ('000)	Area of sugar cane sown ('000 ha)	Improved seeds (% growers)	Pesticides (% growers)	Chemical fertilizers	
					(% growers)	(% crop area)
			1991/92			
NEPAL	82.6	36.6	31.8	23.5	71.2	82.7
ECOLOGICAL BELTS						
Mountain	2.1	0.1	1.4	3.2	5.1	13.4
Hill	13.1	1.0	0.5	1.6	6.1	10.1
Tarai	67.4	35.5	38.9	28.4	85.9	85.0
DEVELOPMENT REGIONS						
Eastern	3.8	2.1	29.8	15.7	41.0	61.8
Central	40.9	22.2	39.7	25.3	88.6	85.2
Western	26.6	10.9	32.7	30.7	76.1	88.3
Mid Western	1.2	-	2.8	4.2	1.4	-
Far Western	10.1	1.4	2.2	2.8	8.2	32.4
			2001/02			
NEPAL	85.1	51.9	31.4	30.9	66.7	75.5
ECOLOGICAL BELTS						
Mountain	1.8	0.2	3.6	4.4	2.3	2.8
Hill	10.8	0.7	1.9	3.1	8.2	14.6
Tarai	72.5	51.0	36.5	35.7	77.1	76.6
DEVELOPMENT REGIONS						
Eastern	9.5	5.2	8.2	11.8	56.8	60.6
Central	43.4	35.0	41.2	44.6	82.0	80.7
Western	20.0	8.1	32.3	22.9	66.2	72.1
Mid Western	4.1	0.6	7.2	6.3	6.0	40.5
Far Western	8.1	3.1	15.8	12.3	29.0	56.4

TABLE 9.8: VEGETABLE GROWERS, USE OF SELECTED INPUTS IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02

Geographic area	Holdings with vegetable ('000)	Area of vegetable sown ('000 ha)	Improved seeds (% growers)	Pesticides (% growers)	Chemical fertilizers	
					(% growers)	(% crop area)
			1991/92			
NEPAL	763.1	39.5	19.2	7.1	18.3	22.3
ECOLOGICAL BELTS						
Mountain	88.6	3.1	3.4	1.0	4.8	3.5
Hill	356.9	14.0	14.4	4.3	17.1	16.4
Tarai	317.5	22.3	29.0	12.0	23.5	28.6
DEVELOPMENT REGIONS						
Eastern	221.3	13.6	15.6	4.5	12.9	15.6
Central	223.2	12.9	21.3	9.7	35.4	41.2
Western	137.0	5.2	23.8	9.9	16.6	17.9
Mid Western	114.2	4.3	15.6	5.0	5.4	7.7
Far Western	67.3	3.5	20.6	4.8	4.8	2.9
			2001/02			
NEPAL	977.5	60.0	29.9	2.3	29.5	36.7
ECOLOGICAL BELTS						
Mountain	71.6	3.7	26.4	0.4	7.8	7.0
Hill	518.9	26.1	27.6	1.7	28.0	33.4
Tarai	387.0	30.2	33.8	3.4	35.5	43.3
DEVELOPMENT REGIONS						
Eastern	208.9	14.4	24.3	2.4	26.5	34.2
Central	238.0	19.1	29.1	4.6	51.4	57.6
Western	232.1	9.9	35.2	1.4	27.9	34.1
Mid Western	165.8	10.4	24.6	0.9	12.9	13.9
Far Western	132.7	6.3	37.6	1.0	18.5	20.8

TABLE 9.9: RICE, WHEAT AND MAIZE GROWERS, USE OF SELECTED INPUTS BY SIZE OF HOLDING, NEPAL, 2001/02

Size of holding	Holdings with crop ('000)	Area of crop sown ('000 ha)	Improved seeds (% growers)	Pesticides (% growers)	Chemical fertilizers	
					(% growers)	(% crop area)
			Rice			
Less than 0.5 ha	1,032.6	201.0	21.1	17.4	62.5	62.3
0.5 - 2.0 ha	1,236.1	824.4	26.0	20.8	64.4	63.0
2.0 ha and over	212.7	519.2	38.8	87.9	79.9	74.8
Total	2,481.3	1,544.6	25.1	20.4	64.9	66.9
			Wheat			
Less than 0.5 ha	751.5	123.6	26.3	7.9	53.4	8.3
0.5 - 2.0 ha	988.8	430.1	30.7	8.7	57.9	23.3
2.0 ha and over	194.7	239.8	73.5	13.5	73.5	82.6
Total	1,935.1	793.5	30.0	8.9	57.7	57.2
			Maize			
Less than 0.5 ha	1,007.8	159.1	13.1	3.7	34.5	33.2
0.5 - 2.0 ha	1,038.7	480.4	15.9	4.3	35.3	33.6
2.0 ha and over	119.6	129.9	22.1	8.4	37.1	31.3
Total	2,166.0	769.4	14.9	4.2	35.0	33.2

CHAPTER 10
AGRICULTURAL EQUIPMENT

Mechanization of agriculture in Nepal is at very low level. There were about 315.1 thousand holdings using the most common agricultural equipment, iron plough in 1991/92. This number increased to 870.3 thousand holdings in 2001/02.

The use of tractors has been increasing slowly. From 1.2 percent of the total holdings using tractors in 1991/92 it increased to 8.2 percent in 2001/02. Thresher occupies a very important place among equipment used in farming operation. The use of thresher in farming operation has also been increasing. From 3.2 percent of the total holdings using it in 1991/92 it increased to 7.5 percent in 2001/02. Pumping set, which is also very important agricultural equipment for the purpose of irrigation, has increased from 3 percent holdings using it in 1991/92 to 6.3 percent holdings in 2001/02. Though farm mechanization in Nepal is still at incipient stage, there are indications of improvement. Use of equipment such as power tillers, sprayers, rower pumps is on the rise. However, the number of animal drawn carts has stagnated over the decade.

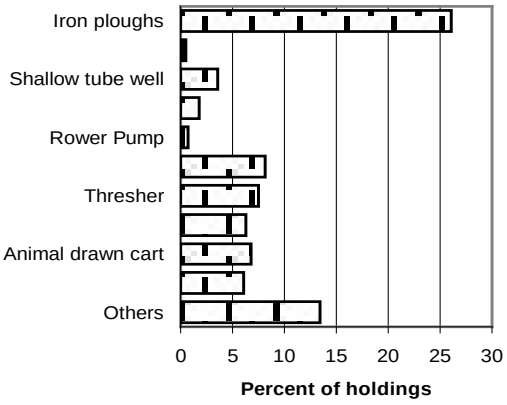
Table 10.0 Summary Statistics

Types of equipment	1991/92		2001/02	
	Holdings using equipment ('000)	Number of Items ('000)	Holdings using equipment ('000)	Number of Items ('000)
Iron ploughs	315.1	354.5	870.3	890.2
Power tillers	5.6	1.6	15.6	11.8
Shallow tube well	50.9	48.2	119.7	109.5
Deep Tube Well	20.1	15.7	58.6	51.5
Rower Pump	3.5	3.8	22.7	21.8
Tractor	35.2	5.5	272.9	150.6
Thresher	85.6	19.9	249.5	129.1
Pumping set	81.3	41.3	210.4	146.1
Animal drawn cart	204.6	198.1	226.4	199.1
Sprayer	50.2	23.4	203.0	145.9
Others	296.5	878.4	449.0	1,072.7

10.1 Agricultural equipment

For the purpose of the Agriculture Census, agricultural equipment refers to machinery and equipment used on the holding, wholly or partly for agricultural production. Machinery and equipment in usable condition whether owned or not owned but used on the holding were included. Excluded were machinery and equipment used exclusively for non-agricultural purposes.

FIGURE 10.1: USE OF AGRICULTURAL EQUIPMENT, NEPAL, 2001/02



10.2 Type of equipment

Capital formation in agriculture in Nepal is rather limited, although there has been some improvement in the number and kind of equipment available and used on the land holding between 1991/92 and 2001/02. The number of equipment by type is shown in TABLE 10.5.

The iron plough was the most popular equipment available on the holding both in 1991/92 and 2001/02. In 1991/92 only 315,100 or 11.7% of the total holdings used iron ploughs in their farming operations. The number of holdings using this equipment more than double in 2001/02 with 870,300 holdings reporting. This number represented 26.1% of the total holdings in the country. While the number of users increased within the ten-year period, the ownership of the equipment has declined from 98.8% in 1991/92 to 90.4% in 2001/02.

There was also an increase in the use of tractors, from only 35,200 holdings that used tractor in 1991/92 (1.3% of the total holdings) to 272,900 holdings in 2001/02 that was 8.2% of the total. There was also a decrease in the proportion of holdings that owned the tractor, from 85.5% in 1991/92 to only 18.5% in 2001/02. The decrease in the proportion of owners of tractors is not surprising considering the cost of acquisition. While there was a decrease proportionally, there was actually an increase in the number available from 4,700 tractors owned in 1991/92 to 27,900 tractors owned in 2001/02. Investment in the purchase of tractor has greatly increased the capital formation in agriculture.

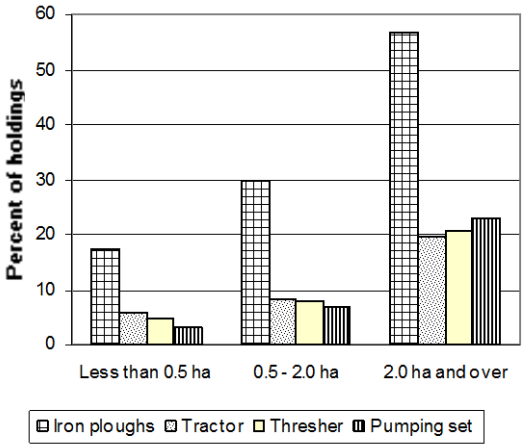
Another type of equipment which is important in farming operations that was observed to have significant increase is thresher, from 85,600 holdings reporting as having used it in 1991/92 to 249,500 holdings in 2001/02. This number is 7.5% of the total holdings in the country. Like the tractor, ownership also has gone down from 96.5% in 1991/92 to only 44.2% in 2001/02 but the actual number of threshers owned had increased from 19,200 to 57,100.

Another important piece of equipment that increased in usage proportionally is the pumping set equipment, from 3% of the holdings using this equipment in 1991/92 to 6,3% of holdings in 2001/02. Ownership of the equipment proportionally decreased but the number available actually increased from 40,000 sets in 1991/92 to 93,400 sets in 2001/.02.

While the proportion of ownership of agricultural equipment may have decreased, in general, the accessibility and availability of these machinery and equipment to more holdings have been noted. Farm

mechanization of holdings in Nepal is still in its infant stage but there are indications of improvement during the ten-year period observed.

FIGURE 10.2: USE OF AGRICULTURAL EQUIPMENT BY SIZE OF HOLDING, NEPAL, 2001/02



10.3 Geographical distribution of equipment

TABLE 10.3 shows the distribution of equipment by ecological belts and TABLE 10.4 shows the distribution by development regions.

Of the 870.3 holdings that reported the use of iron ploughs in 2001/02, 810.3 holdings or 93.1% were found in Tarai belt. Among, holdings within Tarai belt, 55.5% reported of having used iron ploughs compared with only 1.8% within Mountain belt and 3.5% within Hill belt.

Furthermore, the use of tractors, threshers and pumping set equipment, Tarai belt holdings had higher incidence of usage compared to the holdings in Hill and Mountain belts.

Among development regions, Eastern region reported the highest proportion of holdings using iron ploughs with 40.3% compared with 27.9% in Far-Western region, 23.4% in Central region, 19.0% in Western region and 17.3% in Mid-Western region. The use of tractor and thresher, however, was observed to be highest in Central region although all regions have reported the use of the equipment.

Proportionally, Far-Western region holdings reported the highest usage of pumping set at 8.3% compared with 7.8% among those in Central region and 6.3% in Eastern region.

10.4 Comparisons of small and large holdings

Proportionally, the large holdings have higher percentage of usage of the different machinery and equipment used in their agricultural operation, see TABLE 10.7

It is significant to note that whatever pieces of equipment used in the large holdings in 2001/02 were also used in the small holdings, except that the available supply was limited in scale. For instance, tractors were also used in small holdings but only 6% of the total small holdings had access to tractors compared with 19.7% of holdings among the large holdings. The use of thresher was reported by 4.9% among small holdings while the large holdings reported 20.8% as having used thresher. This situation holds true for all the listed equipment found in TABLE 10.7, including animal-drawn cart.

TABLE 10.1: USE OF AGRICULTURAL EQUIPMENT OF LAND HOLDINGS BY TYPE, NEPAL, 1991/92 AND 2001/02

Type of equipment	1991/92			2001/02		
	Holdings using equipment		Number of items	Holdings using equipment		Number of items
	No. ('000)	% to total	(‘000)	No. ('000)	% to total	('000)
Total land holdings	2703.9	100.0	…	3,337.4	100.0	…
Iron ploughs	315.1	11.7	354.5	870.3	26.1	890.2
Power tillers	5.6	0.2	1.6	15.6	0.5	11.8
Shallow tube well	50.9	1.9	48.2	119.7	3.6	109.5
Deep Tube Well	20.1	0.7	15.7	58.6	1.8	51.5
Rower Pump	3.5	0.1	3.8	22.7	0.7	21.8
Tractor	35.2	1.3	5.5	272.9	8.2	150.6
Thresher	85.6	3.2	19.9	249.5	7.5	129.1
Pumping set	81.3	3.0	41.3	210.4	6.3	146.1
Animal drawn cart	204.6	7.6	198.1	226.4	6.8	199.1
Sprayer	50.2	1.9	23.4	203.0	6.1	145.9
Others	296.5	11.0	878.4	449.0	13.5	1,072.7

NOTE: Use of equipment refers to use during the census year. Number of items is the number of equipment on the holding at the time of the census.

TABLE 10.2: SOURCE OF EQUIPMENT USED BY LAND HOLDINGS, NEPAL, 1991/92 AND 2001/02

Type of equipment	Number of equipment by source ('000)					
	Owned by holding	Not owned by holding	Total	Owned by holding	Not owned by holding	Total
	1991/92			2001/02		
Iron ploughs	350.1	4.3	354.5	804.8	85.4	890.2
Power tillers	1.0	0.6	1.6	8.9	3.0	11.8
Shallow tube well	46.6	1.6	48.2	88.4	21.1	109.5
Deep Tube Well	14.6	1.2	15.7	40.8	10.7	51.5
Rower Pump	3.3	0.5	3.8	19.9	1.9	21.8
Tractor	4.7	0.8	5.5	27.9	122.7	150.6
Thresher	19.2	0.8	19.9	57.1	72.0	129.1
Pumping set	40.0	1.3	41.3	93.4	52.7	146.1
Animal drawn cart	194.1	4.0	198.1	180.3	18.8	199.1
Sprayer	22.1	1.3	23.4	93.8	52.1	145.9
Others	872.0	6.3	878.4	1,041.6	31.1	1,072.7
			Percent to total			
Iron ploughs	98.8	1.2	100.0	90.4	9.6	100.0
Power tillers	62.5	37.5	100.0	74.9	25.1	100.0
Shallow tube well	96.7	3.3	100.0	80.7	19.3	100.0
Deep Tube Well	93.0	7.6	100.0	79.2	20.8	100.0
Rower Pump	86.8	13.2	100.0	91.2	8.8	100.0
Tractor	85.5	14.5	100.0	18.5	81.5	100.0
Thresher	96.5	4.0	100.0	44.2	55.8	100.0
Pumping set	96.9	3.1	100.0	63.9	36.1	100.0
Animal drawn cart	98.0	2.0	100.0	90.6	9.4	100.0
Sprayer	94.4	5.6	100.0	64.3	35.7	100.0
Others	99.3	0.7	100.0	97.1	2.9	100.0

TABLE 10.3: NUMBER AND PERCENT OF LAND HOLDINGS USING AGRICULTURAL EQUIPMENT BY TYPE OF EQUIPMENT USED AND BY ECOLOGICAL BELT, 2001/02

Type of equipment	Ecological belt			Nepal
	Mountain	Hill	Tarai	
	Number of holdings ('000)			
Iron ploughs	5.2	54.8	810.3	870.3
Power tillers	0.1	7.9	7.6	15.6
Shallow tube well	0.0	4.0	115.6	119.7
Deep Tube Well	0.0	0.8	57.8	58.6
Rower Pump	0.1	1.6	21.0	22.7
Tractor	0.1	9.6	263.2	272.9
Thresher	0.2	33.8	215.5	249.5
Pumping set	0.2	6.7	203.6	210.4
Animal drawn cart	0.2	5.3	220.9	226.4
Sprayer	3.8	65.4	133.9	203.0
Others	25.4	125.3	298.2	449.0
Total land holdings	297.2	1,581.4	1,458.8	3,337.4
	Percent to total land holdings			
Iron ploughs	1.8	3.5	55.5	26.1
Power tillers	0.0	0.5	0.5	0.5
Shallow tube well	0.0	0.3	7.9	3.6
Deep Tube Well	0.0	0.0	4.0	1.8
Rower Pump	0.0	0.1	1.4	0.7
Tractor	0.0	0.6	18.0	8.2
Thresher	0.1	2.1	14.8	7.5
Pumping set	0.1	0.4	14.0	6.3
Animal drawn cart	0.1	0.3	15.1	6.8
Sprayer	1.3	4.1	9.2	6.1
Others	8.6	7.9	20.4	13.5
Total (Percent)	100.0	100.0	100.0	100.0

TABLE 10.4: NUMBER AND PERCENT OF LAND HOLDINGS USING AGRICULTURAL EQUIPMENT BY TYPE OF EQUIPMENT USED AND BY DEVELOPMENT REGION, 2001/02

Type of equipment	Ecological belt					Nepal
	Eastern	Central	Western	Mid Western	Far Western	
			Number of holdings ('000)			
Iron ploughs	321.9	239.9	135.1	80.9	92.5	870.3
Power tillers	0.9	12.4	1.7	0.3	0.3	15.6
Shallow tube well	57.6	31.4	14.4	2.0	14.2	119.7
Deep Tube Well	30.3	17.6	5.7	4.3	0.7	58.6
Rower Pump	3.1	8.0	1.1	1.8	8.7	22.7
Tractor	37.6	151.5	61.4	7.1	15.3	272.9
Thresher	49.4	121.6	51.7	8.5	18.3	249.5
Pumping set	50.4	79.9	45.2	7.3	27.5	210.4
Animal drawn cart	71.2	64.9	26.1	23.9	40.3	226.4
Sprayer	42.5	96.9	40.8	17.6	5.2	203.0
Others	89.5	125.3	131.0	64.0	39.3	449.0
Total land holdings	799.7	1,026.9	711.7	467.4	331.7	3,337.4
			Percent to total land holdings			
Iron ploughs	40.3	23.4	19.0	17.3	27.9	26.1
Power tillers	0.1	1.2	0.2	0.1	0.1	0.5
Shallow tube well	7.2	3.1	2.0	0.4	4.3	3.6
Deep Tube Well	3.8	1.7	0.8	0.9	0.2	1.8
Rower Pump	0.4	0.8	0.2	0.4	2.6	0.7
Tractor	4.7	14.8	8.6	1.5	4.6	8.2
Thresher	6.2	11.8	7.3	1.8	5.5	7.5
Pumping set	6.3	7.8	6.4	1.6	8.3	6.3
Animal drawn cart	8.9	6.3	3.7	5.1	12.1	6.8
Sprayer	5.3	9.4	5.7	3.8	1.6	6.1
Others	11.2	12.2	18.4	13.7	11.8	13.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 10.5: NUMBER OF EQUIPMENT BY TYPE AND BY ECOLOGICAL BELT, NEPAL, 2001/02

(In thousand)

Type of equipment	Ecological belt			Nepal
	Mountain	Hill	Tarai	
Iron ploughs	5.7	50.0	834.5	890.2
Power tillers	0.7	2.4	8.7	11.8
Shallow tube well	0.6	5.1	103.7	109.5
Deep Tube Well	0.7	2.1	48.8	51.5
Rower Pump	0.5	2.2	19.1	21.8
Tractor	0.2	6.5	144.0	150.6
Thresher	0.4	17.6	111.2	129.1
Pumping set	0.4	6.7	139.0	146.1
Animal drawn cart	0.5	7.3	191.3	199.1
Sprayer	3.8	59.9	82.2	145.9
Others	65.9	342.1	664.8	1,072.7

TABLE 10.6: NUMBER OF EQUIPMENT ITEMS BY TYPE AND BY DEVELOPMENT REGION, NEPAL, 2001/02

(In thousand)

Type of equipment	Development Region					Nepal
	Eastern	Central	Western	Mid Western	Far Western	
Iron ploughs	336.4	209.9	140.1	104.0	99.8	890.2
Power tillers	1.7	6.7	1.9	1.0	0.6	11.8
Shallow tube well	53.2	25.3	15.3	3.6	12.1	109.5
Deep Tube Well	29.2	11.7	4.3	5.4	0.9	51.5
Rower Pump	3.7	6.2	1.0	2.2	8.8	21.8
Tractor	19.9	54.0	67.2	6.4	3.1	150.6
Thresher	27.4	49.6	38.6	8.9	4.6	129.1
Pumping set	37.5	42.4	34.6	7.6	24.0	146.1
Animal drawn cart	64.7	46.8	24.1	24.5	39.0	199.1
Sprayer	32.3	56.2	34.4	19.4	3.6	145.9
Others	251.9	346.6	269.0	124.4	80.7	1,072.7

TABLE 10.7: NUMBER AND PERCENT OF LAND HOLDINGS USING AGRICULTURAL EQUIPMENT BY TYPE OF EQUIPMENT USED AND SIZE OF HOLDING, NEPAL, 2001/02

Type of equipment	Size of holding			
	Less than 0.5 ha	0.5 - 2.0 ha	2.0 ha and over	Nepal
		Number of holdings ('000)		
Iron ploughs	276.3	449.4	144.6	870.3
Power tillers	7.1	5.8	2.7	15.6
Shallow tube well	31.2	58.0	30.6	119.7
Deep Tube Well	18.0	26.3	14.3	58.6
Rower Pump	8.5	10.1	4.2	22.7
Tractor	94.4	128.5	50.0	272.9
Thresher	77.4	119.0	53.0	249.5
Pumping set	49.1	102.7	58.6	210.4
Animal drawn cart	30.3	118.0	78.1	226.4
Sprayer	59.2	106.1	37.7	203.0
Others	189.2	209.8	50.0	449.0
Total land holdings	1,578.9	1,504.3	254.2	3,337.4
		Percent to total land holdings		
Iron ploughs	17.5	29.9	56.9	26.1
Power tillers	0.4	0.4	1.1	0.5
Shallow tube well	2.0	3.9	12.0	3.6
Deep Tube Well	1.1	1.7	5.6	1.8
Rower Pump	0.5	0.7	1.7	0.7
Tractor	6.0	8.5	19.7	8.2
Thresher	4.9	7.9	20.8	7.5
Pumping set	3.1	6.8	23.0	6.3
Animal drawn cart	1.9	7.8	30.7	6.8
Sprayer	3.7	7.1	14.8	6.1
Others	12.0	13.9	19.7	13.5
Total	100.0	100.0	100.0	100.0

CHAPTER 11
LIVESTOCK AND POULTRY

The number of livestock and poultry in the country has been increasing with the exception of cattle and sheep. The estimated number of livestock and poultry in the 2001/02 census of agriculture were: cattle 7215.2 thousand, chauri 95.4 thousand, buffaloes 3477.7 thousand, goats 6932.9 thousand, sheep 471.2 thousand, pigs 632.6 thousand, chicken 17631.3 thousand and ducks 393.1 thousand.

There was a decline of about 2 percent in the cattle population between 1991/92 and 2001/02. The buffalo population increased by 11.6 percent during the same period. Likewise, goat and pig population also increased by 25.7 percent and 27.6 percent respectively during that period. Sheep population had declined by 11 percent. Chicken and duck number have also increased by 43 percent and 40.2 percent respectively over the period of 1991/92 and 2001/02. The average number of cattle, chauri, buffaloes, goats, sheep, pig, chicken and ducks per holdings were 3.4, 6.7, 4.1, 4.0, 1.9, 11 and 3.5 respectively in 2001/02 agricultural census.

About 50.4 percent of the total female cattle in Nepal were in milk and 59.8 percent of the total female buffaloes were reported to be in milk in 2001/02 census.

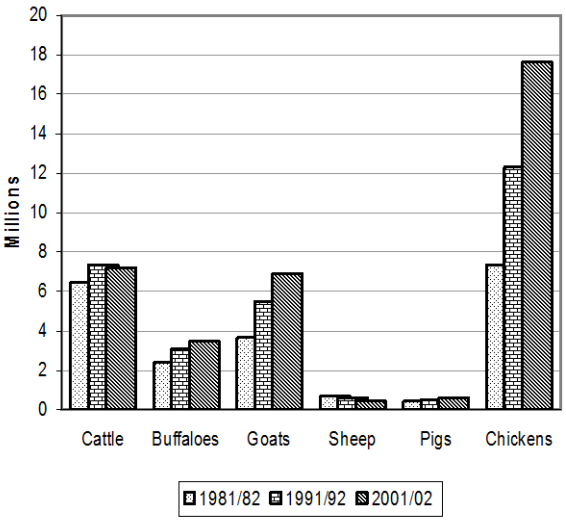
Table 11.0 Summary Statistics

Livestock Type	Holdings ('000)			Livestock ('000)		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
Cattle	1,261.9	2,067.1	2,297.4	6,501.6	7,359.3	7,215.2
Chauri	6.9	9.0	14.2	55.5	58.6	95.4
Buffaloes	778.6	1,307.8	1,586.8	2,379.7	3,116.3	3,477.7
Goats	787.0	1,382.8	1,686.4	3,643.7	5,515.5	6,932.9
Sheep	99.9	92.7	67.7	677.1	602.8	471.2
Pigs	164.1	267.5	327.8	433.6	495.8	632.6
Chickens	716.9	1,400.4	1,594.4	7,368.6	12,333.1	17,631.3
Ducks	37.2	92.6	110.1	142.3	280.3	393.1

11.1 Livestock population

Livestock population in its generic sense includes all animals and birds found on the holding on the day of enumeration. The agriculture census operation was undertaken from January to June 2002. The reference date of the livestock and poultry population, therefore, refers to any day during this period when the enumeration took place.

FIGURE 11.1: LIVESTOCK NUMBERS, NEPAL, 1981/82, 1991/92 AND 2001/02



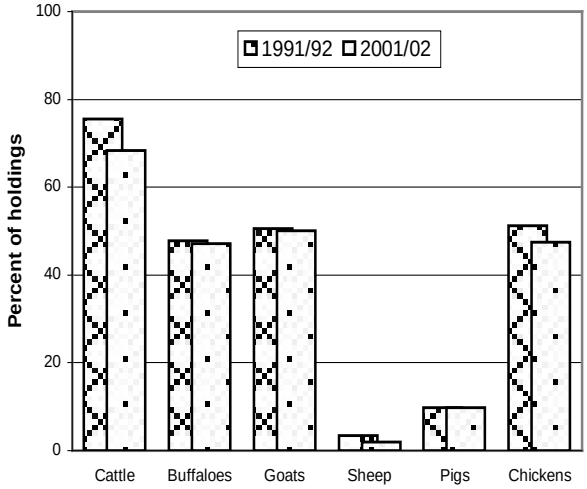
The large livestock included in the census of agriculture were cattle, chaunri, buffaloes, horses, and mules/asses while the small livestock included goats, sheep, pigs, rabbits and other animals. Rabbits were not reported as a separate animal in the 1991/92 census of agriculture but because of its growing importance, a separate count was done in the latest census.

For poultry, three types were reported separately. These are chicken, ducks and pigeons.

11.2 Holdings with livestock and poultry

About 68% of all holdings in 2001/02 reported the presence of cattle in their holding with a total count of 7.215 million heads, an average number of 3.14 cattle per holding. There was, however, a decrease of 2% in the cattle population between 1991/92 and 2001/02 and a corresponding decrease in the average number of cattle per holding.

FIGURE 11.2: HOLDINGS WITH LIVESTOCK, NEPAL, 1991/92 AND 2001/02



The average cattle per holding in 1991/92 was 3.54 heads, a decrease of 11.3% over 2001/02 average.

Among small livestock, goat was the most common animal raised in 1.69 million holdings with a total head count of 6.9 million in 2001/02. This number of goats raised in 2001/02 was 25.7% more than the 1991/92 count. In fact the big increase in the number of goats occurred during 1981/82 and 1991/92, which was double at 51.4%. This increase, however, may have affected the raising of sheep considering that the sheep population had been decreasing during the last 20 years, from 677,100 in 1981/82 to 602,800 in 1991/92 (11% decrease) and further down to

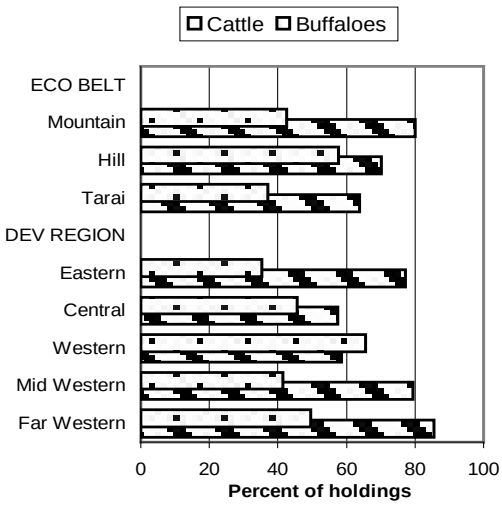
471,200 in 2001/02, a decrease of 21.6% between 1991/92 and 2001/02.

For poultry, there were 1.59 million holdings found to be raising chicken with a total chicken population of 17.6 million in 2001/02. There was an increase in the head count by 43% over 1991/92 figure. The average number of heads of chicken per reporting holding in 2001/02 was 11 compared with 8.8 heads ten years ago.

11.3 Cattle

Cattle raising is most popular among holdings in the Mountain belt area with 80% of the holdings reporting an aggregate number of 963,300 heads in 2001/02, an average of 4 heads per holding. This average is almost one head higher than the national average of 3.14. Hill belt holdings reported the greatest number of cattle of more than 3.5 million heads but the average per holding registered much lower at 3.17, this figure hovers around the national average. Tarai belt reported the lowest proportion of holdings raising cattle was 63.9% of the total holding. The reported

FIGURE 11.3: HOLDINGS WITH CATTLE AND BUFFALOES, 2001/02



cattle population was 2.7 million heads and the average cattle per holding was 2.88 heads, the lowest average among the holdings in the three belts.

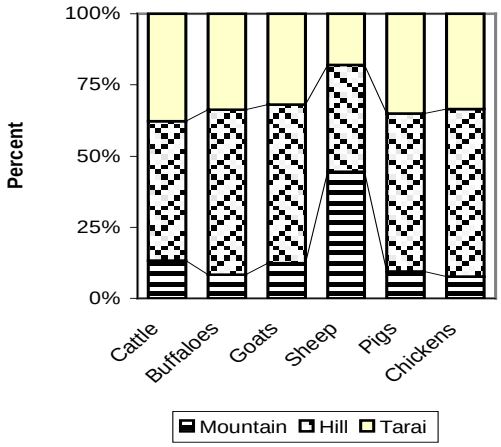
Among development regions, Far Western region reported the highest incidence of cattle raising at 85.4% of the total although Eastern region reported the largest number of heads of cattle of almost 2 million but Mid-Western region reported the highest average per holding at 4.06 heads of cattle.

By size of holdings, it is logical that the large holdings reported the highest incidence of cattle raising at 87.2% with an average number per holding of 3.94 heads. Second highest proportion of holdings with cattle were the medium-sized holdings, 0.5 to less than 2 hectares, with 79.7% of them reporting cattle in their holding with an average number of 3.34 heads per holding. The next group of holdings that reported the third highest proportion of cattle raisers were those with no land at 65.1% with an average of 2.94 heads of cattle per holding. The lowest proportion of cattle raisers was found among the small holdings with 54.4% and reported also the lowest average per holding of only 2.66 heads, see TABLE 11.7.

The male cattle population had increased between 1991/92 and 2001/02 from 4.13 million to 4.33 million. However, for female cattle population, the number has been decreasing especially the adult ones (3 years old and over), from 2.7 million in 1981/82 to 2.3 million in 1991/92 then went down to 1.8 million in 2001/02. On the other hand, the increasing male cattle population may be expected because these were used as work animals but the declining female cattle population cannot be explained considering that, in general, these are not slaughtered for meat purposes but they are good source of milk.

It is noted that among the younger cattle, there was an increase in the population between the two censuses. For those under one year, the increase was 15.6% and for female cattle one to three years old, the increase was only about 8%.

FIGURE 11.4: LIVESTOCK POPULATION BY TYPE, ECOLOGICAL BELTS, 2001/02



11.4 Chaunri

There was a spurt growth in the number of chaunri raised between 1991/92 and 2001/02 from 55,600 to 95,400 or 62.9% increase compared with only 5.6% increase between 1981/82 and 1991/92. The increase in the number of holdings raising chaunri was also remarkable from 6,900 to 9,000 holdings between 1981/82 and 1991/92 to 14,200 holdings in 2001/02 or an increase of 30.4% and 57.8%, respectively.

Despite the big increase in the number of holdings tending to chaunri, it was noted that there were no holdings raising this type of animal in Tarai in 2001/02. Apparently this livestock grows only in temperate areas with 8,300 out of the 14,200 raisers found in the Hill belt and 5,900 holdings in Mountain belt. While most chaunri raisers were found in Hill belt area most of the chaunri population were found in Mountain belt (60.5%) or an average of 9.8 heads per holding compared with an average of 4.5 heads per holding in Hill belt.

It may be significant to notice that all development regions reported some holdings raising chaunri with Eastern region reporting the most number of 4,500 or 31.7% of the total chaunri raisers. Far-Western region reported the least number of raisers of only 500 holdings.

As a whole, there were only 0.4% of the total holdings raising chaunri in Nepal in 2001/02 distributed in the different holding sizes including holdings without land, see TABLE 11.6.

11.5 Buffaloes

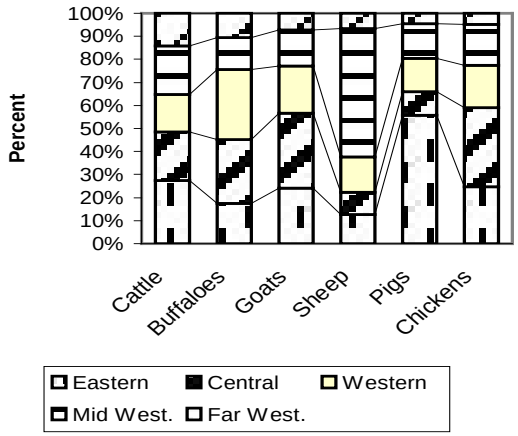
Holdings that raise buffaloes numbered 1.59 million in 2001/02, which is 47.2% of the total holdings in Nepal. Buffalo is second in rank in importance among large livestock with a population of 3.5 million in 2001/02, an increase of 11.6% over the count in 1991/92, which was 3.1 million heads. The big increase in the number of buffaloes occurred between 1981/82 and 1991/92 where the increment registered at 31%, see TABLE 11.1.

Proportionally, Hill belt holdings reported the highest with 57.6% of the total holdings raising buffaloes compared with only 47.2% in Tarai and 42.5% in Mountain belt.

Of the 3.5 million heads of buffaloes in 2001/02, 2 million heads or 58.0% were found in Hill belt area while 33.6% and 8.3% were in Tarai and Mountain belts, respectively. It may be mentioned that the average number of heads of buffaloes in the three belts are not significantly different, a little above 2 heads per holding although the Mountain belt had the highest average of 2.28 heads per holding compared with Tarai's average of 2.14 heads per holding, being the lowest average reported.

The buffalo population was also all over the different development regions although there may be differences in the proportion raising this livestock. Western region reported the highest proportion of holdings with buffaloes at 65.5% of the total holdings in this region followed by Far-Western region with 49.5%. Eastern region reported the lowest proportion of holdings with buffaloes although population-wise, it reported more than Far-Western region.

FIGURE 11.5: LIVESTOCK POPULATION, DEVELOPMENT REGIONS, 2001/02



The large holdings reported the highest proportion with buffaloes at 61.4% followed by holdings with sizes of from 0.5 hectare to less than 2 hectares with 55.1%. It may be interesting to see that almost a third of the holdings without land reported having buffaloes while 37.6% among small holdings reported that they have buffaloes in 2001/02.

Since 1981/92 up to 2001/02, the female population of buffaloes aged three years old and over registered a proportion of more than 85% of the total. This seems to indicate that holdings in Nepal do not dispose of their female buffaloes.

11.6 Large livestock in milk

TABLE 11.10 shows the proportion of milking animals relative to the total adult female large livestock in Nepal. Among the three large livestock, buffaloes yielded the highest proportion that are milking, where almost 60% of the female buffaloes 3 years old and over were with milk in 2001/02. Chaunri milking animals consisted of 58.7% while cattle reported the proportion of milking cows at 50.4%.

11.7 Small livestock

The three most commonly raised small livestock in Nepal in 2001/02 in the order of their frequency were: goats, pigs and sheep.

Goat population reached almost 7 million in 2001/02 with 3.9 million heads in Hill belt and 2.2 million heads in Tarai while only 209,800 were found in Mountain belt. However, the highest average number of goat per holding was reported by Mountain belt (5.6 heads) and Tarai reported the least, which was 3.3 heads of goats per holding.

More than 50% of the holdings in Central region, Eastern region and Western region reported of raising goats in 2001/02.

There were more female goats than male in 2001/02. The adult female goats (six months and over) comprised 70.8% of the total goat population. The high proportion of adult female goats is a good sign that breeding of goats both for meat and for reproduction purposes was assured. The adult male goats consisted of only 29.2%.

While the goat population has been on the rise during the past 20 years, the opposite was observed on the sheep population. The number of holdings raising sheep had been on the decline since 1981/82 and this had affected the stock of sheep, which had been decreasing fast. Proportionally, the Mountain belt reported the highest proportion of sheep raisers with 4.8% of the total holdings. It also reported the most number of sheep. Of the 471,200 sheep

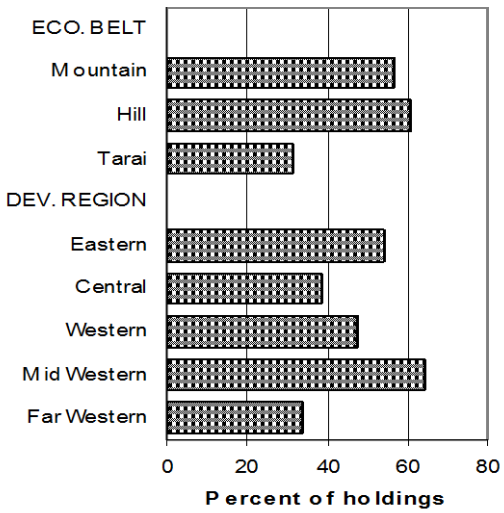
population, 209,800 or 44.5% were in the Mountain belt area while the Hill belt reported 176,200 heads or 37.4%.

Proportionally, Mid-Western region reported the highest percentage of holdings with sheep at 6.8% of the total holdings compared with the next highest, which was only 1.9% reported by Far-Western region, see TABLE 11.4.

Like the adult goat population, the female sheep population 6 months old and over was much higher than the male adult sheep population in 2001/02. The females consisted of 67.3% of the total adult sheep population, which is also a good indication that the propagation of the sheep is assured see TABLE 11.9.

The pig population was observed to be on the rise also like the goat. This livestock is becoming popular as a source of meat supply in Nepal, second to chicken. Of the 327,800 holdings that reported raising pigs, 186,400 or 56.9% of the total holdings were in Eastern region. This number represents 23% of the total holdings in Eastern region. The second in rank proportionally is Mid-Western region where 8.8% of the total holdings raised pigs.

FIGURE 11.6: HOLDINGS WITH CHICKENS, 2001/02



By size of holding, 317,200 heads out of 632,600 heads of pigs or 50.1% were raised in holdings with 0.5 hectare to less than 2 hectares in area. The small holdings reported a total of 238,400 heads that was 37.9% of the total pig population while the large holdings reported 10.4% of the total. Holdings without land reported the rest, which was 11,200 heads or 1.8% of the total.

11.8 Poultry

Chickens, ducks and pigeons compose the three most important poultry in Nepal. In 1981/82, the total number of holdings that raised chicken numbered 716,900 with a population of 7.4 million or an average heads of 10.3 chicken per holding. In 1991/92, the number of holdings raising chicken almost doubled (1.4 million) but the chicken population did not increase as much. The average number of heads of chicken per holding reduced to 8.8. In 2001/02, the number of holdings engaged in raising chicken increased slightly by 13.9% and the increase in the number of chicken was almost 43% of the total. The average heads of chicken per holding was 11.1, which was even higher than in 1981/82.

Among the three belts, the Hill belt reported the highest percentage of holdings raising chicken at 60.6% compared with 56.3% and 31.5% in the Mountain and Tarai belts, respectively. Correspondingly, out of 1,594,400 holdings raising chicken, 960,800 holdings were located in Hill belt area, which is approximately 60% also.

Of the five regions, Mid-Western region reported the highest proportion of holdings with chicken at 64.3% followed by Eastern region with54.3%. However, if we look at TABLE 11.4, Eastern region reported the

most number of holdings raising chicken followed by Central region.

There were more holdings that raised pigeons (202,100) than ducks (110,100) in 2001/02. Tarai reported the highest count of both ducks and pigeons. Of the 393100 ducks, 264,700 heads or 67.3% of the total ducks were raised in Tarai and 1,035,800 heads out of 1,845,200 pigeons or 56.1% were raised also in Tarai, see TABLE 11.3.

TABLE 11.1: NUMBER OF HOLDINGS WITH LIVESTOCK AND LIVESTOCK NUMBERS BY LIVESTOCK TYPE, NEPAL, 1981/82, 1991/92 AND 2001/02

Livestock type	Holdings (' 000)			Livestock (' 000)			Percent change	
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1991/1981	2001/1991
Cattle	1,261.9	2,067.1	2,297.4	6,501.6	7,359.3	7,215.2	13.2	-2.0
Chaunri	6.9	9.0	14.2	55.5	58.6	95.4	5.6	62.9
Buffaloes	778.6	1,307.8	1,586.8	2,379.7	3,116.3	3,477.7	31.0	11.6
Goats	787.0	1,382.8	1,686.4	3,643.7	5,515.5	6,932.9	51.4	25.7
Sheep	99.9	92.7	67.7	677.1	602.8	471.2	-11.0	-21.8
Pigs	164.1	267.5	327.8	433.6	495.8	632.6	14.3	27.6
Horses		9.0	9.1		14.3	20.1		40.3
Mules and asses	16.1	1.2	1.4	27.5	5.3	6.0	-80.7	13.1
Rabbits			2.6			10.1		
Other animals	16.6	3.5	3.9	36.8	7.3	5.9	-80.2	-19.5
Chickens	716.9	1,400.4	1,594.4	7,368.6	12,333.1	17,631.3	67.4	43.0
Ducks	37.2	92.6	110.1	142.3	280.3	393.1	97.0	40.2
Pigeons	116.8	215.8	202.1	830.7	1,419.9	1,845.2	70.9	30.0
Other poultry	7.8	3.9	5.7	20.4	9.2	57.3	-54.9	523.0
Total	2,194.0	2,736.1	3,364.1	22,117.5	31,217.7	38,794.0	41.1	24.3

TABLE 11.2: NUMBER AND PERCENT OF HOLDINGS WITH LIVESTOCK BY MAIN LIVESTOCK TYPE AND ECOLOGICAL BELT, 2001/02

Livestock type	Ecological Belt			Nepal
	Mountain	Hill	Tarai	
		Number of holdings ('000)		
Cattle	238.8	1,113.3	945.3	2,297.4
Chaunri	5.9	8.3	-	14.2
Buffaloes	126.7	913.2	546.8	1,586.8
Goats	154.2	865.2	666.9	1,686.4
Sheep	14.4	33.5	19.8	67.7
Pigs	33.7	187.4	106.7	327.8
Chickens	167.8	960.8	465.7	1,594.4
Ducks	4.5	29.3	76.3	110.1
Pigeons	8.7	81.0	112.4	202.1
Total holdings	298.2	1,586.4	1,479.5	3,364.1
		Percent to total		
Cattle	80.1	70.2	63.9	68.3
Chaunri	2.0	0.5	-	0.4
Buffaloes	42.5	57.6	37.0	47.2
Goats	51.7	54.5	45.1	50.1
Sheep	4.8	2.1	1.3	2.0
Pigs	11.3	11.8	7.2	9.7
Chickens	56.3	60.6	31.5	47.4
Ducks	1.5	1.8	5.2	3.3
Pigeons	2.9	5.1	7.6	6.0
Total	100.0	100.0	100.0	100.0

TABLE 11.3: LIVESTOCK NUMBERS BY MAIN LIVESTOCK TYPE, ECOLOGICAL BELT, 2001/02

Livestock type	Ecological belt			Nepal
	Mountain	Hill	Tarai	
Cattle	963.3	3,526.1	2,725.8	7,215.2
Chaunri	57.7	37.7	-	95.4
Buffaloes	289.3	2,018.4	1,170.0	3,477.7
Goats	859.3	3,862.9	2,210.8	6,932.9
Sheep	209.8	176.2	85.2	471.2
Pigs	59.9	351.6	221.1	632.6
Chickens	1,353.9	10,361.2	5,916.2	17,631.3
Ducks	10.6	117.8	264.7	393.1
Pigeons	325.0	484.4	1,035.8	1,845.2

TABLE 11.4: NUMBER AND PERCENT OF HOLDINGS WITH LIVESTOCK BY MAIN LIVESTOCK TYPE AND DEVELOPMENT REGION, 2001/02

Livestock type	Development region					Nepal
	Eastern	Central	Western	Mid Western	Far Western	
			Number of holdings ('000)			
Cattle	625.9	594.7	419.7	372.6	284.4	2,297.4
Chaunri	4.5	2.8	3.3	3.1	0.5	14.2
Buffaloes	285.3	472.6	469.6	194.3	165.0	1,586.8
Goats	428.4	566.0	360.1	204.7	127.2	1,686.4
Sheep	11.9	9.7	8.2	31.7	6.2	67.7
Pigs	186.4	31.5	50.1	41.5	18.3	327.8
Chickens	439.5	399.6	341.8	302.0	111.4	1,594.4
Ducks	44.4	20.5	22.7	14.6	8.0	110.1
Pigeons	107.7	34.2	50.9	8.1	1.3	202.1
Total holdings	810.0	1,035.8	715.8	469.5	333.0	3,364.1
			Percent to total			
Cattle	77.3	57.4	58.6	79.4	85.4	68.3
Chaunri	0.6	0.3	0.5	0.7	0.2	0.4
Buffaloes	35.2	45.6	65.6	41.4	49.5	47.2
Goats	52.9	54.6	50.3	43.6	38.2	50.1
Sheep	1.5	0.9	1.1	6.8	1.9	2.0
Pigs	23.0	3.0	7.0	8.8	5.5	9.7
Chickens	54.3	38.6	47.8	64.3	33.5	47.4
Ducks	5.5	2.0	3.2	3.1	2.4	3.3
Pigeons	13.3	3.3	7.1	1.7	0.4	6.0
Total holdings	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 11.5: LIVESTOCK NUMBERS BY MAIN LIVESTOCK TYPE, DEVELOPMENT REGION, 2001/02

Livestock type	Development region					Nepal
	Eastern	Central	Western	Mid Western	Far Western	
Cattle	1,972.3	1,521.5	1,178.3	1,513.2	1,029.8	7,215.2
Chaunri	31.8	11.7	20.9	30.1	0.9	95.4
Buffaloes	611.0	960.7	1,054.3	480.7	371.0	3,477.7
Goats	1,671.2	2,248.8	1,425.4	1,088.7	498.8	6,932.9
Sheep	59.1	45.3	72.5	262.5	31.7	471.2
Pigs	352.4	65.7	89.9	96.4	28.0	632.6
Chickens	4,345.1	6,065.3	3,223.5	3,158.2	839.2	17,631.3
Ducks	141.3	73.0	73.3	81.1	24.4	393.1
Pigeons	766.6	541.3	313.0	217.0	7.4	1,845.2

TABLE 11.6: NUMBER AND PERCENT OF HOLDINGS WITH LIVESTOCK BY MAIN LIVESTOCK TYPE AND SIZE OF HOLDING, 2001/02

Livestock type	Size of holding				
	No land	Less than 0.5 ha	0.5 - < 2.0 ha	2.0 ha and over	Total
	Number of holdings ('000)				
Cattle	17.4	858.9	1,199.6	221.6	2,297.4
Chaunri	0.1	6.2	7.0	0.9	14.2
Buffaloes	8.0	593.5	829.2	156.2	1,586.8
Goats	12.0	681.3	850.7	142.4	1,686.4
Sheep	0.3	20.3	38.6	8.5	67.7
Pigs	2.5	130.6	165.5	29.1	327.8
Chickens	10.1	703.1	771.6	109.6	1,594.4
Ducks	1.3	37.9	52.7	18.3	110.1
Pigeons	1.6	53.0	112.0	35.6	202.1
Total holdings	26.7	1,578.9	1,504.3	254.2	3,364.1
	Percent to total				
Cattle	65.1	54.4	79.7	87.2	68.3
Chaunri	0.2	0.4	0.5	0.4	0.4
Buffaloes	29.8	37.6	55.1	61.4	47.2
Goats	44.8	43.2	56.5	56.0	50.1
Sheep	1.0	1.3	2.6	3.4	2.0
Pigs	9.5	8.3	11.0	11.5	9.7
Chickens	37.9	44.5	51.3	43.1	47.4
Ducks	4.7	2.4	3.5	7.2	3.3
Pigeons	5.9	3.4	7.4	14.0	6.0
Total	100.0	100.0	100.0	100.0	100.0

TABLE 11.7: LIVESTOCK NUMBERS BY MAIN LIVESTOCK TYPE AND SIZE OF HOLDING, NEPAL, 2001/02

(In thousand)

Livestock type	Size of holding				
	No land	Less than 0.5 ha	0.5 - <2.0 ha	2.0 ha and over	Total
Cattle	51.2	2,287.6	4,002.8	873.6	7,215.2
Chaunri	0.6	45.4	39.1	10.3	95.4
Buffaloes	19.8	1,116.1	1,917.5	424.3	3,477.7
Goats	47.2	2,402.2	3,798.4	685.2	6,932.9
Sheep	1.4	122.9	288.4	58.5	471.2
Pigs	11.2	238.4	317.2	65.8	632.6
Chickens	221.0	7,470.1	8,232.8	1,707.3	17,631.3
Ducks	4.5	114.2	195.3	79.0	393.1
Pigeons	15.4	319.1	1,024.8	485.9	1,845.2

TABLE 11.8: CATTLE, CHAUNRI AND BUFFALOES POPULATION BY AGE AND SEX, NEPAL, 1981/82, 1991/92 AND 2001/02

(In thousand except percent)

Age/Sex	Cattle			Chaunri			Buffaloes		
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02
					Male				
Under one year	na	415.6	446.0	na	4.3	13.3	na	249.1	327.8
One to three years	525.0	511.2	491.7	5.7	3.3	6.8	175.9	155.1	175.3
Three years and over	2,148.7	3,207.7	3,395.3	8.8	11.7	20.3	170.7	274.8	263.3
Total males	na	4,134.4	4,333.0	na	19.2	40.4	na	679.0	766.4
					Female				
Under one year	na	416.6	481.6	na	4.4	9.2	na	324.6	464.8
One to three years	614.7	534.4	576.9	6.7	3.4	10.6	389.3	427.7	500.8
Three years and over	2,661.4	2,273.9	1,823.6	23.4	31.6	35.3	1,367.8	1,685.0	1,745.8
Total females	na	3,224.9	2,882.1	na	39.4	55.1	na	2,437.3	2,711.3
					Total				
Under one year	551.8	832.2	927.6	10.9	8.6	22.5	276.0	573.7	792.6
One to three years	1,139.7	1,045.5	1,068.6	12.4	6.7	17.4	565.3	582.9	676.1
Three years and over	4,810.1	5,481.6	5,219.0	32.2	43.2	55.6	1,538.5	1,959.8	2,009.1
Total	6,501.6	7,359.3	7,215.2	55.5	58.6	95.4	2,379.7	3,116.3	3,477.7
					Percent female to total				
Under one year	na	50.1	51.9	na	51.2	40.8	na	56.6	58.6
One to three years	53.9	51.1	54.0	54.0	50.7	61.1	68.9	73.4	74.1
Three years and over	55.3	41.5	34.9	72.7	73.1	63.5	88.9	86.0	86.9
Total	na	43.8	39.9	na	67.2	57.7	na	78.2	78.0

TABLE 11.9: NUMBERS OF GOATS AND SHEEP BY SEX AND AGE, NEPAL, 2001/02

(In thousand)

Sex and age	Goats	% to total	Sheep	% to total
Males				
Under six months	1,094.4	49.1	68.7	49.7
Six months and over	1,373.8	29.2	108.9	32.7
Total	2,468.2	35.6	177.6	37.7
Females				
Under six months	1,134.9	50.9	69.5	50.3
Six months and over	3,329.8	70.8	224.1	67.3
Total	4,464.7	64.4	293.6	62.3
Total				
Under six months	2,229.3	100.0	138.2	100.0
Six months and over	4,703.6	100.0	333.0	100.0
Total	6,932.9	100.0	471.2	100.0

TABLE 11.10: ADULT FEMALE LARGE LIVESTOCK AND NUMBER OF FEMALE ANIMALS IN MILK, NEPAL, 2001/02

(In thousand except percent)

Female animals 3 years old & over	Type of large livestock		
	Cattle	Chaunri	Buffaloes
Total female livestock 3 years old & over	1,823.6	35.3	1,745.8
Number in milk	918.8	20.7	1,043.8
Percent in milk	50.4	58.7	59.8

CHAPTER 12
ANCILLARY ACTIVITIES

The 2001/02 agricultural census also covered the ancillary activities carried out on agricultural holdings in relation to forestry and fishing. The holdings with woodland and forest were estimated to be 204.8 thousand in 2001/02 which was 6.1 percent of the total holdings. Between 1981/82 and 1991/92 there was big increase in the number of holdings with woodland and forest. The number of such holdings had increased from 88.9 thousand to 439.6 thousand holdings, an increase of 394.5 percent in 10 years. The period between 1991/92 and 2001/02 registered decline in woodland and forest area from 439.6 thousand hectares to 204.8 thousand hectares only – a decrease of 46.6 percent.

Along with the number of holdings, area under woodland and forest had also increased in 1991/92 and decreased in 2001/02. In 1991/92, there was a large increase in the area of woodland and forest. From 15.0 thousand hectares in 1981/82 it increased to 108.8 thousand hectares in 1991/92. In 2001/02, the area under this category declined to 37.2 thousand hectares, a decrease of 65.8 percent compared to 1991/92. This area accounted for 23.8 percent of the total area of non-agricultural land in 2001/02.

Table 12.0 Summary Statistics

Description	1981/82	1991/92	2001/02
Holdings with woodland and forest land (' 000)	88.9	439.6	204.8
Total land holdings (' 000)	2,185.7	2,703.9	3,337.4
% with woodland/forest to total holdings	4.1	16.3	6.1
Area of woodland and forest (' 000 ha)	15.0	108.8	37.2
Average area per reporting holding (ha)	0.1687	0.2475	0.1816

12.1 Ancillary activities

The 2001/02 agriculture census covered ancillary activities carried out on the agricultural holdings specifically forestry and fishery activities undertaken simultaneously with agricultural activities.

An agricultural holding is composed of agricultural and non-agricultural lands. Ponds usually used in raising aquatic animals and plants are part of agricultural land while forestry activities are undertaken in the non-agricultural land portion of the holding under woodland and forest.

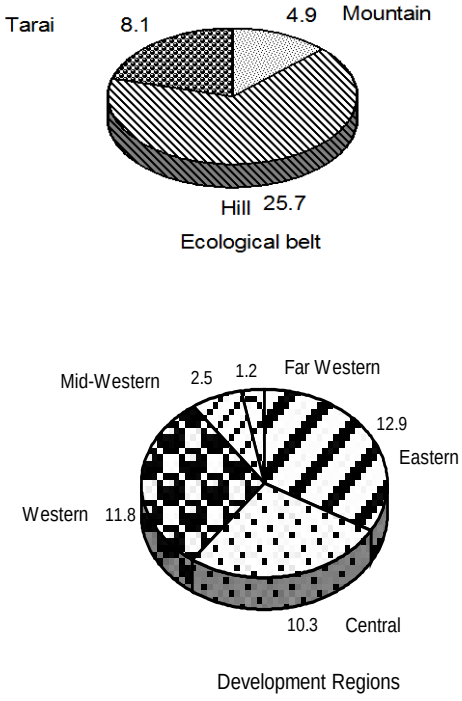
12.2 Forestry activities

Holdings with forestry activities are those that reported the use of land under woodland and forest during the census years and those holdings that reported some forest trees within the holding. TABLE 12.1 shows the number of agricultural holdings with forestry activities in compact forest area from 1961/62 to 2001/02 or a period of forty years and TABLE 12.2 shows the total number of holdings with forest trees on the holding for 1991/92 and 2001/02.

12.3 Compact forest area

Between 1961/62 to 1971/72, there was a big decrease in the number of holdings with compact forest area not only proportionally to the total number of agricultural holdings but also in the actual number of holdings reporting forestry activities. In 1961/62 there were 150,000 holdings with compact forest area.. This was 9.9% of the total holdings during that year. In 1971/72, or ten years later, the number of holdings with compact forest area decreased to 50,700. This was only 3% of the total holdings during the period but the decrease was 66.2% over the 1961/62 figure. In 1981/82, there was an increase in the number of holdings to 88,900, equivalent to 4.1% of the total holdings during that year. The increase in the number of holdings between the two census periods was 75.3% or an annual average increment of 7.5%. In 1991/92, a tremendous increase was observed at 439,600 holdings. This was 16.3% of the total holdings during the period and an increase of 394.5% over the number of holdings with compact forest area in 1981/82. In 2001/02 the number of holdings with compact forest area was even less than half that of 1991/92 level (204,800 only vs. 439,600). Except for 1961/62, the proportion of the holdings with compact forest area during the past 30 years had been observed to be increasing. However, in 2001/02, there was again a sudden decrease in the proportion of holdings engaged in forestry activities, from 16.3% in 1991/92 to only 6.1% of the total holdings in 2001/02. This 6.1% increase can be considered as within the

FIGURE 12.1: NUMBER OF FOREST TREES, 2001/02 (Millions)

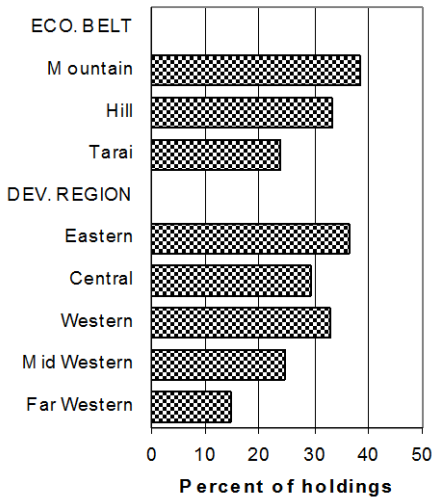


trend of previous census years, i.e. 3% in 1971/72; 4.1% in 1981/82. It was only in 1991/92 that there was an abnormal increase in the number of holdings with compact forest area that resulted also in an abnormal increase in the area of woodland and forest at 108,800 hectares compared with only 15,000 hectares of compact forest area in 1981/82 and 37,200 hectares in 2001/02, see TABLE 12.1.

12.4 Holdings with forest trees

In 2001/02, there were 988,700 holdings that reported having forest trees scattered within their agricultural holding. This number represented 29.6% of the total land holdings of 3,337,400 in 2001/02. The proportion of holdings with some forest trees in 1991/92 was higher at 39.9% and the number of holdings with forestry activities was also higher which was more than a million, see TABLE 12.2.

FIGURE 12.2: HOLDINGS WITH FOREST TREES, 1991/92



12.5 Area of woodland and forest

In Chapter 5 Land Use, the non-agricultural land portion of the holdings had been increasing but the trend on the area under woodland and forest did not seem to follow the same trend and can be considered erratic.

The area under woodland and forest is an indication of compact forest area where the trees were systematically planted. Since these are lands within the boundary of the agricultural holding, the compact forest areas therefore were not part of the commercial forest.

In 1961/62 the total area of woodland and forest was 13,800 hectares. This area was 23.4% of the total area of non-agricultural land in Nepal.

In 1971/72, the area under woodland and forest decreased to only 4,700 hectares which was 7.6% only of the total non-agricultural land during the period. In 1981/82, the area increased to 15,000 hectares, which was 14.4% of the total non-agricultural land during the period. However, there was an increase of 219% over the area ten years back.

In 1991/92, there was an abrupt increase in the area under woodland and forest to 108,800 hectares. This area was 53.2% of the total area of non-agricultural land during the year. The increase in area between 1981/82 to 1991/92 was 625.3%, which can be considered as abnormally high. In 2001/02, the area under woodland and forest decreased to 37,200 hectares, a decrease of 65.8% from ten years ago. This area, however, was 23.8% of the total area reported under non-agricultural land in 2001/02.

Except for the data on area in 1991/92, it can be said that in general, there has been a steady increase in the area under woodland and forest as part of the holding in Nepal as indicated by the average area per holding reflected in TABLE 12.1, starting from 0.0920 hectare in 1961/62 to 0.1687 hectare in 1981/82 to 0.1816 hectare in 2001/02. This increasing trend of area of woodland and forest is indicative of the slowly changing structure of the land comprising the agricultural land holding in Nepal.

Among the ecological belt, Tarai belt displayed a big decrease in the number of holdings with forest trees from 407,200 in 1991/92 to 348,500 in 2001/02, a decrease of 14.4% compared with a decrease of only 4% in Hill belt and 7.6% in Mountain belt.

12.6 Distribution of Forest Trees

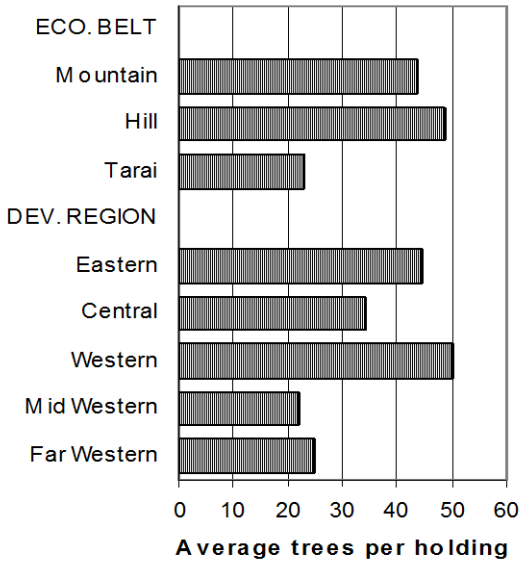
In 2001/02, there were 38.684 million trees reported by holdings not belonging to the compact forest area-type of holding. The density of forested holdings was 39 trees per holding in 2001/02, up by 25% over the 1991/92 density of 31 trees. Hill belt reported the highest average density of 49 trees per holding in 2001/02 followed by Mountain belt with 43 trees per holding. In 1991/92, the highest average was 37 trees per holding also in Hill belt. Mountain and Tarai belts had the same density of 25 forest trees per holding

The large holdings reported the highest average of forest trees per holding in 2001/02 of 93 trees and the small holdings reported only 16 forest trees per holding.

Proportionally, the large holdings also reported the highest proportion of holdings with forest trees and the small holdings, the lowest.

In terms of the number of trees per holding, about 21.4% of the holdings reported at least 50 forest trees in hill belt while the Mountain belt reported a slightly lower

FIGURE 12.3: AVERAGE TREES PER FORESTED HOLDING, 1991/92



percentage of 21.2%. Tarai belt reported only 9% of the holdings with at least 50 forest trees in their holding.

12.7 Fishery activities

Fishing is not yet popular among agricultural holders in Nepal. Of the 3.337 million holdings only 12,700 holdings has ponds in 2001/02 with an aggregate area of 5,700 hectares. Ten years ago, there were 11,500 holdings with ponds, an increase of 10.4%.

Other fishing activities were reported by 9,500 holdings or 0.3% of the total land holdings in 2001/02. Ten years ago, the number of holdings was 1,500 only.

TABLE 12.1: WOODLAND AND FOREST LAND, NEPAL, 1961/62 TO 2001/02

Particulars	1961/62	1971/72	1981/82	1991/92	2001/02
Holdings with woodland and forest land (' 000)	150.0	50.7	88.9	439.6	204.8
Total land holdings (' 000)	1,518.0	1,707.3	2,185.7	2,703.9	3,337.4
% with woodland/forest to total holdings	9.9	3.0	4.1	16.3	6.1
Area of woodland and forest (' 000 ha)	13.8	4.7	15.0	108.8	37.2
Average area per reporting holding (ha)	0.0920	0.0927	0.1687	0.2475	0.1816
Non-agricultural land ('000 ha)	59	61.7	104.5	204.5	156.3
% to non-agricultural land	23.4	7.6	14.4	53.2	23.8

TABLE 12.2: LAND HOLDINGS WITH COMPACT FOREST AREA AND FOREST TREES BY ECOLOGICAL BELT, NEPAL, 1991/92 AND 2001/02

Particulars	Ecological belt						Nepal	
	Mountain		Hill		Tarai			
	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02
Woodland and forest land								
Number of holdings ('000)	26.5	13.4	297.3	139.7	115.8	51.7	439.6	204.8
Area ('000 ha)	5.7	2.6	93.2	29.6	9.9	5.1	108.8	37.2
Holding with forest trees								
Number of holdings ('000)	123.2	113.8	548.2	526.3	407.2	348.5	1,078.6	988.7
Percent of all holdings	47.4	38.3	40.6	33.3	37.3	23.9	39.9	29.6
Number of trees ('000)	3,127.7	4,937.2	20,113.3	25,684.2	10,214.2	8,062.6	33,455.2	38,684.0
Average number of trees	25	43	37	49	25	23	31	39
Total land holdings (' 000)	259.9	297.2	1,351.3	1,581.4	1,092.8	1,458.8	2,703.9	3,337.4

TABLE 12.3: LAND HOLDINGS WITH COMPACT FOREST AREA AND FOREST TREES BY DEVELOPMENT REGION, NEPAL, 2001/02

Particulars	Development region					Nepal
	Eastern	Central	Western	Mid Western	Far Western	
Woodland and forest land						
Number of holdings ('000)	61.2	44.0	52.0	33.4	14.2	204.8
Area ('000 ha)	13.9	8.6	7.2	6.0	1.5	37.2
Forest trees on holding						
Number of holdings ('000)	291.1	300.1	233.7	114.8	49.0	988.7
Percent of all holdings	36.4	29.2	32.8	24.6	14.8	29.6
Number of trees ('000)	12,898.2	10,278.3	11,771.1	2,525.2	1,211.1	38,684.0
Average number of trees	44	34	50	22	25	39
Total land holdings (' 000)	799.7	1,026.9	711.7	467.4	331.7	3,337.4

TABLE 12.4: LAND HOLDINGS WITH COMPACT FOREST AREA AND FOREST TREES BY SIZE OF HOLDING, NEPAL, 2001/02

Particulars	Size of holding			
	Less than 0.5 ha	0.5 - 2.0 ha	2.0 ha and over	Total
Woodland and forest land				
Number of holdings ('000)	32.5	133.3	39.0	204.8
Area ('000 ha)	1.8	20.1	15.3	37.2
Forest trees on holding				
Number of holdings ('000)	338.7	536.7	113.3	988.7
Percent of all holdings	21.4	35.7	44.6	29.6
Number of trees ('000)	5,264.8	22,920.1	10,499.1	38,684.0
Average number of trees	16	43	93	39
Total land holdings (' 000)	1,578.9	1,504.3	254.2	3,337.4

TABLE 12.5: NUMBER AND PERCENT OF HOLDINGS WITH FOREST TREES BY NUMBER OF TREES AND ECOLOGICAL BELT, NEPAL 2001/02

Number of trees	Ecological belt			Nepal
	Mountain	Hill	Tarai	
	Number of holdings ('000)			
1 - 9	25.0	171.3	201.1	397.4
10 – 49	64.8	242.2	116.2	423.2
50 – 199	21.6	90.6	26.1	138.3
200 and over	2.5	22.3	5.1	29.9
Total	113.8	526.3	348.5	988.7
	Percent to total			
1 - 9	21.9	32.5	57.7	40.2
10 - 49	56.9	46.0	33.3	42.8
50 - 199	19.0	17.2	7.5	14.0
200 and over	2.2	4.2	1.5	3.0
Total	100.0	100.0	100.0	100.0

TABLE 12.6: NUMBER AND PERCENT OF HOLDINGS WITH FOREST TREES BY NUMBER OF TREES AND DEVELOPMENT REGION, 2001/02

Number of trees	Development region					Nepal
	Eastern	Central	Western	Mid-Western	Far Western	
	Number of holdings ('000)					
1 - 9	121.5	112.5	76.9	60.8	25.7	397.4
10 – 49	116.9	144.5	102.5	41.8	17.4	423.2
50 – 199	42.2	36.9	43.5	10.6	5.1	138.3
200 and over	10.4	6.2	10.9	1.6	0.8	29.9
Total	291.1	300.1	233.7	114.8	49.0	988.7
	Percent to total					
1 - 9	41.8	37.5	32.9	53.0	52.4	40.2
10 – 49	40.2	48.2	43.9	36.4	35.6	42.8
50 – 199	14.5	12.3	18.6	9.2	10.4	14.0
200 and over	3.6	2.1	4.7	1.4	1.6	3.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 12.7: NUMBER AND PERCENT OF HOLDINGS WITH FOREST TREES BY NUMBER OF TREES AND SIZE OF HOLDING, NEPAL, 2001/02

Number of trees	Size of holding			
	Less than 0.5 ha	0.5 - 2.0 ha	2.0 ha and over	Total
	Number of holdings ('000)			
1 - 9	187.2	182.3	27.8	397.4
10 – 49	129.9	246.0	47.2	423.2
50 – 199	19.6	90.0	28.7	138.3
200 and over	1.9	18.4	9.6	29.9
Total	338.7	536.7	113.3	988.7
	Percent to total			
1 - 9	55.3	34.0	24.6	40.2
10 – 49	38.4	45.8	41.7	42.8
50 – 199	5.8	16.8	25.3	14.0
200 and over	0.5	3.4	8.5	3.0
Total	100.0	100.0	100.0	100.0

TABLE 12.8: LAND HOLDINGS WITH FISHERY ACTIVITIES BY DEVELOPMENT REGION, NEPAL, 1991/92 AND 2001/02

(In thousand except Percent)

Particulars	Development region					Nepal
	Eastern	Central	Western	Mid Western	Far Western	
			1991/92			
Holdings with fisheries ('000)	5.5	4.3	2.4	0.7	-	12.9
Holdings with ponds	5.3	3.3	2.2	0.5	-	11.5
Holdings with other fisheries	0.2	1.0	0.2	0.1	-	1.5
Total land holdings (' 000)	628.5	843.7	603.3	368.3	260.1	2,703.9
Area of fish ponds ('000 ha)	1.0	0.9	0.3	0.2	0.0	2.4
			2001/02			
Holdings with fisheries ('000)	13.4	4.6	2.3	1.1	0.8	22.2
Holdings with ponds	7.3	3.0	1.4	0.6	0.4	12.7
Holdings with other fisheries	6.1	1.6	0.9	0.5	0.4	9.5
Total land holdings (' 000)	799.7	1,026.9	711.7	467.4	331.7	3,337.4
Area of fish ponds ('000 ha)	3.2	1.9	0.3	0.1	0.2	5.7
			Percent change			
Holdings with fisheries	143.6	7.0	-4.2	57.1	100.0	72.1
Holdings with ponds	37.7	-9.1	-36.4	20.0	100.0	10.4
Holdings with other fisheries	2,950.0	60.0	350.0	400.0	100.0	533.3
Total land holdings	27.2	21.7	18.0	26.9	27.5	23.4
Area of fish ponds	220.0	111.1	0.0	-50.0	100.0	137.5

CHAPTER 13
NON-RESIDENTIAL BUILDINGS

In 2001/02, there were 1490.9 thousand holdings which reported having non-residential building used for keeping livestock. This accounted for 44.7 percent of the total agricultural holdings. Poultry keeping building was estimated to be 160.1 thousand in 2001/02. Between 1991/92 and 2001/02, a non-residential buildings used for keeping livestock had increased by 20.4 percent. Similarly, building used for keeping poultry also increased by 65.7 percent during the same period.

Number of non-residential building used for storage has decreased in 2001/02 compared to that of 1991/92. The census 2001/02 estimates the number of such building to be just 76.9 thousand. The holdings with at least one non-residential building were 54.3 percent of the total land holdings.

Table 13.0 Summary Statistics

Main Use	Number of Land Holding (‘000)	
	1991/92	2001/02
Keeping Livestock	1,238.2	1,490.9
Keeping Poultry	96.6	160.1
Storage of agriculture. produce	91.1	76.9
Other purpose	132.0	84.7
Total Land holdings of Nepal	2,703.9	3,337.4

13.1 Non-residential building

For the purpose of agriculture census, only non-residential buildings entirely or primarily intended for agricultural use such as warehouses, poultry house, pig pen, stable, etc. were included.

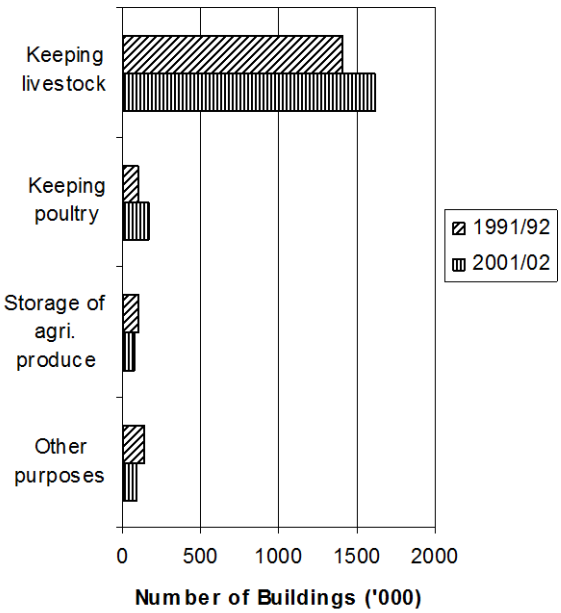
A building is defined as any independent free-standing structure comprising one or more rooms or other spaces covered by a roof and usually enclosed within external walls or dividing walls which extended from the foundations to the roof. A non-residential building that was used for storing agricultural produce and at the same time the family of the holder reside in this building was not considered as non-residential building because the building was not used solely for agricultural purpose.

13.2 Holdings with non-residential buildings

There were three major types of non-residential buildings that were mostly reported by the holdings, these are: buildings for keeping livestock, building for keeping poultry, and building for storing agricultural produce. There were other types of building but the number was insignificant thus were classified under "other purposes."

Of the 3.3 million holdings in 2001/02, 1.5 million holdings or 44.7% of the total reported of having a non-residential building used for keeping livestock; 160,100 holdings or 4.8% with building for keeping poultry; 76,900 holdings or 2.3% with building for storage of agriculture produce; and 84,700 holdings or 2.5% with buildings used for other purposes.

FIGURE 13.1: TYPES OF NON-RESIDENTIAL BUILDINGS, NEPAL, 1991/92 AND 2001/02



The aggregate total of holdings with at least one non-residential building was 54.3% of the total or about 1.8 million holdings.

Proportionally, Hill belt reported the highest percentage of holdings with building for keeping livestock at 49% while Mountain belt reported the lowest with 37.1%, but it reported the highest percentage of building for keeping poultry. On the other hand, Tarai reported the highest ownership of building for storage of agricultural produce, see TABLE 13.1. Western and Eastern regions reported the highest proportion of ownership of building for keeping livestock at 59.6% and 59.3%, respectively.

The chart above shows a comparative number of buildings in 1991/92 and 2001/02. There was an increase in buildings for keeping livestock and poultry but a decrease for storage of agricultural produce and for other purposes.

TABLE 13.1: NUMBER OF LAND HOLDINGS WITH NON-RESIDENTIAL BUILDINGS USED FOR AGRICULTURAL PURPOSES BY MAIN USE IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02

Geographic area	Main use								Total land holdings	
	Keeping livestock		Keeping poultry		Storage, ag. produce		Other purposes			
	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02
	In thousand									
NEPAL	1238.2	1,490.9	96.6	160.1	91.1	76.9	132.0	84.7	2,703.9	3,337.4
ECOLOGICAL BELTS										
Mountain	129.0	110.2	5.3	17.5	4.8	5.2	15.8	3.7	259.9	297.2
Hill	619.7	774.5	41.0	82.0	37.9	30.5	47.6	37.6	1,351.3	1,581.4
Tarai	489.5	606.2	50.3	60.6	48.4	41.3	68.6	43.4	1,092.8	1,458.8
DEVELOPMENT REGIONS										
Eastern	328.6	474.6	44.6	100.2	24.1	29.0	57.2	37.6	628.5	799.7
Central	335.2	319.1	15.2	8.4	26.7	19.5	32.7	18.7	843.7	1,026.9
Western	295.8	423.9	22.6	30.6	22.3	11.7	29.1	9.6	603.3	711.7
Mid Western	193.8	176.3	7.6	11.5	11.1	11.7	8.8	11.5	368.3	467.4
Far Western	84.8	97.0	6.7	9.5	6.8	5.0	4.2	7.4	260.1	331.7
	Percent to total									
NEPAL	45.8	44.7	3.6	4.8	3.4	2.3	4.9	2.5	100.0	100.0
ECOLOGICAL BELTS										
Mountain	49.6	37.1	2.0	5.9	1.8	1.8	6.1	1.2	100.0	100.0
Hill	45.9	49.0	3.0	5.2	2.8	1.9	3.5	2.4	100.0	100.0
Tarai	44.8	41.6	4.6	4.2	4.4	2.8	6.3	3.0	100.0	100.0
DEVELOPMENT REGIONS										
Eastern	52.3	59.3	7.1	12.5	3.8	3.6	9.1	4.7	100.0	100.0
Central	39.7	31.1	1.8	0.8	3.2	1.9	3.9	1.8	100.0	100.0
Western	49.0	59.6	3.7	4.3	3.7	1.6	4.8	1.3	100.0	100.0
Mid Western	52.6	37.7	2.1	2.5	3.0	2.5	2.4	2.5	100.0	100.0
Far Western	32.6	29.2	2.6	2.9	2.6	1.5	1.6	2.2	100.0	100.0

TABLE 13.2: NUMBER OF NON-RESIDENTIAL BUILDINGS USED FOR AGRICULTURAL PURPOSES BY MAIN USE IN ECOLOGICAL BELTS AND DEVELOPMENT REGIONS, NEPAL, 1991/92 AND 2001/02

Geographic area	Main use							
	Keeping livestock		Keeping poultry		Storage, agri. produce		Other purposes	
	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02
	In thousand							
NEPAL	1407.9	1,618.6	101.9	166.0	101.6	82.4	142.7	90.2
ECOLOGICAL BELTS								
Mountain	145.6	130.8	5.7	18.2	5.1	5.4	16.5	3.8
Hill	732.9	859.9	42.6	84.7	39.6	32.2	49.8	39.6
Tarai	529.3	627.8	53.6	63.2	56.9	44.9	76.4	46.7
DEVELOPMENT REGIONS								
Eastern	384.2	525.8	46.9	102.9	25.8	30.8	60.8	39.6
Central	366.9	340.5	16.6	9.3	31.4	20.7	37.5	21.4
Western	342.3	462.0	23.6	32.1	24.2	12.4	30.1	9.8
Mid Western	219.4	188.4	8.0	12.1	12.8	13.3	9.5	11.7
Far Western	95.0	101.9	6.8	9.7	7.4	5.1	4.6	7.7
	Percent to total							
NEPAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
ECOLOGICAL BELTS								
Mountain	10.3	8.1	5.6	10.9	5.0	6.5	11.6	4.3
Hill	52.1	53.1	41.8	51.0	39.0	39.0	34.9	43.9
Tarai	37.6	38.8	52.6	38.1	56.0	54.5	53.5	51.8
DEVELOPMENT REGIONS								
Eastern	27.3	32.5	46.0	62.0	25.4	37.4	42.6	43.9
Central	26.1	21.0	16.3	5.6	30.9	25.1	26.3	23.7
Western	24.3	28.5	23.2	19.3	23.8	15.1	21.1	10.9
Mid Western	15.6	11.6	7.9	7.3	12.6	16.2	6.7	13.0
Far Western	6.7	6.3	6.7	5.8	7.3	6.2	3.2	8.6

CHAPTER 14
HOLDINGS WITH CREDIT

Of the 3364.1 thousand agricultural holdings in Nepal in 2001/02, only 801.3 thousand holdings or 23.8 percent had taken advantage of loan or credit facilities from different sources. In 1991/92, some 22.7 percent holdings of the total holdings had reported of having availed of loans or credit facilities from different sources. Over the decade between 1991/92 and 2001/02 there was an increase of 1.1 percent. The main source of credit reported in 2001/02 was non-institutional sources. There were 481.9 thousand holding (60.1% of the total holdings) with loan from this source. In 1991/92, some 51.0 percent holding had credit or loan from institutional sources.

Table 14.0 Summary Statistics

Source	Number of Holdings ('000)	
	1991/92	2001/02
1. Sajha only	43.0	33.5
2. Agriculture Development Bank only	205.0	228.0
3. Commercial Bank only	44.6	35.0
4. Non-institutional only	306.0	481.9
5. More than one sources	23.6	22.9
Total holdings with credit	622.2	801.3

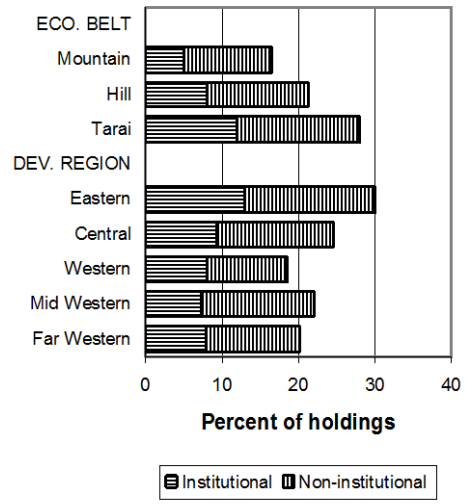
14.1 Agricultural Credit

Information on agricultural credit was collected in 1991/92 and in 2001/02 census of agriculture. Agricultural credit is not usually collected in a census but the information is important to policy makers and program implementers in agriculture. A question was asked whether each agricultural holding had an existing agricultural loan or not. If there is a loan, the source from where the loan was obtained was also asked.

14.2 Holdings with credit

Of the 3,364,100 agricultural holdings of Nepal in 2001/02, only 801,300 holdings or 23.8% had reported of having a loan or credit from several sources. There was a slight increase from those who had loans in 1991/92 at 22.7% of the total holdings of 2,726,100.

FIGURE 14.1: HOLDINGS WITH AGRICULTURAL CREDIT, 2001/02



The main source of credit reported in 2001/02 was non-institutional sources with 481,900 holdings or 60.1% of the total holdings with loans (801,300). In 1991/92, the main source of credit of the majority of the holdings (about 51%) with loans was from institutional sources. The ten percentage points difference indicated a shift of the sources of credit from institutional sources to non-institutional sources.

14.3 Regional comparisons

Among the ecological belt, Tarai reported the highest proportion of agricultural holdings with credit at 28% of the total holdings of 1,479,500 in 2001/02. In 1991/92, the proportion of holdings with credit was 26.8% of the total. Mountain belt reported the lowest proportion of holdings with loans, at 16.5% of the total in 2001/02. This percentage was lower than that of 1991/92, which was 18.6%. In the Hill belt area, the proportion of holdings with loans was 21.3% of the total in 2001/02 and in 1991/92, it was lower at 20.2%.

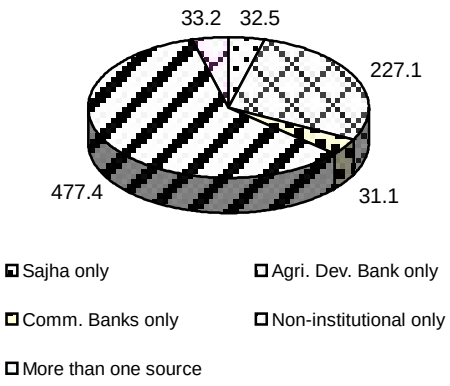
Eastern region reported the highest proportion of holdings with loans at 27.9% of the total and Far-Western region reported the least with only 15.3% of the total holdings with loans.

14.4 Source of credit

There were four specific sources of credit reported by the agricultural holdings in1991/92 as well as in 2001/02. The only difference was the extent of availing of the specific source of loan. The sources of credit in 2001/02 in the order of importance were: Non-institutional source, 60.1%; Agricultural Development Bank (ADB), 30.9%; Sajha, 6.4% and Commercial banks, 5.5%, see TABLE !4.3.

It may be noted that those holdings that availed of loans from ADB only was 28.5% and the rest (2.4%) of the borrowers from ADB had also loans from other sources, i.e. 1.7% of the holdings borrowed also from Sajha and 0.6% in combination with commercial banks. This was also true for holdings that borrowed from commercial

FIGURE 14.2: HOLDINGS WITH CREDIT, NEPAL, 2001/02, SOURCE OF CREDIT ('000)



banks where only 4.4% reported Commercial banks as their only source of credit while 0.6% of them also availed of the ADB aside from their loan from commercial banks. The same is also true for Sajha borrowers where only 4.2% of the total holdings was the only source of credit; about 1.7% borrowed from ADB in combination with Sajha and 0.4% in combination with commercial banks.

It should be noted that the percentage of borrowers from ADB, commercial banks and Sajha decreased in 2001/02 when compared with the levels of borrowers from the same sources in 1991/92.

14.5 Comparisons of small and large holdings

As the size of the holding becomes bigger, the proportion of holdings availing of credit from institutional sources increases and the proportion of borrowers from non-institutional sources decreases. In 2001/02, only 6.1% of small holdings borrowed from institutional sources while the large holdings registered a 20.7% availment. On the other hand, 15.6% of the small holdings borrowed from non-institutional sources while only 10.3% among large holdings availed of this source.

FIGURE 14.3: HOLDINGS WITH CREDIT BY SIZE OF HOLDING, NEPAL, 2001/02

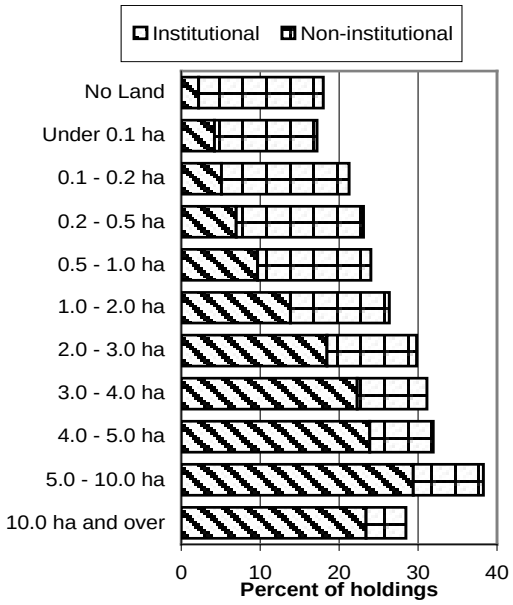


TABLE 14.1: NUMBER AND PERCENT OF HOLDINGS BY SOURCE OF AGRICULTURAL CREDIT AND BY ECOLOGICAL BELT, NEPAL, 1991/92 AND 2001/02

Source of credit	Ecological Belt						Nepal	
	Mountain		Hill		Tarai			
	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02
	Number of holdings ('000)							
Holdings with credit	48.5	49.1	274.5	337.8	299.0	414.4	622.0	801.3
Institutional sources	25	14.9	139.4	127.6	151.6	176.9	316.0	319.4
Non-institutional sources	23.5	34.2	135.1	210.2	147.4	237.5	306.0	481.9
Holdings without credit	212.2	249.1	1,083.2	1,248.6	818.6	1,065.1	2,114.0	2,562.8
Total holdings	260.7	298.2	1,357.7	1,586.4	1,117.6	1,479.5	2,736.1	3,364.1
	Percent to total							
Holdings with credit	18.6	16.5	20.2	21.3	26.8	28.0	22.7	23.8
Institutional sources	9.6	5.0	10.3	8.0	13.6	12.0	11.5	9.5
Non-institutional sources	9	11.5	10.0	13.3	13.2	16.0	11.2	14.3
Holdings without credit	81.4	83.5	79.8	78.7	73.2	72.0	77.3	76.2
Total holdings	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 14.2: NUMBER AND PERCENT OF HOLDINGS BY WHETHER HAVE AGRICULTURAL CREDIT AND DEVELOPMENT REGION, NEPAL, 1991/92 AND 2001/02

Source of credit	Development region					Nepal
	Eastern	Central	Western	Mid Western	Far Western	
			Number of holdings ('000)			
			1991/92			
Holdings with credit	177.4	216.2	112.1	75.9	40.4	622.0
Institutional sources	97.8	105.5	60.5	33.0	19.2	316.0
Non-institutional sources	79.7	110.7	51.6	42.9	21.2	306.0
Holdings without credit	458.9	639.2	496.7	295.6	223.7	2114.0
Total holdings	636.4	855.3	608.8	371.5	264.1	2736.1
			Number of holdings ('000)			
			2001/02			
Holdings with credit	243.4	254.2	133.2	103.2	67.3	801.3
Institutional sources	104.8	96.6	57.6	34.1	26.4	319.4
Non-institutional sources	138.6	157.6	75.6	69.1	40.9	481.9
Holdings without credit	566.6	781.6	582.6	366.4	265.7	2,562.8
Total holdings	810.0	1,035.8	715.8	469.5	333.0	3,364.1
			Percent to total			
			1991/92			
Holdings with credit	27.9	25.3	18.4	20.4	15.3	22.7
Institutional sources	15.4	12.3	9.9	8.9	7.3	11.6
Non-institutional sources	12.5	12.9	8.5	11.5	8.0	11.1
Holdings without credit	72.1	74.7	81.6	79.6	84.7	77.3
Total holdings	100.0	100.0	100.0	100.0	100.0	100.0
			2001/02			
Holdings with credit	30.1	24.5	18.6	22.0	20.2	23.8
Institutional sources	12.9	9.3	8.0	7.3	7.9	9.5
Non-institutional sources	17.2	15.2	10.6	14.7	12.3	14.3
Holdings without credit	69.9	75.5	81.4	78.0	79.8	76.2
Total holdings	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 14.3: NUMBER AND PERCENT OF HOLDINGS WITH AGRICULTURAL CREDIT BY SOURCE OF CREDIT, NEPAL, 1991/92 AND 2001/02

Source of credit	1991/92		2001/02	
	Holdings with credit ('000)	Percent	Holdings with credit ('000)	Percent
Sajha only	43.0	6.9	33.5	4.2
Agricultural Development Bank only	205.0	32.9	228.0	28.5
Commercial Banks only	44.6	7.2	35.0	4.4
Sajha & Agricultural Development Bank	20.1	3.2	13.9	1.7
Agricultural Development Bank & Commercial Banks	2.3	0.4	5.0	0.6
Sajha & Commercial Banks	0.6	0.1	3.0	0.4
Sajha, Agricultural Development Bank & Commercial Banks	0.3	-	0.0	0.0
Sajha, Commercial Banks Agricultural Development Bank & Non-institutional	0.3	-	1.0	0.1
Non-institutional only	306.0	49.2	481.9	60.1
Total holdings with credit	622.0	100.0	801.3	100.0
Sajha only	43.0	6.9	33.5	4.2
Sajha & Agricultural Development Bank	20.1	3.2	13.9	1.7
Sajha & Commercial Banks	0.6	0.1	3.0	0.4
Sajha, Agricultural Development Bank & Commercial Banks	0.3	-	0.0	0.0
Sajha, Commercial Banks Agricultural Development Bank & Non-institutional	0.3	-	1.0	0.1
Total borrowers from Sajha	64.3	10.2	51.4	6.4
Agricultural Development Bank only	205.0	32.9	228.0	28.5
Sajha & Agricultural Development Bank	20.1	3.2	13.9	1.7
Agricultural Development Bank & Commercial Banks	2.3	0.4	5.0	0.6
Sajha, Agricultural Development Bank & Commercial Banks	0.3	-	0.0	0.0
Sajha, Commercial Banks Agricultural Development Bank & Non-institutional	0.3	-	1.0	0.1
Total borrowers from Agricultural Development Bank (ADB)	228.0	36.5	247.9	30.9
Commercial Banks only	44.6	7.2	35.0	4.4
Agricultural Development Bank & Commercial Banks	2.3	0.4	5.0	0.6
Sajha & Commercial Banks	0.6	0.1	3.0	0.4
Sajha, Agricultural Development Bank & Commercial Banks	0.3	-	0.0	0.0
Sajha, Commercial Banks Agricultural Development Bank & Non-institutional	0.3	-	1.0	0.1
Total borrowers from commercial banks	48.1	7.7	44.0	5.5

TABLE 14.4: NUMBER AND PERCENT OF HOLDINGS WITH AGRICULTURAL CREDIT BY SOURCE OF CREDIT AND SIZE OF HOLDING, NEPAL, 2001/02

Size of holding	Institutional source		Non-institutional source		All holdings	
	Holdings ('000)	Percent	Holdings ('000)	Percent	Holdings ('000)	Percent
Total	319.4	9.5	481.9	14.3	3,364.1	100.0
No Land	0.6	2.2	4.2	15.8	26.7	100.0
With Land	585.1	17.5	929.2	27.8	3,337.4	100.0
Under 0.1 ha	11.0	4.2	33.9	13.0	260.5	100.0
0.1 - 0.2 ha	17.6	5.1	56.0	16.2	346.1	100.0
0.2 - 0.5 ha	67.9	7.0	156.6	16.1	972.3	100.0
Small	96.5	6.1	246.5	15.6	1,578.9	100.0
0.5 - 1.0 ha	88.4	9.7	131.4	14.3	915.7	100.0
1.0 - 2.0 ha	81.4	13.8	73.7	12.5	588.6	100.0
Medium	169.8	11.3	205.1	13.6	1,504.3	100.0
2.0 - 3.0 ha	29.0	18.5	17.8	11.3	157.0	100.0
3.0 - 4.0 ha	11.5	22.3	4.6	8.9	51.6	100.0
4.0 - 5.0 ha	4.8	23.9	1.6	8.1	20.2	100.0
5.0 - 10.0 ha	6.3	29.4	1.9	8.9	21.6	100.0
10.0 ha and over	0.9	23.4	0.2	5.1	3.8	100.0
Large	52.5	20.7	26.1	10.3	254.2	100.0

CHAPTER 15
CHARACTERISTICS OF AGRICULTURAL HOLDERS AND AGRICULTURAL HOLDINGS

At the national level 91.9 percent of the holdings had male holders and 8.1 percent had female holders in 2001/02. The female holders increased from 6.4 percent in 1991/92 to 8.1 percent in 2001/02 and relatively the male holders decreased to 91.9 percent during the same period.

There seems to be marked difference between the size of holding operated by male and female holder. The average size of holdings operated by female holders in 2001/02 was 0.53 hectares per holding while that of the male holders had much higher average of 0.81 hectares per holdings.

The average sizes of holding in 2001/02 was lower than that in 1991/92.The female holders in 2001/02 had an average size of 0.66 hectare and male had an average of 0.98 hectares per holdings. For both the sex, the average size of holding was 0.96 in 1991/92.

At the national level, 78.2 percent of the total holdings reported that their agricultural produce was used only for household consumption while 21.6 percent of the holdings used for both purposes-consumption and sale.

In 2001/02 about 39.8 percent of the total holdings reported that their agricultural produce was sufficient to feed the household throughout the agricultural year while some 60.2 percent of the total holdings reported that their produce was insufficient to feed the household for the whole year.

The information obtained on the area of soil type in 2001/02 agricultural census is: the loam comprised of 884.7 thousand hectares, sandy soil comprised of 589.5 thousand hectares and clay soil comprised of 532.5 thousand hectares which accounts for 33.3 percent, 22.2 percent and 20.1 percent respectively of total land. The silt and clay loam type of soil are not much prevalent as they cover only 6.3 percent and 5.5 percent of the total land.

Table 15.0 Summary Statistics

Description	1991/92	2001/02
A. Percentage of Male Agricultural holders	93.6	91.9
Percentage of Female Agricultural holders	6.4	8.1
B. Average size of Male holdings	0.98	0.81
Average size of Male holdings	0.66	0.53
C. Use of produce of the holdings (%)		
a. Home consumption	-	78.2
b. Home consumption and sale both	-	21.8
D. Sufficiency / Insufficiency of agricultural produce (%)		
a. Sufficient to feed household	-	39.8
b. Insufficient to feed household	-	60.2
E. Area of holding by soil type (%)		
a. Sand	-	22.2
b. Loam	-	33.3
c. Silt	-	6.3
d. Clay	-	20.1
e. Clay Loam	-	5.5

15.1 Characteristics of agricultural holders

This chapter presents some characteristics of agricultural holders in Nepal and additional information about agricultural holdings that were not discussed in the previous chapters of this report. For the first time in the history of agriculture census taking in Nepal, additional information were collected on the main use of produce of holding, sufficiency and insufficiency of agricultural produce to gauge food security including coping mechanism if agricultural produce was insufficient , headship of household, holding with hired manager, soil type and color, land made uncultivable due to flood or soil erosion and ethnicity of the agricultural holders. The analyses of the additional information gathered are included in this chapter.

An agricultural holder for the purpose of the census is the person in the agricultural holding who makes major decisions regarding the use of resources and has technical and economic responsibility for the holding. He/she exercises management controls over the operations of the holding and may undertake directly or delegate the day-to-day supervision of the operations of the holding.

In Nepal, the agricultural holder is usually the same person as the household head. The agricultural holder was identified on the basis of the person acknowledged by household members as the primary decision-maker on matters relating to the operations of the holding.

On the other hand, an agricultural holding, for the purpose of the census, is defined as an economic unit of agricultural production under single management comprising all livestock and poultry kept and all land used wholly or partly for agricultural production purposes. A holding was considered to be an agricultural unit of production if it satisfies any of the following conditions:

- having an area under crops of at least a quarter of ropani (or four annas) or one matomuri in Hill or Mountain districts (0.01272 hectares) or at least eight dhur (0.01355 hectares) in Tarai; or,
- keeping at least two heads of cattle or buffaloes; or,
- keeping at least five heads of sheep or goats; or,
- keeping at least 20 heads of poultry; or,
- keeping any combination of livestock and poultry equivalent to 2 animal units.

The above definitions of an agricultural holder and agricultural holding may serve as a backgrounder in understanding the census results that are presented.

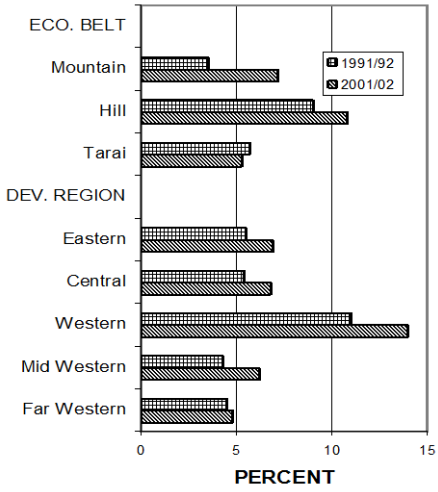
15.2 Sex of holder

Of the 3.36 million agricultural holders in 2001/02, there were 271,500 female holders representing 8.1% of the total. This is 1.7 percentage points higher than the proportion of female holders in 1991/91, which was 6.4% of the total holdings, see TABLE 15.1.

In terms of number, there was an increase of holdings operated by females from 175,600 in 1991/92 to 271,500 holdings, an increase in the number of female holders by 54.6% in a span of ten years.

Hill belt reported the highest percentage of female holders in 2001/02, which was 10.8% of the total holdings followed by Mountain belt with 7.2%. Tarai belt reported the lowest percentage of 5.3% but the number of female holders is much more than those in Mountain belt, which was only 21,400 female holders compared with 78,300 in Tarai, see TABLE 15.3

FIGURE 15.1: FEMALE HOLDERS, 1991/92 AND 2001/02

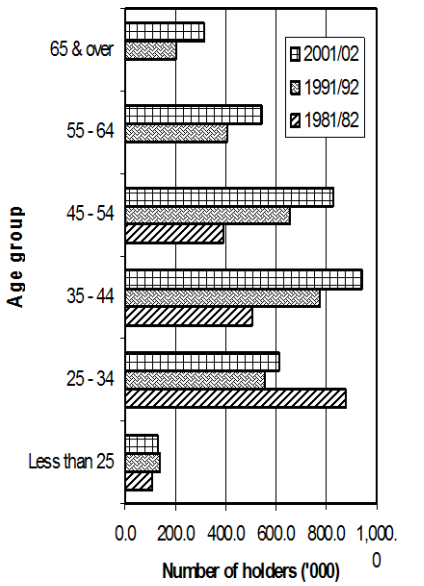


Western region reported the highest proportion of female holders among development regions at 14% and also the highest number of 100,000 female holders followed by Eastern region with 6.9% and Central region with 6.8%. Mid-Western region reported a bit lower at 6.2% and Far-Western region reported the least proportion of 4.8%., see TABLE 15.5.

15.3 Age of holder

The modal age of the holders is on the rise. In 1981/82 the modal age was in the age group 25-34 where 40% of the holders belong. The median age during this period was 35.12 years. In 1991/92, the modal age shifted to age group 35 – 44 where

FIGURE 15.2 HOLDERS BY AGE, NEPAL, 1981-2001



28.3% of the holders belong and those above 45 consisted of 46.3%. The median age was 43.57 years, which is 24% higher than ten years ago.

In 2001/02, the modal age falls in the same age group as in 1991/92 but the percentage of holders belonging to this group was only 28%, which was a little bit lower than in 1991/92 but those in the age group above 45 was higher (50.1%). The median age was also a little bit higher at 44.92 years, an increase of only 3.1% over that of 1991/92.

The modal age for both the male and female holders is the same, 35 – 44 age group. However, the median age of the female holders is higher, which was 54.5 years compared with only 44.88 years for the male holders, a difference of almost 10 years. This suggests that women have to be elderly to become a holder.

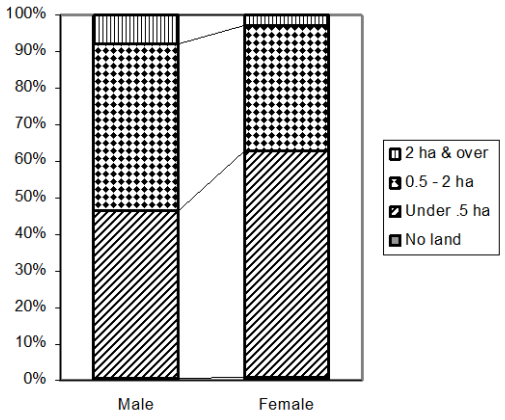
The three belts exhibited the same modal age group of 35-44 years, see TABLE 15.4. The same holds true for the five development regions where the modal age

group was also 35-44 years, see TABLE 15.6.

15.4 Size of holding per holder

The average size of holdings operated by females in 2001/02 was 0.53 hectare per holding while that of the male holders reported a much higher average of 0.82 hectare per holding. The overall average of the holdings for both sexes was 0.79 hectare, see TABLE 15.1. These average sizes were lower than those in 1991/92 where the female holders then had an average size of 0.66 hectare while the male holder had an average size of 0.98 hectare per holding. For both sexes, the average size of the holding was 0.96 hectare.

FIGURE 15.3: MALE AND FEMALE HOLDERS BY SIZE OF HOLDING, NEPAL, 2001/02

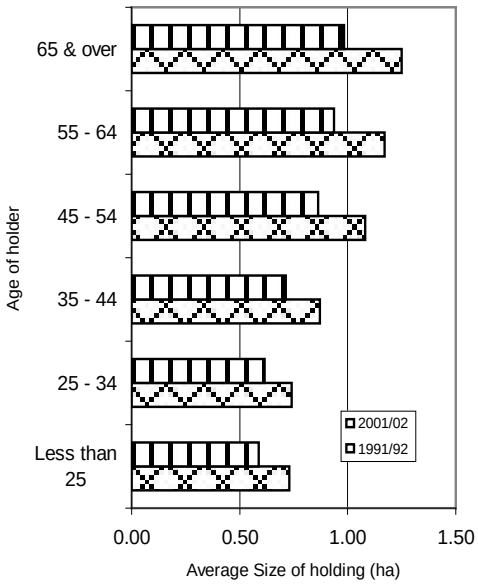


Among the three broad groups of holding sizes, holdings with less than 0.5 hectare (small holdings) reported the highest proportion of female holders at 10.7%. Large holdings of at least 2 hectares reported the lowest proportion of female holders, which were only 3.1% of the total.

Among female holders, 62% had a holding area of less than 0.5 hectare while only 2.9% had large holdings. There were 2,500 holders or 0.9% that did not have any land.

Among male holders, large holdings (at least 2 hectares) comprised 8% while holdings without land consisted of 0.8%. Holders of small holdings with an area of less than 0.5 hectare and holdings with an area of 0.5 hectare to less than two hectares

FIGURE 15.4: AGE OF HOLDER BY AVERAGE SIZE OF HOLDING, NEPAL, 1991-2001



(medium size) had an equal share of 45.6% each. The holders of large holdings reported a higher modal age group of 45-54 than the small and medium-sized holdings whose modal age group was 35-44. The highest median age of 50.5 years was also reported by the holders of large holdings compared with 42.6 years for holders of small holdings. The medium-sized holdings had a median age of 46.7 years. Based on this trend we can say that there is a positive relationship between the age of the holder and the size of the holding, i.e. as the size of the holding increases, the median age of the holder also increases.

15.5 Headship of household

The holder of an agricultural holding is most likely the head of the household. This

is borne by the fact that 97.5% of the holders were the head of their households. There was a slight difference in the headship of households in holdings with land and without land where 98% of the holders without land holdings were household heads compared with 97.5% holders with land holdings were household heads. Only 2.5% of the households reported "other" person than the holder as the head of the household see TABLE 15.9. The female holders reported a lower proportion of being a household head (94.3%) than the male holders of whom 97.7% were reported as household head. Holdings without land reported a higher proportion of the holders being household head (98.4%), see TABLE 15.9.

The percentage of male holders being household head decreases as the size of their holding increases. The reverse was observed among female holders, i.e. as the area of the holding increases, the percentage of female holders as household head also increases

Among ecological belt, Mountain belt holders reported the highest incidence of being household head (98.7%) compared with Hill belt and Tarai belt holders with 97.4% and 97.3%, respectively.

For development regions, only Mid-Western region holders reported more than 98% as head of the household. Far-Western region holders reported headship of the household above the national average (97.6%) while the other three regions had proportion of holders being head lower than the national average, see TABLE 15.10.

15.6 Hired manager

A hired manager is a person who takes technical and administrative responsibilities in the management of a holding on the holder's behalf. He/she supervises the day to day operations of the holding including the decisions made attendant to such operations including managing and supervising the work of hire labour. He/she may be paid in cash or in kind for his/her compensation.

There were only 7,837 holdings, equivalent to only 0.23% of the total, with a hired manager in 2001/02. Of this number, 104 holdings or 1.33% were without land and 7,733 holdings or 98.67% were with land.

By size of holding, 2,615 belonged to less than 0.5 hectare land holdings which is 33.8% of the total; 2,108 belonged to the large holdings which is about 27.3% and the rest, 3,010 holdings belonged to the medium-sized land holdings. Furthermore, the large holdings reported the highest percentage with hired manager relative to the total, which was 0.83% and the small holdings reported the lowest with 0.17% of the total.

The proportion of the female holders with hired managers was higher than the proportion of male holders to the total, (0.32% vs. 0.23%).

Tarai belt holdings reported the highest percentage of hired managers which was 66.7% of the total hired managers, followed by Hill belt with 2,136 hired

managers or 27.3% of the total hired managers. Proportionally, relative to the region's total, Mountain belt reported a higher percentage of 0.16% compared with 0.13% for Hill belt.

Eastern region reported the highest proportion of holdings with hired manager (30.7%) followed by Central region with 24.2%.

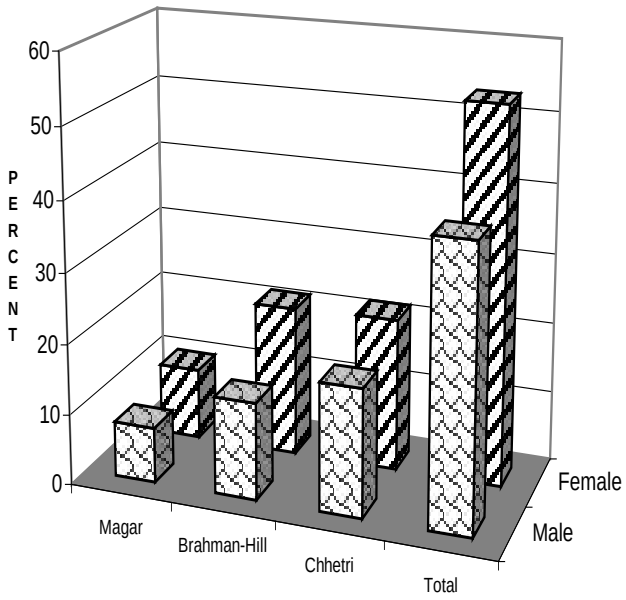
15.7 Ethnicity

The census of agriculture was able to record more than 85 different ethnic groups with sizeable responses from the holders found in the different geographic belts and regions of Nepal. The top three ethnic groups that were common to both the male and female holders in 2001/02 are: Chhetri, Brahman-Hill and Magar.

The female holders reported a higher proportion belonging to Chhetri ethnic group, which was 21.7% of the total female holders compared with 18.0% for the male holders. The second most popular ethnic group reported by the female holders is Brahman-Hill with 21.3% compared with 13.7% for the male. The third ranking ethnic group is Magar with the female holders reporting a higher percentage of 10.16% compared with 7.83% reported by the male holders. For these three ethnic groups, the female holders accounted for a total of 53.1% while that of the male holders, only 39.6%.

The fourth ranking ethnic group among female holders is Kami with 6.2% while that of the male holders is Tamang-Murmi with 6.34%. This ethnic group is the fifth most popular reported by female holders with 5.8% while the fifth ranking ethnic

FIGURE 15.5: TOP THREE ETHNIC GROUPS OF NEPAL BY SEX OF HOLDER, 2001/02



group among male holders is Tharu with 6.0%.

As a whole, 65.1% of the total female holders belong to only 5 major ethnic groups of the more than 85 ethnic groups of Nepal while majority (52%) of the male holders belong to the 5 top-ranking ethnic groups recorded. For other ethnic groups, see TABLE 15.11.

15.8 Ethnicity in ecological belt

The top 5 ethnic groups reported by holders in the three ecological belts consisted more than half of the total male and female holders except in Tarai belt where the top 5 ethnic groups reported by the males consisted only of 49.8% of the total.

The top 4 ethnic group reported in Mountain belt both for male and female holders consisted of more than 50% of the holders belonging to the following ethnic group: Chhetri, Tamang/Murmi, Brahman-Hill, and Kami. The fifth ranking group among male holders is Thakuri with 5.1%

and the fifth group reported by the females is Gurung with 5.8%.

For the Hill belt holders, the four ethnic groups reported both by the male and female holders were: Chhetri, Brahman-Hill, Magar, and Kami. The fifth most popular among the male holders was Tamang/Muri and for the female holders, Newar ethnic group.

In Tarai belt the ethnic groups reported by the male holders differ in importance as compared with the report of the female holders. In fact, the Tarai belt ethnic group ranking is not similar with the other belts. The male holders reported the following ethnic group according to popularity: Tharu (13%); Brahman-Hill (11.3%); Yadav, Ahir, Gwala (10.1%); Chhetri (9.4%); and Musalman, Muslim (6.0). For the female holder, the ethnic groups according to the order of popularity were: Brahman-Hill (22.7%); Chhetri (15.4%); Magar (6.9%); Tharu (5.2%); Yadav, Ahir, Gwala (5.%).

15.9 Ethnicity in development region

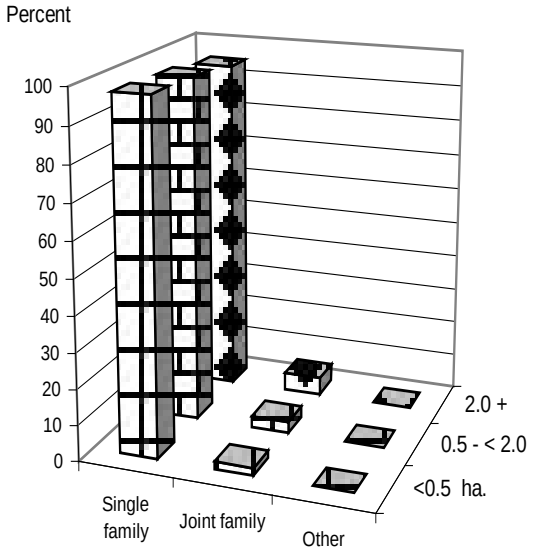
Male and female holders in Western region belong to the same top five ethnic groups, namely: Brahman-Hill, Magar, Chhetri, Kami and Gurung. In contrast, male and female holders in Far-Western region reported very different ethnic grouping for the top five. The male holders belong to a different ethnic group not only from the female holders within the region but also with other development regions. These ethnic groups are: Teli (44.7%); Sikh/Panjavi (13.8%); Dhanuk (13.1%); Gaine/Gandharbha (10.9%); and Thakali (4.8%). The female holders reported the following ethnic groups which are similar to the other regions except one: Chhetri (45.3%); Brahman-Hill (16.2%); Kami ((14.1%); Thakuri (6.1%) and Damai/Dholi (3.4%). The total holders belonging to the top five ethnic groups in Far-Western region consisted of 85% for the female holders and 87.3% for the male holders.

For the other three development regions, four out of the top five ethnic groups are the same for the male and female holders, see TABLE 15.13.

15.10 Legal status of holding/holder

The term legal status is not necessarily confined to the legal characteristics of the holder but concerns broader aspects of identifying specific types of holdings. In Nepal, the holding is operated as a family enterprise where the household members

FIGURE 15.6: LEGAL STATUS OF HOLDING BY SIZE OF HOLDING, NEPAL, 2001/02



assist in carrying out the agricultural operations. This is supported by the fact that 97.2% of the total holdings were a single family-operated enterprise. Only 2.8% of the holdings were operated jointly

with other families while less than 0.1% (0.04%) under other arrangements.

For holdings without land, the proportion of single family status of operation was lower at 96.4% compared with 97.2% for the holdings with land. By size of holding, the large holdings registered a lower percentage of single family type of legal status. Correspondingly, the proportion of large holdings being managed jointly with other families is higher (5.1%). The same trend is observed on the legal status of holdings operated both by females and males where the proportion of single family operating the holding tends to decrease as the size of the holding increases.

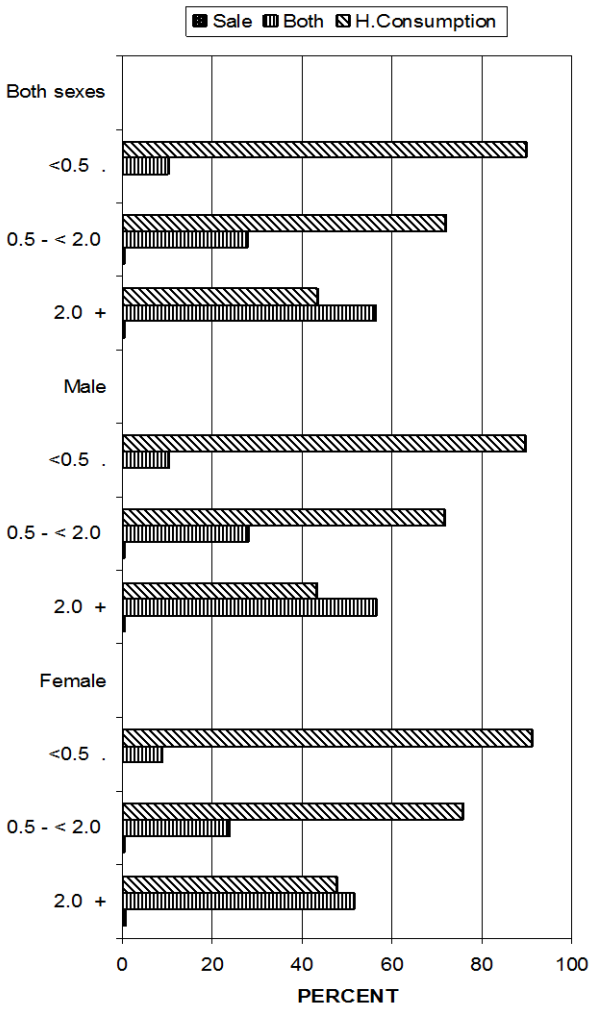
Among the three belts, Mountain belt holders reported the highest proportion of single family legal status of 98.9% . Tarai belt reported the lowest proportion of 96.8%. Correspondingly, it reported the highest proportion of joint family status of 3.1%. 'Other' legal status is negligible in the three belts.

Among the development regions, Far-Western region reported the lowest percentage of single family legal status at 95.3% and the highest percentage of holdings with joint family status at 4.7%. Western region reported the highest proportion of holdings under single family status at 98.1% followed by Central region at 97.8%. Eastern and Mid-Western regions had the same proportion of holders under single family status in the operation of the holding.

15.11 Main use of produce of holding

A question was asked on the purpose of production of the holding whether it is mainly for sale or for home consumption. Mainly means more than half of the agricultural production of the holding is for sale or for home consumption. If the purpose is equal in usage of the agricultural produce the response is 'Both'.

FIGURE 15.7: MAIN USE OF PRODUCE BY SEX OF HOLDER AND SIZE OF HOLDING, NEPAL, 2001/02



At the national level, 78.2% of the holdings responded that their agricultural production was mainly for home consumption. These are the holdings that are engaged in subsistence farming. Only 0.2% or 8,091 holdings of the total reported their produce to be mainly for sale while 21.6% of the holdings was both for sale and for home consumption.

Most small holdings produce for home consumption. It may be noted, however, that a greater portion of the agricultural produces of large farms (2 hectares and over in size) were for sale and home consumption with the following proportion: large male holdings, 56.5% and large female holdings, 51.6%.

It is also observed that the proportion of holdings without land in terms of home consumption is lower for the female holders ((74.3%) than the male holders (82.1%). This trend is also true for holdings that are both selling and using their produce for home consumption where the proportion among female holders was higher (24.6%) than the male holders of holdings without land (15.9%), see TABLE 15.16.

Tarai belt reported the greatest number of holdings that the agricultural produce is mainly for sale. Out of the 8,091 holdings that reported their produce mainly for sale, 4,727 holdings or 58.4% were from Tarai belt. Of this number, only 261 holdings or 5.5% of those in Tarai belt were operated by females. It may be significant to note, however, that among female holders, the hill belt reported the highest number of female holders who dispose of their produce mainly for sale. In 2001/02 there were 457 female holders who disposed of their agricultural produce mainly for sale. This is 63.1% of the total female holders who dispose of their total holdings in Nepal whose main use was for sale, see TABLE 5.17.

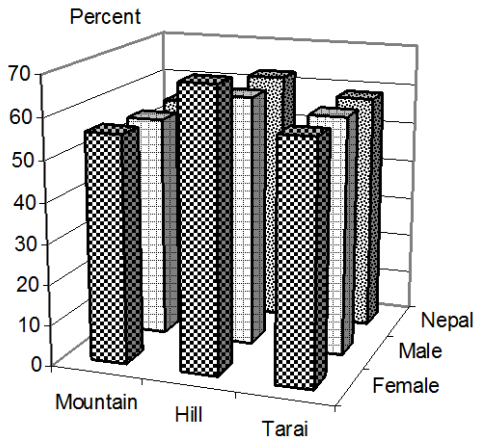
Among development regions, majority of the holdings that disposed of their agricultural produce mainly for sale were in Central and Eastern regions although proportionally, Mid-Western region reported the highest proportion of 0.4% to the total number of holdings in this region.

15.12 Sufficiency of agricultural produce

The data that are presented here were based on responses of holdings to the questions asked relative to the sufficiency of agricultural produce for the consumption of the households. If the response to the question was not sufficient, additional questions were asked on the duration of insufficiency and the manner of coping with insufficiency.

In 2001/02, six out of 10 holdings reported that their agricultural produce was not sufficient to feed their household until the next harvest. The situation among female holders is worse since 65.1% of the total female holders reported the insufficiency of agricultural produce from their holdings during the year.

FIGURE 15.8: HOLDINGS WITH INSUFFICIENT AGRICULTURAL PRODUCE BY SEX OF HOLDER, NEPAL, 2001/02



By ecological belt, the holders in the Hill belt reported the highest proportion of food

insufficiency from their holdings, which was about 62% compared with 56% in Mountain belt and 59% in Tarai.
Among female holders, the proportion of insufficiency of agricultural produce was even higher at 69% in Hill belt compared with 62% among the male holders. The insufficiency of produce in Tarai for the male and female holders was at the same level of about 59%. In the Mountain belt, a one percentage point difference was noted in favor of the male, i.e. the male holders reported a lower figure of insufficiency compared with the female holders, see TABLE 15.18.

Among the development regions, Mid-Western region reported the lowest percentage with insufficiency of agricultural produce to feed their family, which is 52.1% and second to the lowest, Far Western region with 53.7%. Western region reported the highest incidence of insufficiency of produce at 66.1%. The insufficiency is even much higher for female holders at 70.8%.

15.13 Number of months insufficient

Of the 2 million holdings with insufficient agricultural produce to feed their families, 43.3% said their insufficiency lasted for 4-6 months while 17.6% stated that the duration of insufficiency was from 10 to 12 months. By sex of holders, the female holders reported a higher percentage of those who had insufficiency of produce from the holding at 19.6% compared with 17.5% for the males. For the rest of the holders, the duration of insufficiency is similar for the 1-3months, 4-6 months and 7 to 9 months, see TABLE 15.18.

By ecological belt, Tarai belt holders reported the highest percentage of holdings with 10 to 12 months' duration of insufficiency (26.6%). A higher percentage among the female holders (31.5%) was observed having insufficiency of produce from the holding in Tarai belt compared with only 10.8% in Mountain belt and 15.9% in Hill belt area.

Female holdings in Eastern development region reported the highest proportion of holdings with the longest duration of insufficiency of 10 to 12 months at 23.2%, which is higher than the nationwide average of 17.6% and among all female holders with insufficiency average of 19.6%. It may be significant to note that the proportion of male holders with duration 9 to 12 months of insufficiency of produce was 0.2 percentage point higher than that of the female holders in Eastern region.

15.14 Manner of coping with insufficiency

Income within the district was reported by more than two-thirds of the holders with insufficiency of agricultural produce from the holding. The second mechanism to cope with insufficiency of produce to feed the family is earning income outside of Nepal with 13.1% responses.

By sex of holder, the female holders reported a higher percentage of getting income from outside Nepal with 21.1% compared with only 12.4% for the male holders. Other coping mechanism resorted to by holders both the males and females was borrowing with more than 10%; income within Nepal but outside the district

with 8.6% of the total holdings with insufficiency.

Among female holders, those in Hill Belt reported the highest percentage of coping with the insufficiency of produce through income outside Nepal 2ith 24.7% compared with only 7.5% among those in the Mountain belt area and 15.4% in Tarai belt. However, Mountain belt female holders reported the highest proportion of resorting to income from district to augment the deficit with 72.5% compared with 68.1% in Hill belt and 70.8% in Tarai.

15.15 Soil type and color

Another important information that was gathered in the Census of Agriculture for the first time is the type of soil and color of the soil. These soil characteristics along with other information such as climate, rainfall and water availability form an important basis for agricultural planning. The soil type indicates the texture of the soil. Depending upon their mixture in the soil, the soil type can be divided into five or more groups, namely: sand, loam, silt, clay and clay-loam. In agriculture, the texture of the soil determines to a large extent what kind of crops can best be planted to give the best yield. Usually the texture of the soil determines its water holding capacity.

The information on the color of the soil to a certain extent can assist in assessing the origin of the topsoil.
The number of holdings reporting the type and color of soil may exceed the total number of holdings because within a holding, some parcels may have different types of soil.

The most popular soil type in Nepal is loam with almost 60% or 2 million holdings reporting. The second and third most commonly reported soil types were sand and clay with 43.3% and 39.1%, respectively

In terms of area, loam comprised of 884,697 hectares of land or 33.3% followed by sandy soil with 589,455 hectares or 22.2% of the total and clay soil with 532,488 hectares or 20.1% of the total land holding area.

The types of soil found in the three belts are similar even in terms of popularity although there is some slight differences in the percentages reported. The trend in the area by type of soil is also similar.
The prevailing color is brown where 62.2% reported followed by black with 55.9%. Red soil type is not significant in number Tarai belt where only 7.3% of the holding reported with an area of 3.1% of the total compared with 38.6% of red soil type in Hill belt with and area of 19.6% of the total area in this belt, see TABLE 15.20.

The three dominant soil types in the 5 development regions are the same, they only differ in the number of holdings reporting and the area of coverage of these three soil types. The three dominant soil types for the 5 regions in the order of reporting holders are: Eastern, Central, Mid-Western and Far Western regions-loam, sand and clay; and Western region – loam, clay and sand. The area of coverage is also in the same order of importance as in the soil type in the 5 regions, see TABLE 15.22.

15.16 Uncultivable area due to flood/soil erosion

The last characteristic of the holding that was gathered in the Census of Agriculture is the area made uncultivable due to flood or soil erosion. Take note that this information is closely related to the information on soil type and the terrain of the land holdings.

In agricultural year 2001, there were only 156,883 holdings that were seriously affected by floods or soil erosion. This number is 4.66% of the total holdings in Nepal. Holdings with insignificant area of land had also been subjected to these natural calamities and there were 215 holdings or less than 1% of the total. Of the holdings with land, there were 156,668 holdings affected that comprised 4.69% of the total land holdings.

By size of holdings, the large holdings reported the highest proportion of being victims of these natural calamities but the area affected was highest proportionally among the small land holdings, see TABLE 15.23.

By ecological belt, Tarai belt reported the highest proportion of the number of holdings affected by these natural calamities.

Furthermore, the total area made uncultivable was also reported the highest in Tarai, see TABLE 15.24.

By development regions, Eastern, Central and Western regions reported a little more than 5% of the total land holdings as the affected holdings with uncultivable area due to floods and soil erosion.

TABLE 15.1: NUMBER AND PERCENT OF HOLDERS BY SEX AND BY AGE, NEPAL, 1981/82, 1991/92 AND 2001/02

Sex and Age	No. of holders (' 000)			Percentage distribution			Ave. holding size (ha)	
	1981/82	1991/92	2001/02	1981/82	1991/92	2001/02	1991/92	2001/02
SEX OF HOLDER								
Male	2,055.1	2,560.5	3,092.6	93.7	93.6	91.9	0.98	0.81
Female	138.8	175.6	271.5	6.3	6.4	8.1	0.66	0.53
Total holders	2,194.0	2,736.1	3,364.1	100.0	100.0	100.0	0.96	0.79
AGE OF HOLDER								
Less than 25	108.2	139.6	128.1	4.9	5.1	3.8	0.73	0.59
25 – 34	877.4	556.6	612.0	40.0	20.3	18.2	0.74	0.62
35 – 44	505.3	774.6	940.6	23.0	28.3	28.0	0.87	0.71
45 – 54	390.5	656.1	827.1	17.8	24.0	24.6	1.08	0.86
55 – 64	] 312.5	406.8	541.5	] 14.2	14.9	16.1	1.17	0.94
65 and over		202.4	314.9		7.4	9.4	1.25	0.98
Total holders	2,194.0	2,736.1	3,364.1	100.0	100.0	100.0	0.96	0.79

TABLE 15.2: NUMBER OF HOLDERS BY AGE AND SEX, NEPAL, 2001/02

Age of holder	Sex of holder						Sex Ratio (Male per 100 female)
	Males		Females		Both sexes		
	Number ('000)	%	Number ('000)	%	Number ('000)	%	
Less than 25	116.6	3.8	11.6	4.3	128.1	3.8	1007
25 – 34	562.5	18.2	49.4	18.2	612.0	18.2	1138
35 – 44	869.0	28.1	71.6	26.4	940.6	28.0	1213
45 – 54	763.7	24.7	63.4	23.3	827.1	24.6	1205
55 – 64	494.9	16.0	46.6	17.2	541.5	16.1	1063
65 and over	286.0	9.2	28.9	10.7	314.9	9.4	989
Total holders	3,092.6	100.0	271.5	100.0	3,364.1	100.0	1139

TABLE 15.3: NUMBER AND PERCENT OF HOLDERS BY SEX AND ECOLOGICAL BELT, NEPAL, 2001/02

Sex of holder	Ecological belt			Nepal
	Mountain	Hill	Tarai	
	Number of holders ('000)			
Male	276.9	1,414.6	1,401.2	3,092.6
Female	21.4	171.8	78.3	271.5
Total holders	298.2	1,586.4	1,479.5	3,364.1
	Percent			
Male	92.8	89.2	94.7	91.9
Female	7.2	10.8	5.3	8.1
Total holders	100.0	100.0	100.0	100.0

TABLE 15.4: NUMBER OF HOLDERS BY AGE AND ECOLOGICAL BELT, 2001/02

Age of holder	Ecological belt			Nepal
	Mountain	Hill	Tarai	
		Number of holders ('000)		
Less than 25	11.8	59.2	57.1	128.1
25 - 34	52.9	288.1	271.0	612.0
35 - 44	84.9	428.9	426.7	940.6
45 - 54	77.9	381.0	368.1	827.1
55 - 64	48.3	264.7	228.5	541.5
65 and over	22.5	164.4	128.0	314.9
Total holders	298.2	1,586.4	1,479.5	3,364.1
		Percent		
Less than 25	3.9	3.7	3.9	3.8
25 – 34	17.7	18.2	18.3	18.2
35 – 44	28.5	27.0	28.8	28.0
45 – 54	26.1	24.0	24.9	24.6
55 – 64	16.2	16.7	15.4	16.1
65 and over	7.5	10.4	8.7	9.4
Total holders	100.0	100.0	100.0	100.0

TABLE 15.5 NUMBER AND PERCENT OF HOLDERS BY SEX AND DEVELOPMENT REGION, NEPAL, 2001/02

Sex of holder	Development region					NEPAL
	Eastern	Central	Western	Mid Western	Far Western	
			Number of holders ('000)			
Male	754.1	965.4	615.8	440.5	316.9	3,092.6
Female	56.0	70.4	100.0	29.1	16.1	271.5
Total holders	810.0	1,035.8	715.8	469.5	333.0	3,364.1
			Percent			
Male	93.1	93.2	86.0	93.8	95.2	91.9
Female	6.9	6.8	14.0	6.2	4.8	8.1
Total holders	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 15.6: NUMBER OF HOLDERS BY AGE AND BY DEVELOPMENT REGION, NEPAL, 2001/02

Age of holder	Development region					Nepal
	Eastern	Central	Western	Mid Western	Far Western	
			Number of holders ('000)			
Less than 25	29.5	35.4	21.6	24.1	17.5	128.1
25 – 34	146.6	186.7	107.6	102.4	68.8	612.0
35 – 44	226.8	292.9	188.0	138.1	94.7	940.6
45 – 54	202.3	253.6	177.6	112.0	81.5	827.1
55 – 64	129.5	167.0	129.0	66.3	49.7	541.5
65 and over	75.4	100.2	92.0	26.7	20.7	314.9
Total holders	810.0	1,035.8	715.8	469.5	333.0	3,364.1
			Percent			
Less than 25	3.6	3.4	3.0	5.1	5.3	3.8
25 – 34	18.1	18.0	15.0	21.8	20.7	18.2
35 – 44	28.0	28.3	26.3	29.4	28.4	28.0
45 – 54	25.0	24.5	24.8	23.9	24.5	24.6
55 – 64	16.0	16.1	18.0	14.1	14.9	16.1
65 and over	9.3	9.7	12.9	5.7	6.2	9.4
Total holders	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 15.7 NUMBER AND PERCENT OF HOLDERS BY SEX AND SIZE OF HOLDING, NEPAL, 2001/02

Sex of holder	Size of holding				
	No land	Less than 0.5 ha	0.5 - 2.0 ha	2.0 ha and over	Total
			Number of holders ('000)		
Male	24.2	1,410.6	1,411.5	246.4	3,092.6
Female	2.5	168.3	92.9	7.8	271.5
Total holders	26.7	1,578.9	1,504.3	254.2	3,364.1
			Percent		
Male	90.6	89.3	93.8	96.9	91.9
Female	9.4	10.7	6.2	3.1	8.1
Total holders	100.0	100.0	100.0	100.0	100.0
Male	0.8	45.6	45.6	8.0	100.0
Female	0.9	62.0	34.2	2.9	100.0
Total holders	0.8	46.9	44.7	7.6	100.0

TABLE 15.8: NUMBER AND PERCENT OF HOLDERS BY AGE AND SIZE OF HOLDING, NEPAL, 2001/02

Age of holder	Size of holding				
	No land	Less than 0.5 ha	0.5 - 2.0 ha	2.0 ha and over	Total
			Number of holders ('000)		
Less than 25	1.2	76.4	45.6	4.9	128.1
25 – 34	5.5	350.4	228.8	27.3	612.0
35 – 44	8.7	470.7	406.9	54.2	940.6
45 – 54	6.6	349.5	398.6	72.4	827.1
55 – 64	3.7	208.1	272.3	57.4	541.5
65 and over	1.1	123.7	152.1	38.0	314.9
Total holders	26.7	1,578.9	1,504.3	254.2	3,364.1
			Percent		
Less than 25	4.4	4.8	3.0	1.9	3.8
25 – 34	20.4	22.2	15.2	10.7	18.2
35 – 44	32.7	29.8	27.0	21.3	28.0
45 – 54	24.6	22.1	26.5	28.5	24.6
55 – 64	13.8	13.2	18.1	22.6	16.1
65 and over	4.1	7.8	10.1	14.9	9.4
Total holders	100.0	100.0	100.0	100.0	100.0

TABLE 15.9: NUMBER OF HOLDINGS BY SEX OF HOLDER, HEADSHIP OF HOUSEHOLD AND HOLDING WITH HIRED MANAGER BY SIZE OF HOLDING, NEPAL, 2001/02

Size of Holding and Sex of holder	Total Number of Holdings	%	Household headship				Hired Manager			
			Holder as Head of Household	% to total	Other Person as Head of Household	% to total	Holdings with Hired Manager	% to total	Holdings without Hired Manager	% to total
Both Sexes	3,364,139	100.0	3,278,625	97.5	85,514	2.5	7,837	0.23	3,356,302	99.8
Holdings without land	26,700	100.0	26,161	98.0	538	2.0	104	0.39	26,596	99.6
Holdings with land	3,337,439	100.0	3,252,464	97.5	84,976	2.5	7,733	0.23	3,329,706	99.8
Less than 0.5 ha.	1,578,919	100.0	1,537,504	97.4	41,413	2.6	2,615	0.17	1,576,303	99.8
0.5 - < 2.0 ha.	1,504,323	100.0	1,467,667	97.6	36,656	2.4	3,010	0.20	1,501,312	99.8
2.0 ha and over	254,198	100.0	247,292	97.3	6,906	2.7	2,108	0.83	252,091	99.2
Male	3,092,632	100.0	3,022,713	97.7	69,918	2.3	6,973	0.23	3,085,659	99.8
Holdings without land	24,187	100.0	23,801	98.4	387	1.6	75	0.31	24,113	99.7
Holdings with land	3,068,445	100.0	2,998,913	97.7	69,532	2.3	6,898	0.22	3,061,547	99.8
Less than 0.5 ha.	1,410,590	100.0	1,379,410	97.8	31,182	2.2	2,169	0.15	1,408,420	99.8
0.5 - < 2.0 ha.	1,411,455	100.0	1,379,661	97.7	31,794	2.3	2,718	0.19	1,408,738	99.8
2.0 ha and over	246,398	100.0	239,842	97.3	6,556	2.7	2,009	0.82	244,387	99.2
Female	271,507	100.0	255,912	94.3	15,595	5.7	864	0.32	270,643	99.7
Holdings without land	2,512	100.0	2,361	94.0	152	6.1	29	1.15	2,483	98.8
Holdings with land	268,995	100.0	253,551	94.3	15,444	5.7	835	0.31	268,160	99.7
Less than 0.5 ha.	168,327	100.0	158,096	93.9	10,232	6.1	444	0.26	167,883	99.7
0.5 - < 2.0 ha.	92,868	100.0	88,006	94.8	4,861	5.2	293	0.32	92,575	99.7
2.0 ha and over	7,800	100.0	7,450	95.5	350	4.5	98	1.26	7,702	98.7

TABLE 15.10: AGRICULTURAL HOLDERS AS HEAD OF HOUSEHOLD AND HOLDINGS WITH HIRED MANAGER BY ECOLOGICAL BELT AND DEVELOPMENT REGION, NEPAL, 2001/02

Geographic area and Sex of holder	Holdings with holder as head of household	% to total	Holdings with other person as head of household	% to total	Total holdings	%	Holdings with a hired manager	% to total holdings
Nepal, Both Sexes	3,278,625	97.5	85,514	2.5	3,364,139	100.0	7,837	0.23
Ecological belt								
Mountain	294,472	98.7	3,751	1.3	298,223	100.0	475	0.16
Hill	1,544,586	97.4	41,820	2.6	1,586,406	100.0	2,136	0.13
Tarai	1,439,564	97.3	39,946	2.7	1,479,510	100.0	5,225	0.35
Development region								
Eastern	786,763	97.1	23,254	2.9	810,017	100.0	2,407	0.30
Central	1,008,660	97.4	27,167	2.6	1,035,827	100.0	1,899	0.18
Western	697,527	97.4	18,281	2.6	715,808	100.0	1,179	0.16
Mid-Western	460,583	98.1	8,944	1.9	469,527	100.0	1,236	0.26
Far -Western	325,089	97.6	7,871	2.4	332,960	100.0	1,115	0.33
Male holder	3,022,713	97.7	69,918	2.3	3,092,632	100.0	6,973	0.23
Ecological belt								
Mountain	273,741	98.9	3,110	1.1	276,851	100.0	470	0.17
Hill	1,384,207	97.9	30,398	2.1	1,414,604	100.0	1,757	0.12
Tarai	1,364,766	97.4	36,411	2.6	1,401,177	100.0	4,746	0.34
Development region								
Eastern	732,868	97.2	21,194	2.8	754,062	100.0	2,237	0.30
Central	945,088	97.9	20,328	2.1	965,416	100.0	1,777	0.18
Western	602,534	97.8	13,282	2.2	615,816	100.0	972	0.16
Mid-Western	432,633	98.2	7,832	1.8	440,465	100.0	962	0.22
Far -Western	309,590	97.7	7,282	2.3	316,872	100.0	1,025	0.32
Female holder	255,912	94.3	15,595	5.7	271,507	100.0	864	0.32
Ecological belt								
Mountain	20,733	97.0	639	3.0	21,372	100.0	6	0.03
Hill	160,380	93.4	11,422	6.6	171,802	100.0	380	0.22
Tarai	74,798	95.5	3,535	4.5	78,333	100.0	478	0.61
Development region								
Eastern	53,895	96.3	2,060	3.7	55,955	100.0	170	0.30
Central	63,573	90.3	6,837	9.7	70,411	100.0	123	0.17
Western	94,994	95.0	4,998	5.0	99,992	100.0	207	0.21
Mid-Western	27,949	96.2	1,113	3.8	29,062	100.0	274	0.94
Far -Western	15,500	96.3	588	3.7	16,088	100.0	90	0.56

TABLE 15.11: MALE AND FEMALE HOLDERS BY ETHNICITY AND BY ECOLOGICAL BELT , NEPAL, 2001/02

Ethnicity	Number of holders								
	Nepal			Mountain		Hill		Tarai	
	Total	Male	Female	Male	Female	Male	Female	Male	Female
Total	3,364,139	3,092,632	271,507	276,851	21,372	1,414,604	171,802	1,401,177	78,333
Badi	630	583	47	...	...	420	47	163	...
Bangali	134	134	...	16	...	...	...	117	...
Baniya	11,698	11,366	332	...	...	20	...	11,346	332
Bantar	3,116	3,116	...	...	...	...	...	3,116	...
Bhayu	230	192	38	32	17	76	22	84	...
Bhote	3,119	2,595	524	1,592	496	842	28	162	...
Bote	965	870	96	53	...	156	96	660	...
Brahamu	916	804	113	...	...	804	113	...	...
Brahman-Hill	482,475	424,643	57,832	28,872	2,357	237,363	37,688	158,408	17,787
Brahman-Tarai	15,927	15,532	395	12	...	43	...	15,477	395
Chamar, Harijan	33,356	32,497	859	6	...	117	...	32,375	859
Chepang	9,552	9,269	283	26	...	5,296	209	3,947	74
Chhantel	453	423	30	...	...	423	...	...	30
Chhetri	616,783	557,947	58,836	90,908	4,818	335,606	41,976	131,433	12,042
Chidimar	77	77	...	...	...	...	...	77	...
Chureto, Churaute	189	116	73	...	...	73	73	43	...
Damai/ Dholi	63,481	56,826	6,655	4,194	289	41,445	5,223	11,187	1,144
Danuwar	7,884	7,600	284	885	...	4,618	85	2,097	199
Darai	1,849	1,755	95	...	16	572	...	1,182	78
Dhanuk	23,594	23,087	507	...	...	551	55	22,536	451
Dhimal	2,096	1,969	127	17	...	20	20	1,933	107
Dhobi, Rajdhobi	11,578	11,107	471	17	31	115	35	10,975	406
Dhuniya	1,524	1,481	43	...	...	...	...	1,481	43
Dhusad/ Pasi	18,716	18,146	570	...	...	...	...	18,146	570
Dom	601	601	...	...	...	31	...	569	...
Dura	458	339	119	31		272	119	37	...
Gaine/ Gandarbha	871	751	120	...	17	542	66	209	37
Gangai	9,010	8,806	205	...	...	38	...	8,767	205
Gurung	80,249	68,302	11,947	7,725	1,438	49,168	8,188	11,409	2,321
Hajam (Thakur)	11,876	11,686	190	...	...	51	...	11,635	190
Halkhor, Mehattar	270	215	55	...	...	...	31	215	24
Haluwai/ Halwai	4,005	3,931	73	47	31	140	...	3,744	43
Jhagar/ Sangad	3,172	3,172	...	...	...	26	...	3,146	...
Jhangar (Orawon)	1,854	1,656	198	...	...	...	...	1,656	198
Jirel/ Surel	268	268	...	...	...	94	...	174	...
Kalwar	10,667	10,469	198	22	...	114	...	10,333	198
Kami	177,782	161,028	16,754	20,614	1,664	105,631	11,866	34,782	3,224
Kanu	9,587	9,416	171	...	...	...	...	9,416	171
Kayastha	6,601	6,161	439	85	...	296	67	5,781	372
Kewat/ Kewarath	17,733	17,353	380	...	...	265	...	17,088	380
Khatwe	14,184	13,921	263	29	...	...	...	13,892	263
Kisan	50	50	...	...	...	...	...	50	...
Koch, Koche	53	53	...	...	...	22	...	31	...
Koiri	25,734	25,076	658	...	...	...	...	25,076	658
Kumal/ Kumhal	11,489	10,190	1,298	482	...	5,237	1,138	4,471	160
Kumhar (Pandit)	11,043	10,858	185	15	...	15	...	10,828	185
Kurmi	30,352	29,779	573	...	...	146	...	29,633	573

Continuation.....

TABLE 15.11: MALE AND FEMALE HOLDERS BY ETHNICITY AND BY ECOLOGICAL BELT , NEPAL, 2001/02

Ethnicity	Number of holders								
	Nepal			Mountain		Hill		Tarai	
	Total	Male	Female	Male	Female	Male	Female	Male	Female
Kusunda	84	84	...	...	...	84	...	...	...
Lebcha	673	668	...	...	5	416	...	253	...
Limbu	61,553	55,840	5,712	10,780	1,234	30,733	2,769	14,328	1,710
Lohar	10,010	9,623	386	83	14	2,595	84	6,945	289
Magar	269,814	242,237	27,577	3,407	318	181,890	21,833	56,939	5,426
Majhi	9,507	8,869	638	894	92	5,855	296	2,121	250
Malhaha, Mallaha	22,080	21,571	508	...	...	70	22	21,501	486
Mali	2,127	2,001	126	...	...	...	...	2,001	126
Marwadi/ Marwari	1,145	1,105	40	...	...	34	...	1,071	40
Meche	827	827	...	...	...	81	...	747	...
Musahar	13,730	13,115	614	...	29	707	...	12,409	585
Musalman, Muslim	87,856	85,038	2,818	111	...	971	134	83,955	2,685
Newar	128,677	115,492	13,186	11,204	935	86,111	10,162	18,177	2,089
Nuniya	10,340	10,094	246	...	...	...	...	10,094	246
Pahari	1,299	1,254	45	...	2	1,193	44	61	...
Rai	106,374	96,874	9,500	13,089	1,417	65,930	5,858	17,855	2,225
Rajbansi	11,246	10,368	878	...	...	...	...	10,368	878
Rajbhar	6,328	5,956	371	...	...	211	...	5,745	371
Raji	618	579	38	...	...	...	15	579	24
Rajput	4,023	3,836	187	5	...	...	...	3,831	187
Raute	145	145	...	16	...	50	...	78	...
Sanyasi	37,529	33,633	3,896	6,352	452	18,209	2,351	9,072	1,094
Sarki	54,112	48,390	5,722	5,133	375	36,448	4,681	6,808	666
Satar/ Santhal	4,648	4,541	107	...	...	...	...	4,541	107
Sherpa/ Hyolmo	17,773	15,629	2,144	10,336	1,201	4,920	943	373	...
Sikh/ Panjavi	469	469	...	...	...	87	...	383	...
Sudhi	11,996	11,795	200	...	...	70	...	11,725	200
Sunar, sonar	4,594	4,395	199	...	...	140	...	4,255	199
Sunuwar	8,900	8,139	761	996	...	6,288	720	855	41
Tajpuriya	1,960	1,803	157	...	...	11	...	1,792	157
Tamang/ Murmi	211,680	195,954	15,725	38,542	3,087	132,088	10,138	25,325	2,500
Tatma	12,824	12,513	311	...	...	...	...	12,513	311
Teli	50,437	49,168	1,269	...	...	669	110	48,499	1,158
Thakali	1,440	1,308	132	657	68	542	64	109	...
Thakuri	54,832	50,523	4,309	14,120	630	25,781	2,372	10,622	1,308
Thami	4,051	3,823	228	3,570	202	144	26	110	...
Tharu	191,431	187,001	4,431	325	29	4,340	291	182,336	4,110
Yadav, Ahir, Gwala	147,743	143,619	4,124	80	15	1,570	161	141,970	3,947
Others	61,012	58,132	2,880	1,470	96	15,720	1,584	40,942	1,200
				Percent to total					
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Badi	0.02	0.02	0.02	...	...	0.03	0.03	0.01	...
Bangali	0.00	0.00	...	0.01	...	...	...	0.01	...
Baniya	0.35	0.37	0.12	...	...	0.00	...	0.81	0.42
Bantar	0.09	0.10	...	...	...	...	...	0.22	...
Bhayu	0.01	0.01	0.01	0.01	0.08	0.01	0.01	0.01	...
Bhote	0.09	0.08	0.19	0.57	2.32	0.06	0.02	0.01	...
Bote	0.03	0.03	0.04	0.02	...	0.01	0.06	0.05	...

Continuation.....

TABLE 15.11: MALE AND FEMALE HOLDERS BY ETHNICITY AND BY ECOLOGICAL BELT , NEPAL, 2001/02

Ethnicity	Number of holders								
	Nepal			Mountain		Hill		Tarai	
	Total	Male	Female	Male	Female	Male	Female	Male	Female
	Percent to total								
Brahamu	0.03	0.03	0.04	...	...	0.06	0.07	...	...
Brahman-Hill	14.34	13.73	21.30	10.43	11.03	16.78	21.94	11.31	22.71
Brahman-Tarai	0.47	0.50	0.15	0.00	...	0.00	...	1.10	0.50
Chamar, Harijan	0.99	1.05	0.32	0.00	...	0.01	...	2.31	1.10
Chepang	0.28	0.30	0.10	0.01	...	0.37	0.12	0.28	0.09
Chhantel	0.01	0.01	0.01	...	...	0.03	...	...	0.04
Chhetri	18.33	18.04	21.67	32.84	22.54	23.72	24.43	9.38	15.37
Chidimar	0.00	0.00	...	...	...	...	...	0.01	...
Chureto, Churaute	0.01	0.00	0.03	...	...	0.01	0.04	0.00	...
Damai/ Dholi	1.89	1.84	2.45	1.51	1.35	2.93	3.04	0.80	1.46
Danuwar	0.23	0.25	0.10	0.32	...	0.33	0.05	0.15	0.25
Darai	0.05	0.06	0.03	...	0.08	0.04	...	0.08	0.10
Dhanuk	0.70	0.75	0.19	...	...	0.04	0.03	1.61	0.58
Dhimal	0.06	0.06	0.05	0.01	...	0.00	0.01	0.14	0.14
Dhobi, Rajdhobi	0.34	0.36	0.17	0.01	0.14	0.01	0.02	0.78	0.52
Dhuniya	0.05	0.05	0.02	...	...	...	...	0.11	0.05
Dhusad/ Pasi	0.56	0.59	0.21	...	...	...	...	1.30	0.73
Dom	0.02	0.02	...	...	...	0.00	...	0.04	...
Dura	0.01	0.01	0.04	0.01	...	0.02	0.07	0.00	...
Gaine/ Gandarbha	0.03	0.02	0.04	...	0.08	0.04	0.04	0.01	0.05
Gangai	0.27	0.28	0.08	...	...	0.00	...	0.63	0.26
Gurung	2.39	2.21	4.40	2.79	6.73	3.48	4.77	0.81	2.96
Hajam (Thakur)	0.35	0.38	0.07	...	...	0.00	...	0.83	0.24
Halkhor, Mehattar	0.01	0.01	0.02	...	...	...	0.02	0.02	0.03
Haluwai/ Halwai	0.12	0.13	0.03	0.02	0.14	0.01	...	0.27	0.05
Jhagar/ Sangad	0.09	0.10	...	...	...	0.00	...	0.22	...
Jhangar (Orawon)	0.06	0.05	0.07	...	...	...	...	0.12	0.25
Jirel/ Surel	0.01	0.01	...	...	...	0.01	...	0.01	...
Kalwar	0.32	0.34	0.07	0.01	...	0.01	...	0.74	0.25
Kami	5.28	5.21	6.17	7.45	7.78	7.47	6.91	2.48	4.12
Kanu	0.28	0.30	0.06	...	...	...	...	0.67	0.22
Kayastha	0.20	0.20	0.16	0.03	...	0.02	0.04	0.41	0.47
Kewat/ Kewarath	0.53	0.56	0.14	...	...	0.02	...	1.22	0.48
Khatwe	0.42	0.45	0.10	0.01	...	...	...	0.99	0.34
Kisan	0.00	0.00	...	...	...	...	...	0.00	...
Koch, Koche	0.00	0.00	...	...	...	0.00	...	0.00	...
Koiri	0.76	0.81	0.24	...	...	...	...	1.79	0.84
Kumal/ Kumhal	0.34	0.33	0.48	0.17	...	0.37	0.66	0.32	0.20
Kumhar (Pandit)	0.33	0.35	0.07	0.01	...	0.00	...	0.77	0.24
Kurmi	0.90	0.96	0.21	...	...	0.01	...	2.11	0.73
Kusunda	0.00	0.00	...	...	...	0.01	...	...	...
Lebcha	0.02	0.02	...	...	0.02	0.03	...	0.02	...
Limbu	1.83	1.81	2.10	3.89	5.77	2.17	1.61	1.02	2.18
Lohar	0.30	0.31	0.14	0.03	0.07	0.18	0.05	0.50	0.37
Magar	8.02	7.83	10.16	1.23	1.49	12.86	12.71	4.06	6.93
Majhi	0.28	0.29	0.23	0.32	0.43	0.41	0.17	0.15	0.32
Malhaha, Mallaha	0.66	0.70	0.19	...	...	0.00	0.01	1.53	0.62
Mali	0.06	0.06	0.05	...	...	...	...	0.14	0.16
Marwadi/ Marwari	0.03	0.04	0.01	...	...	0.00	...	0.08	0.05

Continuation.....

TABLE 15.11: MALE AND FEMALE HOLDERS BY ETHNICITY AND BY ECOLOGICAL BELT , NEPAL, 2001/02

Ethnicity	Number of holders								
	NEPAL			Mountain		Hill		Tarai	
	Total	Male	Female	Male	Female	Male	Female	Male	Female
	Percent to total								
Meche	0.02	0.03	...	...	...	0.01	...	0.05	...
Musahar	0.41	0.42	0.23	...	0.14	0.05	...	0.89	0.75
Musalman, Muslim	2.61	2.75	1.04	0.04	...	0.07	0.08	5.99	3.43
Newar	3.82	3.73	4.86	4.05	4.38	6.09	5.91	1.30	2.67
Nuniya	0.31	0.33	0.09	...	...	...	...	0.72	0.31
Pahari	0.04	0.04	0.02	...	0.01	0.08	0.03	0.00	...
Rai	3.16	3.13	3.50	4.73	6.63	4.66	3.41	1.27	2.84
Rajbansi	0.33	0.34	0.32	...	...	...	...	0.74	1.12
Rajbhar	0.19	0.19	0.14	...	...	0.01	...	0.41	0.47
Raji	0.02	0.02	0.01	...	...	...	0.01	0.04	0.03
Rajput	0.12	0.12	0.07	0.00	...	...	...	0.27	0.24
Raute	0.00	0.00	...	0.01	...	0.00	...	0.01	...
Sanyasi	1.12	1.09	1.44	2.29	2.11	1.29	1.37	0.65	1.40
Sarki	1.61	1.56	2.11	1.85	1.76	2.58	2.72	0.49	0.85
Satar/ Santhal	0.14	0.15	0.04	...	...	...	...	0.32	0.14
Sherpa/ Hyolmo	0.53	0.51	0.79	3.73	5.62	0.35	0.55	0.03	...
Sikh/ Panjavi	0.01	0.02	...	...	...	0.01	...	0.03	...
Sudhi	0.36	0.38	0.07	...	...	0.00	...	0.84	0.26
Sunar, sonar	0.14	0.14	0.07	...	...	0.01	...	0.30	0.25
Sunuwar	0.26	0.26	0.28	0.36	...	0.44	0.42	0.06	0.05
Tajpuriya	0.06	0.06	0.06	...	...	0.00	...	0.13	0.20
Tamang/ Murmi	6.29	6.34	5.79	13.92	14.44	9.34	5.90	1.81	3.19
Tatma	0.38	0.40	0.11	...	...	...	...	0.89	0.40
Teli	1.50	1.59	0.47	...	...	0.05	0.06	3.46	1.48
Thakali	0.04	0.04	0.05	0.24	0.32	0.04	0.04	0.01	...
Thakuri	1.63	1.63	1.59	5.10	2.95	1.82	1.38	0.76	1.67
Thami	0.12	0.12	0.08	1.29	0.95	0.01	0.01	0.01	...
Tharu	5.69	6.05	1.63	0.12	0.14	0.31	0.17	13.01	5.25
Yadav, Ahir, Gwala	4.39	4.64	1.52	0.03	0.07	0.11	0.09	10.13	5.04
Others	1.81	1.88	1.06	0.53	0.45	1.11	0.92	2.92	1.53

TABLE 15.12 DISTRIBUTION OF HOLDERS BY ETHNICITY AND BY DEVELOPMENT REGION, NEPAL, 2001/02

(In thousand except Percent)

Ethnicity	Nepal	%	Development region									
			Eastern	%	Central	%	Western	%	Mid Western	%	Far Western	%
All Holders	3364.3	100.0	810.0	100.0	1035.5	100.0	715.8	100.0	469.5	100.0	333.0	100.0
Badi	0.6	0.0	...	...	0.1	0.0	0.1	0.0	0.4	0.1	0.1	0.0
Bangali	0.1	0.0	0.1	0.0	0.1	0.0	...	...	...	...	...	...
Baniya	11.7	0.3	3.3	0.4	4.9	0.5	3.0	0.4	0.4	0.1	...	...
Bantar	3.1	0.1	2.5	0.3	0.6	0.1	...	...	...	...	...	...
Bhayu	0.2	0.0	...	...	0.1	0.0	...	...	...	...	...	...
Bhote	3.1	0.1	2.1	0.3	1.0	0.1	...	...	...	...	...	...
Bote	1.0	0.0	0.1	0.0	0.5	0.0	0.3	0.0	0.1	0.0	...	...
Brahamu	0.9	0.0	...	...	...	...	0.9	0.1	...	...	...	...
Brahman-Hill	482.5	14.3	101.4	12.5	125.8	12.1	166.1	23.2	45.2	9.6	44.1	13.2
Brahman-Tarai	15.9	0.5	1.4	0.2	10.4	1.0	3.1	0.4	1.0	0.2	0.2	0.1
Chamar, Harijan	...	1.0	8.1	1.0	15.8	1.5	8.3	1.2	1.1	0.2	...	...
Chepang	9.6	0.3	...	...	8.2	0.8	1.2	0.2	...	...	0.1	0.0
Chhantel	0.5	0.0	...	...	...	...	0.4	0.1	...	...	...	...
Chhetri	616.9	18.3	112.7	13.9	114.0	11.0	96.4	13.5	144.9	30.9	148.8	44.7
Chidimar	0.1	0.0	...	...	...	...	...	...	0.1	0.0	...	...
Chureto, Churaute	...	0.0	...	...	...	...	0.1	0.0	...	...	...	...
Danuwar	7.9	0.2	2.3	0.3	5.4	0.5	0.1	0.0	...	...	...	...
Darai	1.8	0.1	0.0	0.0	1.0	0.1	0.8	0.1	...	...	...	...
Dhanuk	23.6	0.7	8.7	1.1	13.8	1.3	0.3	0.0	0.2	0.0	0.5	0.2
Dhimal	2.1	0.1	2.0	0.2	0.1	0.0	...	...	...	...	...	...
	...	0.3	2.1	0.3	6.0	0.6	2.2	0.3	1.1	0.2	0.1	0.0
Dhuniya	...	...	...	...	1.2	0.1	0.2	0.0	0.1	0.0	...	...
Dom	0.6	0.0	0.2	0.0	0.3	0.0	...	...	...	...	...	...
Dura	...	...	...	...	0.1	0.0	0.4	0.1	...	...	...	...
Gaine/ Gandarbha		0.0	0.1	0.0	0.1	0.0	0.4	0.1	0.2	0.0	...	...
Gangai	9.0	0.3	8.8	1.1	0.0	0.0	...	...	0.1	0.0	...	...
Gurung	80.3	2.4	10.9	1.3	13.7	1.3	49.6	6.9	5.5	1.2	0.5	0.1
Hajam (Thakur)	...	0.4	3.7	0.5	6.1	0.6	1.4	0.2	0.6	0.1	...	...
Halkhor, Mehattar	...	0.0	0.1	0.0	0.1	0.0	...	...	0.1	0.0	...	...
Haluwai/ Halwai	...	0.1	1.2	0.2	2.4	0.2	0.3	0.0	0.1	0.0	...	...
Jhagar/ Sangad	...	...	3.0	0.4	...	...	0.1	0.0	...	...	...	...
Jhangar (Orawon)	...	...	1.9	0.2	...	...	...	...	...	...	...	...
Jirel/ Surel	0.3	0.0	0.1	0.0	0.1	0.0	...	...	0.1	0.0	...	...
Kalwar	10.7	0.3	1.4	0.2	8.2	0.8	0.8	0.1	0.2	0.0	...	...
Kami	177.8	5.3	18.6	2.3	21.1	2.0	48.9	6.8	52.4	11.2	36.9	11.1
Kanu	9.6	0.3	0.3	0.0	9.0	0.9	...	...	0.3	0.1	...	...
Kayastha	6.6	0.2	2.3	0.3	2.2	0.2	1.1	0.2	0.4	0.1	0.6	0.2
Kewat/ Kewarath	...	0.5	3.6	0.4	6.9	0.7	6.2	0.9	0.9	0.2	...	...
Khatwe	14.2	0.4	8.3	1.0	4.4	0.4	0.7	0.1	0.9	0.2	...	...
Kisan	0.1	0.0	0.1	0.0	...	...	...	...	...	...	...	...
Koch, Koche	...	...	...	...	0.1	0.0	...	...	...	...	...	...
Koiri	25.7	0.8	5.7	0.7	17.0	1.6	2.6	0.4	0.3	0.1	0.1	0.0
Kumal/ Kumhal	...	0.3	0.8	0.1	1.6	0.2	7.0	1.0	1.7	0.4	0.4	0.1
Kumhar (Panit)	...	0.3	2.3	0.3	6.2	0.6	2.1	0.3	0.5	0.1	...	...
Kurmi	30.4	0.9	3.5	0.4	14.9	1.4	10.4	1.4	1.3	0.3	0.3	0.1
Kusunda	...	...	0.1	0.0	...	...	...	...	...	...	...	...

Continuation .....

TABLE 15.12 DISTRIBUTION OF HOLDERS BY ETHNICITY AND BY DEVELOPMENT REGION, NEPAL, 2001/02

(In thousand except Percent)

Ethnicity	Nepal	%	Development region									
			Eastern	%	Central	%	Western	%	Mid Western	%	Far Western	%
Lebcha	0.7	0.0	0.3	0.0	0.3	0.0	...	...	...	...	...	...
Limbu	61.6	1.8	61.2	7.6	0.2	0.0	0.1	0.0	0.1	0.0	...	...
Magar	269.9	8.0	31.1	3.8	38.5	3.7	124.7	17.4	71.2	15.2	4.3	1.3
Majhi	9.5	0.3	3.2	0.4	4.5	0.4	0.7	0.1	1.0	0.2	0.1	0.0
Malhaha, Mallaha	...	0.7	2.7	0.3	15.7	1.5	2.3	0.3	1.3	0.3	...	...
Mali	...	...	0.5	0.1	1.4	0.1	0.2	0.0	...	...	...	...
Marwadi/ Marwari	...	...	1.0	0.1	0.1	0.0	...	...	0.1	0.0	...	...
Meche	...	...	0.7	0.1	...	...	...	...	0.1	0.0	...	...
Musahar	13.7	0.4	9.1	1.1	4.0	0.4	0.6	0.1	...	...	...	..
Musalman, Muslim	...	2.6	21.3	2.6	40.0	3.9	18.2	2.5	7.6	1.6	0.7	0.2
Newar	128.7	3.8	23.7	2.9	83.7	8.1	17.6	2.5	2.3	0.5	1.4	0.4
Nuniya	10.3	0.3	1.0	0.1	8.3	0.8	1.0	0.1	0.1	0.0	...	...
Pahari	...	...	...	...	1.2	0.1	...	...	...	...	...	...
Rai	106.1	3.2	99.6	12.3	5.7	0.5	0.2	0.0	0.3	0.1	0.3	0.1
Rajbansi	...	...	11.0	1.4	0.1	0.0	...	...	0.2	0.0	...	...
Rajbhar	6.3	0.2	2.4	0.3	0.8	0.1	2.9	0.4	0.1	0.0	...	...
Raji	...	...	...	...	0.1	0.0	...	...	...	...	0.5	0.1
Rajput	...	...	1.8	0.2	2.1	0.2	...	...	0.1	0.0	0.1	0.0
Raute	...	...	...	...	0.1	0.0	...	...	...	...	...	...
Sanyasi	37.5	1.1	5.6	0.7	9.8	0.9	6.2	0.9	12.0	2.5	4.0	1.2
Sarki	54.1	1.6	6.1	0.7	13.0	1.3	18.1	2.5	8.9	1.9	8.0	2.4
Satar/ Santhal	...	...	4.6	0.6	...	...	...	...	...	...	...	...
Sherpa/ Hyolmo	...	0.5	12.6	1.6	4.9	0.5	...	...	0.2	0.1	...	...
Sikh/ Panjavi	...	...	0.2	0.0	0.0	0.0	...	...	0.2	0.0	...	...
Sudhi	12.0	0.4	2.9	0.4	8.9	0.9	...	...	0.1	0.0	...	...
Sunar, sonar	4.6	0.1	0.4	0.0	3.0	0.3	0.8	0.1	0.4	0.1	...	...
Sunuwar	8.9	0.3	3.5	0.4	3.8	0.4	1.0	0.1	0.5	0.1	0.1	0.0
Tajpuriya	...	...	1.9	0.2	0.0	0.0	...	...	...	...	...	...
Tamang/ Murmi	...	6.3	32.3	4.0	167.1	16.1	9.4	1.3	1.0	0.2	1.9	0.6
Tatma	12.8	0.4	2.9	0.4	9.4	0.9	0.2	0.0	0.3	0.1	...	...
Teli	50.4	1.5	18.0	2.2	28.1	2.7	3.6	0.5	0.6	0.1	0.1	0.0
Thakali	1.4	0.0	0.1	0.0	...	...	1.1	0.2	0.1	0.0	...	...
Thakuri	54.8	1.6	1.9	0.2	3.1	0.3	7.9	1.1	25.8	5.5	16.1	4.8
Thami	...	...	0.2	0.0	3.8	0.4	0.1	0.0	...	...	...	...
Tharu	191.5	5.7	43.0	5.3	26.9	2.6	26.0	3.6	51.2	10.9	44.4	13.3
Yadav, Ahir, Gwala	...	4.4	47.3	5.8	77.9	7.5	16.2	2.3	5.7	1.2	0.6	0.2
Others	153.2	4.6	32.0	4.0	45.4	4.4	40.8	5.7	17.7	3.8	17.3	5.2

Note: Details may not add up to total because of rounding.

TABLE 15.13: TOP FIVE ETHNIC GROUPS OF MALE AND FEMALE HOLDERS BY ECOLOGICAL BELT AND DEVELOPMENT REGION, NEPAL, 2001/02

Area/Rank	Sex and Top Five Ethnic Groups	No. of holders	% to total
NEPAL	Both sexes	3,364,139	100.0
	1 Chhetri	616,783	18.3
	2 Brahman-Hill	482,475	14.3
	3 Magar	269,814	8.0
	4 Tamang/ Murmi	211,680	6.3
	5 Tharu	191,431	5.7
NEPAL	TOTAL MALE	3,092,631.9	100.0
	1 Chhetri	557,947.4	18.0
	2 Brahman-Hill	424,643.0	13.7
	3 Magar	242,236.6	7.8
	4 Tamang/ Murmi	195,954.4	6.3
	5 Tharu	187,000.7	6.0
ECOLOGICAL BELT			
Mountain	Total male	276,850.9	100.0
	1 Chhetri	90,908.2	32.8
	2 Tamang/ Murmi	38,541.9	13.9
	3 Brahman-Hill	28,871.6	10.4
	4 Kami	20,614.3	7.4
	5 Thakuri	14,120.2	5.1
Hill	Total male	1,414,604.1	100.0
	1 Chhetri	335,606.0	23.7
	2 Brahman-Hill	237,363.0	16.8
	3 Magar	181,890.1	12.9
	4 Tamang/ Murmi	132,088.0	9.3
	5 Kami	105,631.2	7.5
Tarai	Total male	1,401,176.9	100.0
	1 Tharu	182,335.6	13.0
	2 Brahman-Hill	158,408.4	11.3
	3 Yadav, Ahir, Gwala	141,969.7	10.1
	4 Chhetri	131,433.1	9.4
	5 Musalman, Muslim	83,955.5	6.0
DEVELOPMENT REGION			
Eastern	Total male	754,062.0	100.0
	1 Chhetri	104,604.2	13.9
	2 Brahman-Hill	93,823.4	12.4
	3 Rai	90,440.7	12.0
	4 Limbu	55,493.5	7.4
	5 Yadav, Ahir, Gwala	45,860.8	6.1

Area/Rank	Sex and Top Five Ethnic Groups	No. of holders	% to total
NEPAL	Both sexes	3,364,139	100.0
	1 Chhetri	616,783	18.3
	2 Brahman-Hill	482,475	14.3
	3 Magar	269,814	8.0
	4 Tamang/ Murmi	211,680	6.3
	5 Tharu	191,431	5.7
NEPAL	TOTAL FEMALE	271,507.1	100.0
	1 Chhetri	58,835.5	21.7
	2 Brahman-Hill	57,832.2	21.3
	3 Magar	27,577.3	10.2
	4 Kami	16,754.1	6.2
	5 Tamang/ Murmi	15,725.4	5.8
ECOLOGICAL BELT			
Mountain	Total Female	21,372.1	100.0
	1 Chhetri	4,817.7	22.5
	2 Tamang/ Murmi	3,087.1	14.4
	3 Brahman-Hill	2,357.2	11.0
	4 Kami	1,663.7	7.8
	5 Gurung	1,438.1	6.7
Hill	Total female	171,801.9	100.0
	1 Chhetri	41,976.2	24.4
	2 Brahman-Hill	37,688.3	21.9
	3 Magar	21,833.0	12.7
	4 Kami	11,866.5	6.9
	5 Newar	10,161.7	5.9
Tarai	Total female	78,333.1	100.0
	1 Brahman-Hill	17,786.7	22.7
	2 Chhetri	12,041.6	15.4
	3 Magar	5,426.0	6.9
	4 Tharu	4,110.2	5.2
	5 Yadav, Ahir, Gwala	3,947.1	5.0
DEVELOPMENT REGION			
Eastern	Total female	55,955.0	100.0
	1 Rai	9,209.2	16.5
	2 Chhetri	8,080.7	14.4
	3 Brahman-Hill	7,564.6	13.5
	4 Limbu	5,712.4	10.2
	5 Tamang/ Murmi	2,935.7	5.2

continuation....

Area/Rank	Sex and Top Five Ethnic Groups	No. of holders	% to total
Central	Total male	965,416.3	100.0
	1 Tamang/ Murmi	155,962.7	16.2
	2 Brahman-Hill	112,913.1	11.7
	3 Chhetri	99,541.2	10.3
	4 Yadav, Ahir, Gwala	75,941.8	7.9
	5 Newar	75,377.4	7.8
Western	Total male	615,816.2	100.0
	1 Brahman-Hill	134,796.6	21.9
	2 Magar	108,387.4	17.6
	3 Chhetri	77,352.0	12.6
	4 Kami	42,253.6	6.9
	5 Gurung	41,764.3	6.8
Mid-Western	Total male	440,465.0	100.0
	1 Chhetri	134,960.0	30.6
	2 Magar	66,017.3	15.0
	3 Tharu	50,605.1	11.5
	4 Kami	48,696.2	11.1
	5 Brahman-Hill	41,612.6	9.4
Far-Western	Total male	316,872.3	100.0
	1 Teli	141,490.0	44.7
	2 Sikh/ Panjavi	43,870.0	13.8
	3 Dhanuk	41,497.3	13.1
	4 Gaine/ Gandarbha	34,610.5	10.9
	5 Thakali	15,071.9	4.8

Area/Rank	Sex and Top Five Ethnic Groups	No. of holders	% to total
Central	Total female	70,410.7	100.0
	1 Chhetri	14,473.3	20.6
	2 Brahman-Hill	12,843.9	18.2
	3 Tamang/ Murmi	11,163.5	15.9
	4 Newar	8,364.0	11.9
	5 Magar	3,536.1	5.0
Western	Total female	99,991.8	100.0
	1 Brahman-Hill	31,268.4	31.3
	2 Chhetri	19,068.8	19.1
	3 Magar	16,279.4	16.3
	4 Gurung	7,877.5	7.9
	5 Kami	6,598.3	6.6
Mid_Western	Total female	29,061.9	100.0
	1 Chhetri	9,927.1	34.2
	2 Magar	5,224.4	18.0
	3 Kami	3,685.3	12.7
	4 Brahman-Hill	3,545.9	12.2
	5 Thakuri	1,409.4	4.8
Far-Western	Total female	16,087.7	100.0
	1 Chhetri	7,285.7	45.3
	2 Brahman-Hill	2,609.2	16.2
	3 Kami	2,262.9	14.1
	4 Thakuri	984.0	6.1
	5 Damai/ Dholi	543.9	3.4

TABLE 15.14: LEGAL STATUS OF HOLDING BY SIZE OF HOLDING AND SEX OF HOLDER
NEPAL, 2001/02

Size of Holding and Sex of Holder	Total Number of Holdings	%	Legal Status of Holding					
			Single Family	% total	Joint Family	% total	Other	% total
BOTH SEXES	3,364,139	100.0	3,268,845	97.2	93,892	2.8	1,402	0.04
Holdings without land	26,700	100.0	25,751	96.4	880	3.3	68	0.25
Holdings with land	3,337,439	100.0	3,243,094	97.2	93,012	2.8	1,334	0.04
Less than 0.5 ha.	1,578,919	100.0	1,545,082	97.9	33,350	2.1	486	0.03
0.5 - < 2.0 ha.	1,504,323	100.0	1,456,915	96.8	46,779	3.1	629	0.04
2.0 ha and over	254,198	100.0	241,098	94.8	12,882	5.1	219	0.09
MALE	3,092,632	100.0	3,002,145	97.1	89,135	2.9	1,352	0.04
Holdings without land	24,187	100.0	23,349	96.5	770	3.2	68	0.28
Holdings with land	3,068,445	100.0	2,978,796	97.1	88,364	2.9	1,284	0.04
Less than 0.5 ha.	1,410,590	100.0	1,378,962	97.8	31,192	2.2	436	0.03
0.5 - < 2.0 ha.	1,411,455	100.0	1,366,282	96.8	44,544	3.2	629	0.04
2.0 ha and over	246,398	100.0	233,551	94.8	12,629	5.1	219	0.09
FEMALE	271,507	100.0	266,700	98.2	4,757	1.8	50	0.02
Holdings without land	2,512	100.0	2,402	95.6	110	4.4		
Holdings with land	268,995	100.0	264,298	98.3	4,647	1.7	50	0.02
Less than 0.5 ha.	168,327	100.0	166,121	98.7	2,158	1.3	50	0.03
0.5 - < 2.0 ha.	92,868	100.0	90,633	97.6	2,235	2.4		
2.0 ha and over	7,800	100.0	7,546	96.7	255	3.3		

TABLE 15.15:LEGAL STATUS OF HOLDINGS BY ECOLOGICAL BELT AND DEVELOPMENT REGION, NEPAL, 2001/02

Geographic area	Legal status of holding						Total	
	Single family		Joint family		Other			
	Number	%	Number	%	Number	%	Number	%
NEPAL	3,268,845	97.2	93,892	2.8	1,402	0.0	3,364,239	100.0
ECOLOGICAL BELT								
Mountain	295,081	98.9	3,122	1.0	21	0.01	298,224	100.0
Hill	1,541,174	97.1	44,686	2.8	545	0.03	1,586,405	100.0
Tarai	1,432,593	96.8	46,084	3.1	836	0.06	1,479,513	100.0
DEVELOPMENT REGION								
Eastern	782,493	96.6	27,006	3.3	517	0.06	810,016	100.0
Central	1,013,271	97.8	22,089	2.1	468	0.05	1,035,828	100.0
Western	702,296	98.1	13,341	1.9	172	0.02	715,809	100.0
Mid Western	453,605	96.6	15,728	3.3	196	0.00	469,529	100.0
Far Western	317,183	95.3	15,728	4.7	49	0.01	332,960	100.0

TABLE 15.16: MALE AND FEMALE HOLDERS BY SIZE OF HOLDING AND USE OF PRODUCE OF HOLDING, NEPAL, 2001/02

Size of holding and Sex of holder	Total Number of Holdings	%	Use of Produce from Holding					
			Household Consumption	% to total	Sale	% to total	Both household consumption and Sale	% to total
BOTH SEXES	3,364,139	100.0	2,630,789	78.2	8,091	0.2	725,259	21.6
Holdings without land	26,700	100.0	21,714	81.3	526	2.0	4,460	16.7
Holdings with land	3,337,439	100.0	2,609,075	78.2	7,565	0.2	720,799	21.6
Less than 0.5 ha.	1,578,919	100.0	1,417,334	89.8	2,565	0.2	159,018	10.1
0.5 - < 2.0 ha.	1,504,323	100.0	1,081,704	71.9	4,033	0.3	418,587	27.8
2.0 ha and over	254,198	100.0	110,037	43.3	967	0.4	143,193	56.3
MALE	3,092,632	100.0	2,401,424	77.6	7,367	0.2	683,840	22.1
Holdings without land	24,187	100.0	19,848	82.1	497	2.1	3,843	15.9
Holdings with land	3,068,445	100.0	2,381,576	77.6	6,870	0.2	679,998	22.2
Less than 0.5 ha.	1,410,590	100.0	1,263,948	89.6	2,258	0.2	144,386	10.2
0.5 - < 2.0 ha.	1,411,455	100.0	1,011,318	71.7	3,695	0.3	396,442	28.1
2.0 ha and over	246,398	100.0	106,311	43.1	917	0.4	139,171	56.5
FEMALE	271,507	100.0	229,365	84.5	724	0.3	41,418	15.3
Holdings without land	2,512	100.0	1,866	74.3	29	1.2	617	24.6
Holdings with land	268,995	100.0	227,499	84.6	695	0.3	40,801	15.2
Less than 0.5 ha.	168,327	100.0	153,386	91.1	308	0.2	14,632	8.7
0.5 - < 2.0 ha.	92,868	100.0	70,386	75.8	336	0.4	22,144	23.8
2.0 ha and over	7,800	100.0	3,726	47.8	50	0.6	4,023	51.6

TABLE 15.17: MAIN USE OF PRODUCE OF HOLDING BY SEX OF HOLDER AND BY ECOLOGICAL BELT AND DEVELOPMENT REGION, NEPAL, 2001/02

Sex of holder/ Geographic area	Total number of holdings	%	Main use of produce from holding					
			Household consumption	% to total	Sale	% to total	Both, household consumption and sale	% to total
NEPAL, Both Sexes	3,364,139	100.0	2,630,789	78.2	8,091	0.2	725,259	21.6
Ecological Belt								
Mountain	298,223	100.0	263,870	88.5	239	0.1	34,114	11.4
Hill	1,586,406	100.0	1,298,315	81.8	3,125	0.2	284,965	18.0
Tarai	1,479,510	100.0	1,068,604	72.2	4,727	0.3	406,179	27.5
Development Region								
Eastern	810,017	100.0	578,840	71.5	2,017	0.2	229,160	28.3
Central	1,035,827	100.0	772,168	74.5	2,706	0.3	260,953	25.2
Western	715,808	100.0	615,005	85.9	1,016	0.1	99,786	13.9
Mid Western	469,527	100.0	386,768	82.4	1,763	0.4	80,995	17.3
Far Western	332,960	100.0	278,007	83.5	589	0.2	54,364	16.3
Male	3,092,632	100.0	2,401,424	77.6	7,367	0.2	683,840	22.1
Ecological Belt								
Mountain	276,851	100.0	244,386	88.3	233	0.1	32,232	11.6
Hill	1,414,604	100.0	1,149,724	81.3	2,669	0.2	262,212	18.5
Tarai	1,401,177	100.0	1,007,314	71.9	4,466	0.3	389,397	27.8
Development Region								
Eastern	754,062	100.0	535,180	71.0	1,890	0.3	216,992	28.8
Central	965,416	100.0	715,427	74.1	2,494	0.3	247,495	25.6
Western	615,816	100.0	524,751	85.2	823	0.1	90,242	14.7
Mid Western	440,465	100.0	361,222	82.0	1,718	0.4	77,525	17.6
Far Western	316,872	100.0	264,844	83.6	442	0.1	51,586	16.3
Female	271,507	100.0	229,365	84.5	724	0.3	41,418	15.3
Ecological Belt								
Mountain	21,372	100.0	19,483	91.2	6	0.0	1,883	8.8
Hill	171,802	100.0	148,591	86.5	457	0.3	22,754	13.2
Tarai	78,333	100.0	61,290	78.2	261	0.3	16,782	21.4
Development Region								
Eastern	55,955	100.0	43,660	78.0	127	0.2	12,168	21.7
Central	70,411	100.0	56,742	80.6	211	0.3	13,458	19.1
Western	99,992	100.0	90,254	90.3	194	0.2	9,544	9.5
Mid Western	29,062	100.0	25,546	87.9	45	0.2	3,470	11.9
Far Western	16,088	100.0	13,163	81.8	147	0.9	2,778	17.3

TABLE 15.18: SUFFICIENCY OF AGRICULTURAL PRODUCE TO FEED HOUSEHOLD BY SEX OF HOLDER AND BY ECOLOGICAL BELT, NEPAL, 2001/02

Sufficiency of Agricultural Produce	Nepal	%	Ecological Belt					
			Mountain	%	Hill	%	Tarai	%
All holdings	3,364,139	100.0	298,223	100.0	1,586,406	100.0	1,479,510	100.0
Sufficient to feed household	1,337,965	39.8	134,534	45.1	592,035	37.3	611,396	41.3
Insufficient to feed household	2,026,174	60.2	163,689	54.9	994,371	62.7	868,114	58.7
Male holders	3,092,632	100.0	276,851	100.0	1,414,604	100.0	1,401,177	100.0
Sufficient to feed household	1,243,170	40.2	125,098	45.2	538,903	38.1	579,169	41.3
Insufficient to feed household	1,849,462	59.8	151,753	54.8	875,701	61.9	822,008	58.7
Female holders	271,507	100.0	21,372	100.0	171,802	100.0	78,333	100.0
Sufficient to feed household	94,795	34.9	9,436	44.1	53,132	30.9	32,227	41.1
Insufficient to feed household	176,712	65.1	11,936	55.9	118,670	69.1	46,106	58.9
			Number of months of insufficiency of produce					
Total holdings with insufficiency of produce	2,026,174	100.0	163,689	100.0	994,371	100.0	868,114	100.0
1 to 3 months	439,592	21.7	57,519	35.1	238,734	24.0	143,338	16.5
4 to 6 months	877,362	43.3	70,814	43.3	466,923	47.0	339,624	39.1
7 to 9 months	342,039	16.9	22,876	14.0	169,278	17.0	149,886	17.3
10 to 12 months	357,544	17.6	11,025	6.7	115,695	11.6	230,824	26.6
Male holders with insufficiency of produce	1,849,462	100.0	151,753	100.0	875,701	100.0	822,008	100.0
1 to 3 months	406,836	22.0	54,985	36.2	214,987	24.6	136,864	16.6
4 to 6 months	802,437	43.4	65,127	42.9	414,379	47.3	322,931	39.3
7 to 9 months	308,517	16.7	20,535	13.5	146,273	16.7	141,709	17.2
10 to 12 months	322,853	17.5	9,732	6.4	96,825	11.1	216,296	26.3
Female holders with insufficiency	176,712	100.0	11,936	100.0	118,670	100.0	46,106	100.0
1 to 3 months	32,756	18.5	2,534	21.2	23,747	20.0	6,475	14.0
4 to 6 months	74,925	42.4	5,687	47.6	52,544	44.3	16,694	36.2
7 to 9 months	33,522	19.0	2,340	19.6	23,005	19.4	8,177	17.7
10 to 12 months	34,690	19.6	1,293	10.8	18,869	15.9	14,528	31.5
			Manner of coping with insufficiency of produce					
Total holdings with insufficiency of produce	2,026,174	100.0	163,689	100.0	994,371	100.0	868,114	100.0
Borrowing	241,975	11.9	16,331	10.0	123,546	12.4	102,098	11.8
Income within district	1,390,038	68.6	118,076	72.1	661,303	66.5	610,659	70.3
Income within Nepal but outside district	174,393	8.6	13,889	8.5	81,811	8.2	78,693	9.1
Income outside Nepal	266,421	13.1	17,356	10.6	146,392	14.7	102,673	11.8
Other	165,793	8.2	6,299	3.8	88,175	8.9	71,318	8.2
Male holders with insufficiency of produce	1,849,462	100.0	151,753	100.0	875,701	100.0	822,008	100.0
Borrowing	222,250	12.0	14,830	9.8	110,949	12.7	96,471	11.7
Income within district	1,288,367	69.7	109,955	72.5	596,444	68.1	581,968	70.8
Income within Nepal but outside district	158,117	8.5	12,544	8.3	71,016	8.1	74,557	9.1
Income outside Nepal	229,147	12.4	16,456	10.8	117,098	13.4	95,594	11.6
Other	149,201	8.1	5,439	3.6	77,616	8.9	66,146	8.0
Female holders with insufficiency of produce	176,712	100.0	11,936	100.0	118,670	100.0	46,106	100.0
Borrowing	19,725	11.2	1,501	12.6	12,597	10.6	5,627	12.2
Income within district	101,671	57.5	8,121	68.0	64,859	54.7	28,691	62.2
Income within Nepal but outside district	16,276	9.2	1,345	11.3	10,795	9.1	4,136	9.0
Income outside Nepal	37,274	21.1	901	7.5	29,294	24.7	7,080	15.4
Other	16,592	9.4	860	7.2	10,559	8.9	5,172	11.2

TABLE 15.19: SUFFICIENCY OF AGRICULTURAL PRODUCE, DURATION OF INSUFFICIENCY AND COPING MECHANISM BY SEX OF HOLDER AND BY DEVELOPMENT REGION, NEPAL, 2001/02

Sufficiency of Agricultural Produce	Nepal	%	Eastern		Central		Western		Mid Western		Far Western	
			Number	% to total	Number	% to total	Number	% to total	Number	% to total	Number	% to total
All holdings	3,364,139	100.0	810,017	100.0	1,035,827	100.0	715,808	100.0	469,527	100.0	332,960	100.0
Sufficient to feed household	1,337,965	39.8	310,713	38.4	405,741	39.2	242,608	33.9	224,780	47.9	154,123	46.3
Insufficient to feed household	2,026,174	60.2	499,304	61.6	630,086	60.8	473,200	66.1	244,747	52.1	178,837	53.7
Male holders	3,092,632	100.0	754,062	100.0	965,416	100.0	615,816	100.0	440,465	100.0	316,872	100.0
Sufficient to feed household	1,243,170	40.2	290,327	38.5	379,892	39.4	213,444	34.7	212,398	48.2	147,110	46.4
Insufficient to feed household	1,849,462	59.8	463,735	61.5	585,524	60.6	402,372	65.3	228,067	51.8	169,763	53.6
Female holders	271,507	100.0	55,955	100.0	70,411	100.0	99,992	100.0	29,062	100.0	16,088	100.0
Sufficient to feed household	94,795	34.9	20,385	36.4	25,849	36.7	29,164	29.2	12,382	42.6	7,013	43.6
Insufficient to feed household	176,712	65.1	35,570	63.6	44,561	63.3	70,827	70.8	16,680	57.4	9,075	56.4
Number of months of insufficiency of produce												
Total holdings with insufficient produce:	2,026,174	100.0	499,304	100.0	630,086	100.0	473,200	100.0	244,747	100.0	178,837	100.0
1 to 3 months	439,592	21.7	96,553	19.3	120,183	19.1	94,329	19.9	71,658	29.3	56,869	31.8
4 to 6 months	877,362	43.3	203,279	40.7	276,466	43.9	219,515	46.4	103,867	42.4	74,235	41.5
7 to 9 months	342,039	16.9	79,060	15.8	119,755	19.0	86,655	18.3	32,937	13.5	23,632	13.2
10 to 12 months	357,544	17.6	116,625	23.4	111,110	17.6	71,766	15.2	34,739	14.2	23,304	13.0
Male holdings with insufficient produce:	1,849,462	100.0	463,735	100.0	585,524	100.0	402,372	100.0	228,067	100.0	169,763	100.0
1 to 3 months	406,836	22.0	89,870	19.4	113,365	19.4	82,155	20.4	67,227	29.5	54,219	31.9
4 to 6 months	802,437	43.4	189,306	40.8	257,127	43.9	188,444	46.8	97,094	42.6	70,466	41.5
7 to 9 months	308,517	16.7	72,764	15.7	110,447	18.9	72,379	18.0	30,629	13.4	22,298	13.1
10 to 12 months	322,853	17.5	108,366	23.4	102,173	17.4	58,624	14.6	31,652	13.9	22,038	13.0
Female holdings with insufficient produce:	176,712	100.0	35,570	100.0	44,561	100.0	70,827	100.0	16,680	100.0	9,075	100.0
1 to 3 months	32,756	18.5	6,683	18.8	6,818	15.3	12,174	17.2	4,431	26.6	2,650	29.2
4 to 6 months	74,925	42.4	13,973	39.3	19,340	43.4	31,071	43.9	6,774	40.6	3,769	41.5
7 to 9 months	33,522	19.0	6,297	17.7	9,308	20.9	14,276	20.2	2,308	13.8	1,334	14.7
10 to 12 months	34,690	19.6	8,260	23.2	8,936	20.1	13,142	18.6	3,087	18.5	1,266	13.9

Continuation.....

TABLE 15.19: SUFFICIENCY OF AGRICULTURAL PRODUCE, DURATION OF INSUFFICIENCY AND COPING MECHANISM BY SEX OF HOLDER AND BY DEVELOPMENT REGION, NEPAL, 2001/02

Sufficiency of Agricultural Produce	Nepal	%	Eastern Region		Central Region		Western Region		Mid Western Region		Far Western Region	
			Number	% to total	Number	% to total	Number	% to total	Number	% to total	Number	% to total
			Manner of coping with insufficiency of produce									
Total holdings with insufficient produce:	2,026,174	100.0	499,304	100.0	630,086	100.0	473,200	100.0	244,747	100.0	178,837	100.0
Borrowing	241,975	11.9	100,568	20.1	62,585	9.9	41,636	8.8	19,974	8.2	17,211	9.6
Income within district	1,390,038	68.6	347,733	69.6	464,975	73.8	298,497	63.1	161,104	65.8	117,729	65.8
Income within Nepal but outside the district	174,393	8.6	42,008	8.4	66,496	10.6	36,372	7.7	20,813	8.5	8,703	4.9
Income outside Nepal	266,421	13.1	32,569	6.5	53,538	8.5	90,238	19.1	45,103	18.4	44,974	25.1
Other	165,793	8.2	53,137	10.6	40,722	6.5	38,350	8.1	16,264	6.6	17,319	9.7
Male holdings with insufficient produce:	1,849,462	100.0	463,735	100.0	585,524	100.0	402,372	100.0	228,067	100.0	169,763	100.0
Borrowing	222,250	12.0	92,730	20.0	59,284	10.1	35,785	8.9	18,546	8.1	15,906	9.4
Income within district	1,288,367	69.7	325,324	70.2	431,893	73.8	266,256	66.2	151,861	66.6	113,034	66.6
Income within Nepal but outside the district	158,117	8.5	38,911	8.4	62,435	10.7	29,212	7.3	19,204	8.4	8,355	4.9
Income outside Nepal	229,147	12.4	29,073	6.3	50,946	8.7	66,101	16.4	41,117	18.0	41,909	24.7
Other	149,201	8.1	49,051	10.6	37,103	6.3	32,451	8.1	14,547	6.4	16,048	9.5
Female holdings with insufficient produce:	176,712	100.0	35,570	100.0	44,561	100.0	70,827	100.0	16,680	100.0	9,075	100.0
Borrowing	19,725	11.2	7,838	22.0	3,301	7.4	5,852	8.3	1,428	8.6	1,305	14.4
Income within district	101,671	57.5	22,409	63.0	33,082	74.2	32,241	45.5	9,244	55.4	4,695	51.7
Income within Nepal but outside the district	16,276	9.2	3,097	8.7	4,061	9.1	7,160	10.1	1,609	9.6	348	3.8
Income outside Nepal	37,274	21.1	3,495	9.8	2,592	5.8	24,136	34.1	3,986	23.9	3,064	33.8
Other	16,592	9.4	4,086	11.5	3,619	8.1	5,899	8.3	1,717	10.3	1,271	14.0

TABLE 15.20: NUMBER AND AREA OF HOLDINGS BY SOIL TYPE AND COLOR AND BY ECOLOGICAL BELT, NEPAL, 2001/02

Soil type and color	Nepal	%	Ecological Belt					
			Mountain	% to total	Hill	% to total	Tarai	% to total
			Number of holdings					
Total	3,364,139	100.0	298,223	100.0	1,586,406	100.0	1,479,510	100.0
Sand	1,457,918	43.3	164,375	55.1	659,769	41.6	633,774	42.8
Loam	2,006,773	59.7	194,515	65.2	842,127	53.1	970,131	65.6
Silt	557,458	16.6	61,009	20.5	314,053	19.8	182,396	12.3
Clay	1,316,369	39.1	109,442	36.7	752,486	47.4	454,440	30.7
Clay Loam	442,173	13.1	44,541	14.9	273,569	17.2	124,063	8.4
Total	3,364,139	100.0	298,223	100.0	1,586,406	100.0	1,479,510	100.0
Black	1,879,661	55.9	209,295	70.2	892,616	56.3	777,750	52.6
Brown	2,092,953	62.2	171,837	57.6	1,001,498	63.1	919,619	62.2
Yellow	636,853	18.9	33,958	11.4	248,640	15.7	354,254	23.9
Red	824,529	24.5	103,883	34.8	612,195	38.6	108,450	7.3
Other	171,191	5.1	21,087	7.1	71,571	4.5	78,533	5.3
			Area of holding (ha)					
Total	2,654,037	100.0	218,706	100.0	1,038,615	100.0	1,396,716	100.0
Sand	589,455	22.2	64,899	29.7	235,935	22.7	288,620	20.7
Loam	884,697	33.3	84,537	38.7	302,099	29.1	498,062	35.7
Silt	167,822	6.3	16,178	7.4	79,981	7.7	71,663	5.1
Clay	532,488	20.1	37,681	17.2	286,806	27.6	208,001	14.9
Clay Loam	145,777	5.5	15,223	7.0	88,928	8.6	41,626	3.0
Total	2,654,037	100.0	218,706	100.0	1,038,615	100.0	1,396,716	100.0
Black	825,307	31.1	89,926	41.1	327,235	31.5	408,146	29.2
Brown	939,299	35.4	71,826	32.8	370,656	35.7	496,818	35.6
Yellow	215,460	8.1	9,807	4.5	72,557	7.0	133,096	9.5
Red	283,687	10.7	36,417	16.7	203,584	19.6	43,686	3.1
Other	56,485	2.1	10,543	4.8	19,718	1.9	26,224	1.9

TABLE 15.21: NUMBER OF HOLDINGS BY TYPE AND COLOR OF SOIL BY DEVELOPMENT REGION, NEPAL, 2001/02

Type and Color of Soil	Number of holdings					
	Nepal	Development Region				
		Eastern	Central	Western	Mid-Western	Far Western
Total	3,364,139	810,017	1,035,827	715,808	469,527	332,960
Sand	1,457,918	344,968	451,646	258,134	214,701	188,469
Loam	2,006,773	445,750	618,440	419,840	285,029	237,714
Silt	557,458	108,025	182,237	109,131	93,179	64,899
Clay	1,316,369	291,847	412,394	352,934	168,692	90,502
Clay Loam	442,173	87,928	100,435	144,055	70,529	39,227
Total	3,364,139	810,017	1,035,827	715,808	469,527	332,960
Black	1,879,661	422,861	543,980	415,999	282,273	214,549
Brown	2,092,953	504,801	641,559	434,420	291,965	220,208
Yellow	636,853	116,484	235,398	148,021	94,841	42,109
Red	824,529	159,689	223,890	240,229	117,353	83,368
Other	171,191	27,656	68,631	36,243	16,674	21,987
			Percent to total			
Total	100.0	100.0	100.0	100.0	100.0	100.0
Sand	43.3	42.6	43.6	36.1	45.7	56.6
Loam	59.7	55.0	59.7	58.7	60.7	71.4
Silt	16.6	13.3	17.6	15.2	19.8	19.5
Clay	39.1	36.0	39.8	49.3	35.9	27.2
Clay Loam	13.1	10.9	9.7	20.1	15.0	11.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Black	55.9	52.2	52.5	58.1	60.1	64.4
Brown	62.2	62.3	61.9	60.7	62.2	66.1
Yellow	18.9	14.4	22.7	20.7	20.2	12.6
Red	24.5	19.7	21.6	33.6	25.0	25.0
Other	5.1	3.4	6.6	5.1	3.6	6.6

TABLE 15.22: TYPE AND COLOR OF SOIL BY AREA OF HOLDING AND BY DEVELOPMENT REGION, NEPAL, 2001/02

Type and Color of Soil	Area of holding (ha)					
	Nepal	Development Region				
		Eastern	Central	Western	Mid-Western	Far Western
Total	2,654,037.2	795,521.4	750,212.9	512,152.2	370,701.9	225,448.8
Sand	589,454.8	198,603.7	143,884.9	85,893.0	92,982.6	68,090.7
Loam	884,697.4	273,424.2	204,719.3	174,044.6	140,687.1	91,822.2
Silt	167,822.1	53,289.2	36,093.8	28,316.2	35,414.9	14,708.0
Clay	532,488.2	171,695.6	119,527.0	144,043.3	70,175.1	27,047.2
Clay Loam	145,776.7	41,691.6	27,211.7	44,381.3	23,467.1	9,024.9
Total	2,654,037.2	795,521.4	750,212.9	512,152.2	370,701.9	225,448.8
Black	825,307.4	263,072.7	173,057.8	163,487.5	147,847.9	77,841.4
Brown	939,299.4	330,749.7	214,420.7	171,923.1	134,623.4	87,582.5
Yellow	215,460.0	57,059.3	55,618.3	53,486.9	35,727.8	13,567.7
Red	283,687.4	74,556.4	70,311.2	78,761.8	39,307.1	20,750.8
Other	56,485.1	13,266.1	18,028.8	9,019.1	5,220.5	10,950.6
			Percent to total			
Total	100.0	100.0	100.0	100.0	100.0	100.0
Sand	22.2	25.0	19.2	16.8	25.1	30.2
Loam	33.3	34.4	27.3	34.0	38.0	40.7
Silt	6.3	6.7	4.8	5.5	9.6	6.5
Clay	20.1	21.6	15.9	28.1	18.9	12.0
Clay Loam	5.5	5.2	3.6	8.7	6.3	4.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Black	31.1	33.1	23.1	31.9	39.9	34.5
Brown	35.4	41.6	28.6	33.6	36.3	38.8
Yellow	8.1	7.2	7.4	10.4	9.6	6.0
Red	10.7	9.4	9.4	15.4	10.6	9.2
Other	2.1	1.7	2.4	1.8	1.4	4.9

TABLE 15.23: NUMBER AND AREA OF HOLDINGS MADE UNCULTIVABLE DUE TO FLOODING/ EROSION BY SIZE OF HOLDING, NEPAL 2001/02

Particulars	All holdings			Size of holdings with land		
	Total	without land	with land	Small	Medium	Large
Total number of holdings, Nepal	3,364,139	26,700	3,337,439	1,578,919	1,504,323	254,198
% to total number of holdings	100.0	0.8	99.2	46.9	44.7	7.6
Total area of holding (ha), Nepal	2,654,037.1	118.2	2,653,918.9	390,166.6	1,433,624.3	830,127.9
% to total area of holdings	100.0	a	100.0	14.7	54.0	31.3
Land uncultivable due to flood/erosion:						
Number of holdings affected	156,883	215	156,668	45,830	85,802	25,036
% holdings affected to total	4.66	0.81	4.69	2.90	5.70	9.85
Area in ha. affected	30,845.20	40.1	30,805	5,235.90	15,449.80	10,119.40
% area affected to total area	1.16	33.93	1.16	1.34	1.08	1.22

a/Less than 0.1%

TABLE 15.24: NUMBER AND AREA OF LAND MADE UNCULTIVABLE DUE TO FLOODING/SOIL EROSION BY ECOLOGICAL BELT AND DEVELOPMENT REGION, NEPAL, 2001/02

Geographic area	Total				Land made uncultivable due to flooding/soil erosion			
	Number of holdings	%	Area (ha)	%	No. of holdings reporting	% to total holding	Area (ha)	% to total area
NEPAL	3,364,139	100.0	2,654,037.1	100.0	156,883	4.7	30,845.2	1.2
ECOLOGICAL BELT								
Mountain	298,223	100.0	218,706.6	100.0	10,180	3.4	1,495.0	0.7
Hill	1,586,406	100.0	1,038,614.5	100.0	57,570	3.6	6,220.3	0.6
Tarai	1,479,510	100.0	1,396,716.1	100.0	89,134	6.0	23,130.0	1.7
DEVELOPMENT REGION								
Eastern	810,017	100.0	795,521.3	100.0	42,010	5.2	9,976.3	1.3
Central	1,035,827	100.0	750,212.9	100.0	55,753	5.4	11,213.1	1.5
Western	715,808	100.0	512,152.2	100.0	39,184	5.5	6,881.2	1.3
Mid-Western	469,527	100.0	370,702.0	100.0	11,999	2.6	1,595.3	0.4
Far-Western	332,960	100.0	225,448.8	100.0	7,938	2.4	1,179.4	0.5

CHAPTER 16
FARM POPULATION

The total farm population recorded in 2001/02 census of agriculture was 19032.5 thousand. Of these, 9385.8 thousand were males and 9646.7 thousand females. At national level the farm population consisted of 82 percent of total population in 2001/02. As compared to 1991/92, the percentage of farm population has decreased slightly. In 1991/92 the farm population was 88 percent of the total. The male and female populations comprised about 49.3 and 50.7 percent of total farm population in 2001/02.

The farm population has increased by 17 percent in ten year's period between 1991/92 and 2001/02. The sex ratio was 97 males per 100 females in 2001/02 while this was 109 males per 100 females in 1991/92. The average size of farm household was 5.9 persons in 1991/92. It decreased slightly to 5.7 persons in 2001/02. Tarai has the highest average size of 6 persons per farm household compared with 5.3 in the Hills and 5.4 in the Mountains.

Table 16.0 Summary Statistics

Description	1991/92	2001/02
A. Total population	18,491,097	23,151,423
a. Male	9,220,974	11,563,921
b. % of total population	49.9	49.9
c. Female	9,270,123	11,587,502
d. % of total population	50.1	50.1
B. Total farm population	16,258,200	19,032,500
a. % of total population	88	82
b. Males	8,496,800	9,385,817
c. % of farm population	52.3	49.3
d. Female	7,761,400	9,646,691
e. % of farm population	47.7	50.7
C. Sex ratio of farm population	109	97
D. Average size of farm household	5.9	5.7

16.1 Information on farm population

This chapter presents the farm population as collected in the Population Census 2001 of Nepal. The farm population consisted of all household members of agricultural holders as listed during the first phase operation of the Population Census 2001.

In Chapter 1 Background of this report, the population of Nepal has been presented to provide an overall picture of the total population, population distribution of the population in ecological belts and in development regions, population density and population growth of ecological belts and development regions, usual activity of the population 10 years old and over, employment rate, usual activity of employed persons, number of households, number of agricultural holdings and farm population of ecological belts and development regions including the number of households and average household size. Since the Census of Agriculture is directly linked with the Population Census 2001, special tabulations from the population census on farm population were obtained and are presented in this chapter. The farm population was also linked with the data of the census of agriculture to obtain information related to the holding.

16.2 Farm population

In 2001, the total population of Nepal as published in the national report on the Population Census 2001 of Nepal was 23,151,423 of whom 11,563,921 or 49. 95 % were males and 11,587,502 or 50.05% were females. The urban population consisted of 3,227,879 persons, which is 13.94% of the total population. The enumerated rural population was 19,509,055 persons of which about 19,032,500 persons or 97.6% comprised the farm population. Tarai belt farm population consisted of 8.7 million persons in 2001/02 which is 46.56% of the total farm population of Nepal. Hill belt farm population comprised 45.19% while Mountain belt had 8.25% or about 1.6 million people.

Among the sub-ecological belt regions, Central Tarai consisted of 16.1% of the total, which is more than 3 million people, see TABLE 16.2. The second most populous sub-region in Nepal in 2001/02 was Western Hill with 2.5 million people.

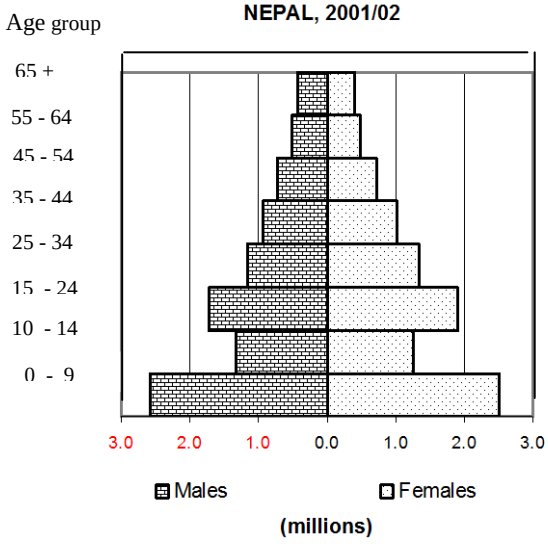
Among development regions, Central region was the most populous with farm population, see TABLE 16.4.

16.3 Age and sex structure

The age-sex pyramid of the population is reflected in Figure 16.1 above where the base of the pyramid consists of the young population 0 to 9 years old of about 5 million persons.

Based on the age group distribution, the

FIGURE 16.1: AGE OF FARM POPULATION, NEPAL, 2001/02



modal age group in 2001 aside from the base of the pyramid was 15 – 24 years old and the computed median age, where half of the population is above and half of the population is below this age was 17.6 years. In other words, the farm population of Nepal is considered young where half of

the population was below 17.6 years old compared with the nation's median age of 20.1 years in 2001.

If we look at the cumulative frequency distribution in TABLE 16.1, about 59.3% were aged below 25 years and 72.5% of the population were aged below 35 years old.

At the younger ages of 0 to 14, the males were dominant but as the age became older, the females dominated up to 44 years of age, then the shift of dominance goes back to the males where more than 50% of them were of ages 55 and over. This age composition of the farm population suggests that the life span of males in the farm is longer than the females where there were more males at the older ages than females.

The potential farm labour force comprised 61.4% of the total farm population. These are the members of the farm population who are at least 15 years old. The young dependency ratio was 72 young persons per 100 persons of productive ages 15 to 64 years while the old dependency ratio was 8 adult persons per 100 persons of productive age. The total dependency ratio, therefore, is 80 persons per 100 persons of productive ages 15 to 64.

16.4 Sex ratio

At the national level the sex ratio in 2001/02 was considered low where females outnumbered the males with a sex ratio of 97.3, i.e. there were 973 males for every 1000 females. It is on the age group of from 15 to 44 years of age where the females outnumbered the males. This age is considered the prime age for both males and females where the bulk of the labour force comes from. By ecological belt, Tarai belt reported the highest sex ratio of 102.4 which means that the males outnumbered the females in this area compared with 92.3 sex ratio in the Hill belt area . The low sex ratio is indicative of out-migration of the male population. The Mountain belt also has a low sex ratio of 97.3, which is the same as the national average sex ratio.

Among the sub-ecological regions of Tarai belt, only Mid-Western Tarai reported less than 100 sex ratio but it is almost one-to-one, i.e. 996 males to 1000 females while Central Tarai reported the highest sex ratio of 105.6. Eastern Tarai, Western Tarai and Far Western Tarai reported a sex ratio of more than 100.

In the hill belt area, all sub-ecological regions reported low sex ratios. In fact the lowest sex ratio was reported in Western hill at 84.6. This means that there were more females in these sub-ecological regions.

In the Mountain belt area, only Mid-Western Mountain reported a high sex ratio of 104.1, and all the rest of the mountain regions have low sex ratios, see TABLE 16.2.

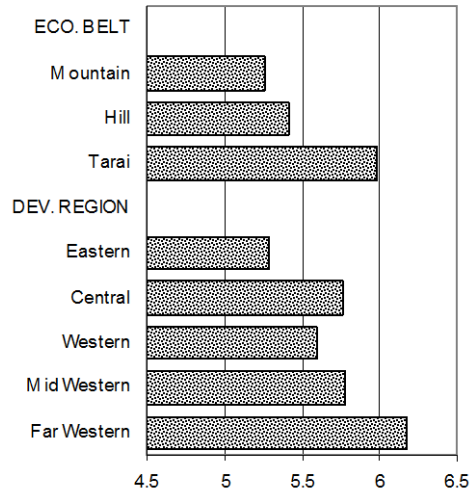
16.5 Household size

The average number of persons per holder's household was 5.7 in 2001, which was a little bit lower than in 1991/92 which was 5.9 persons per household. The national average household size for the entire population in Nepal in 2001 was 5.4 persons, lower than the average household size of the farm population.

Among ecological belt, Tarai belt yielded the highest average household size of 6 persons compared with 5.4 and 5.3 persons for Hill belt and Mountain belt, respectively. Central Mountain sub-ecological region exhibited the lowest average size of 4.8 persons while Far-Western Tarai reported the highest average household size of 6.9 persons.

For development regions, Far-Western region reported the highest average of 6.2 persons per household. This high average was attributed to the high average size of

FIGURE 16.2: AVERAGE HOUSEHOLD SIZE, 2001/02



households in Far-Western Tarai considering that Far Western Hill and Far-Western Mountain that comprise the development region reported only an average household size of 5.7 persons, see TABLE 16.4.

On the other hand, the development region that reported the lowest average household size in 2001 was the Eastern Development Region with 5.3 persons, which is much lower than the national average for the farm population.

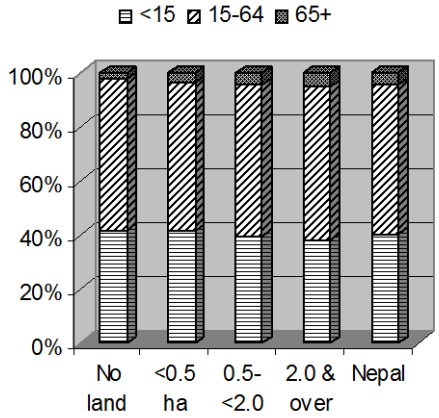
16.6 Comparison of small and large holdings

Holdings with no land and small holdings have similar population characteristics in terms of the age distribution of the farm population while the medium-sized and large holdings have similarity in the age structure of their farm population.

For ages less than 10 years old (0 – 9 years of age), the large and medium-sized holdings reported a much lower proportion than the small holdings and the holding with no land. Also for the farm population of less than 15 years old, the small holdings have higher proportion than the large holdings. In contrast, the proportion of the elderly population of 65 years and over was higher among the large holdings than the small holdings. Furthermore, the proportion of the population belonging to the productive age of 15 to 64 years was slightly higher than the small holdings at 56.4% compared with 54.7% for the small holdings.

What is peculiar among the different holding sizes is the high average household

FIGURE 16.3: AGE DISTRIBUTION BY SIZE OF HOLDING, NEPAL, 2001



size for the large holdings. In 2001/02, the average household size for the large holdings was 7.8 persons compared with only 4.9 persons for holdings without land and 5 persons for small holdings. This observation was also true in 1991/92 where the average household size for the large holdings was 8.3 persons compared with 5.1 persons for the small holdings.

16.7 Some characteristics of districts

The top ten ranking districts on farm population are all found in Tarai belt. Four of these districts have a total farm population of more than half a million each. The top ten according to their farm population size are the following: (1) Rupandehi, 573,636; (2) Morang, 567,942; (3) Kailali, 552,297; (4) Nawalparasi, 505,991; (5) Dhanusha, 501,608; (6) Sarlahi, 489,948; (7) Jhapa, 480418; (8) Bara, 456,508: (9) Siraha, 453,417; and (10) Rautahat, 445,183.

The district of Kavre with a farm population of 362,298 topped the population within the hill belt area but it ranked only 17th among all the districts of the country. The second top ranking district in Hill belt is the district of Dhading with a population of 328,814 but it is also ranked 22 in the overall ranking of districts on farm population size. It may be noted that most of the top ranking districts have a high sex ratio of more than 100. Of the top ten, only Morang, Nawalparasi and Jhapa reported a sex ratio of 98, 96 and 98, respectively, see TABLE 16.10.

It is also observed that the average household size is on the high side except the following: Morang (4.9) and Jhapa (4.6), Dhanusha (5.7) and Siraha (5.7). All the rest are above the national average of 5.7 persons per household.

It is further observed that districts with the most number of agricultural holdings were found in Tarai belt with the district of Morang reporting the most number of 115,162 holdings followed by Jhapa with 104,654 holdings. The two districts with the least number of holdings and less than 50,000 in 2001/02 were the districts of Bardiya (47,520 holdings) and Banke (49,375 holdings).

Among the districts in Mountain belt, Sindhupalchok reported the most number of farm population of 282,329 comprising 18% of the total farm population in the belt. It also reported the highest number of holdings with 57,360, which is almost the same number of holdings reported in the district of Kapilvastu in Tarai belt. The least populated district in 2001 was the district of Manang with a population of 8,062 persons. Furthermore, the second district that reported the most number of holdings in Mountain belt was Dolakha with 40,396 holdings. Take note that the number of holdings is much lower than the district with the lowest number of holdings in Tarai (Bardiya). In other words, the number of holdings in the different districts of Mountain belt except Sundhupalchok is lower than the lowest number of holdings in Tarai belt districts.

In the Mountain belt, the district of Darchula reported the highest average household size at 6 and the district of Mustang reported the least, 4.4 persons per household, see TABLE 16.9.

TABLE 16.1: AGE AND SEX COMPOSITION OF FARM POPULATION, NEPAL, 2001

(In thousand except percent)

Age group	Sex					
	Males	%	Females	%	Both Sexes	%
0 – 9	2,571.4	27.4	2,507.1	26.0	5,078.5	26.7
10 – 14	1,321.5	14.1	1,259.6	13.1	2,581.1	13.6
15 – 24	1,726.0	18.4	1,910.0	19.8	3,636.0	19.1
25 – 34	1,160.1	12.4	1,340.4	13.9	2,500.5	13.1
35 – 44	940.2	10.0	1,017.7	10.5	1,957.9	10.3
45 – 54	727.0	7.7	724.9	7.5	1,451.9	7.6
55 – 64	511.7	5.5	477.9	5.0	989.6	5.2
65 and over	428.0	4.6	409.0	4.2	837.0	4.4
Total farm population	9,385.8	100.0	9,646.7	100.0	19,032.5	100.0
	Cumulative frequency distribution					
0 – 9	2,571.4	27.4	2,507.1	26.0	5,078.5	26.7
10 – 14	3,892.9	41.5	3,766.7	39.0	7,659.6	40.2
15 – 24	5,618.8	59.9	5,676.7	58.8	11,295.5	59.3
25 – 34	6,778.9	72.2	7,017.1	72.7	13,796.1	72.5
35 – 44	7,719.1	82.2	8,034.8	83.3	15,754.0	82.8
45 – 54	8,446.1	90.0	8,759.7	90.8	17,205.9	90.4
55 – 64	8,957.8	95.4	9,237.7	95.8	18,195.5	95.6
65 and over	9,385.8	100.0	9,646.7	100.0	19,032.5	100.0
	Percent to total population by age group					
Less than 10	2,571.4	50.6	2,507.1	49.4	5,078.5	100.0
10 – 14	1,321.5	51.2	1,259.6	48.8	2,581.1	100.0
15 – 24	1,726.0	47.5	1,910.0	52.5	3,636.0	100.0
25 – 34	1,160.1	46.4	1,340.4	53.6	2,500.5	100.0
35 – 44	940.2	48.0	1,017.7	52.0	1,957.9	100.0
45 – 54	727.0	50.1	724.9	49.9	1,451.9	100.0
55 – 64	511.7	51.7	477.9	48.3	989.6	100.0
65 and over	428.0	51.1	409.0	48.9	837.0	100.0
Total farm population	9,385.8	49.3	9,646.7	50.7	19,032.5	100.0

TABLE 16.2. DISTRIBUTION OF FARM POPULATION WITH SELECTED CHARACTERISTICS, BY GEOGRAPHIC AREA, NEPAL, 2001

Geographic area	Farm Population				Sex Ratio	Average household Size	Total number of holding
	Total	%	Male	Female			
NEPAL	19,032,500	100.00	9,385,817	9,646,691	97.3	5.7	3,364,139
MOUNTAIN BELT	1,569,827	8.25	774,291	795,536	97.3	5.3	298,223
Eastern Mountain	384,338	2.02	187,763	196,575	95.5	5.4	71,343
Central Mountain	511,801	2.69	252,519	259,282	97.4	4.9	105,487
Western Mountain	19,754	0.10	9,818	9,936	98.8	4.8	4,155
Mid-Western Mountain	274,418	1.44	139,987	134,431	104.1	5.5	50,201
Far –Western Mountain	379,512	1.99	184,203	195,309	94.3	5.7	67,037
HILL BELT	8,601,4449	45.19	4,129,408	4,472,041	92.3	5.4	1,586,406
Eastern Hill	1,558,118	8.19	761,660	796,458	95.6	5.5	282,773
Central Hill	2,394,696	12.58	1,176,888	1,217,808	96.6	5.6	429,226
Western Hill	2,482,539	13.04	1,137,731	1,344,808	84.6	5.1	485,193
Mid-Western Hill	1,392,817	7.32	681,351	711,466	95.8	5.5	253,931
Far-Western Hill	773,280	4.06	371,772	401,508	92.6	5.7	135,283
TARAI BELT	8,861,232	46.56	4,482,119	4,379,113	102.4	6.0	1,479,510
Eastern Tarai	2,337,774	12.28	1,173,520	1,164,254	100.8	5.1	455,901
Central Tarai	3,064,411	16.10	1,573,615	1,490,796	105.6	6.1	501,114
Western Tarai	1,506,729	7.92	757,478	749,251	101.1	6.7	226,460
MidWestern Tarai	1,047,273	5.50	522,570	524,703	99.6	6.3	165,395
Far western Tarai	905,038	4.76	454,935	450,103	101.1	6.9	130,640

Note: Details may not add up to total due to rounding.
Source of basic data: National Population Census 2001, Nepal.

TABLE 16.3: PERCENTAGE DISTRIBUTION OF FARM POPULATION BY ECOLOGICAL BELT, NEPAL, 2001.

Percent range	Ecological belt			Nepal
	Mountain	Hill	Tarai	
Percent of population aged:				
Less than 10	27.2	26.3	26.9	26.7
Less than 15	40.8	40.5	39.9	40.2
15 to 64	54.9	54.7	56.1	55.4
65 and over	4.4	4.8	4.0	4.4

TABLE 16.4. DISTRIBUTION OF FARM POPULATION WITH SELECTED CHARACTERISTICS BY GEOGRAPHIC AREA, NEPAL, 2001

Geographic area	Farm Population				Sex Ratio	Average household Size	Total number of holdings	%
	Total	%	Male	Female				
NEPAL	19,032,500	100.00	9,385,817	9,646,691	97.3	5.7	3,364,139	100.00
EASTERN DEV. REGION	4,280,230	22.49	2,122,943	2,157,287	98.4	5.3	810,017	24.08
Eastern Mountain	384,338	2.02	187,763	196,575	95.5	5.4	71,343	2.12
Eastern Hill	1,558,118	8.19	761,660	796,458	95.6	5.5	282,773	8.41
Eastern Tarai	2,337,774	12.28	1,173,520	1,164,254	100.8	5.1	455,901	13.55
CENTRAL DEV. REGION	5,970,908	31.37	3,003,022	2,967,886	101.2	5.8	1,035,827	30.79
Central Mountain	511,801	2.69	252,519	259,282	97.4	4.9	105,487	3.14
Central Hill	2,394,696	12.58	1,176,888	1,217,808	96.6	5.6	429,226	12.76
Central Tarai	3,064,411	16.10	1,573,615	1,490,796	105.6	6.1	501,114	14.90
WESTERN DEV REGION	4,009,022	21.06	1,905,027	2,103,995	90.5	5.6	715,808	21.28
Western Mountain	19,754	0.10	9,818	9,936	98.8	4.8	4,155	0.12
Western Hill	2,482,539	13.04	1,137,731	1,344,808	84.6	5.1	485,193	14.42
Western Tarai	1,506,729	7.92	757,478	749,251	101.1	6.7	226,460	6.73
MID-WESTERN DEV. REGION	2,714,508	14.26	1,343,908	1,370,600	98.1	5.8	469,527	13.96
Mid-Western Mountain	274,418	1.44	139,987	134,431	104.1	5.5	50,201	1.49
Mid-Western Hill	1,392,817	7.32	681,351	711,466	95.8	5.5	253,931	7.55
Mid-Western Tarai	1,047,273	5.50	522,570	524,703	99.6	6.3	165,395	4.92
FAR-WESTERN DEV. REGION	2,057,830	10.81	1,010,910	1,046,920	96.6	6.2	332,960	9.90
Far-Western Mountain	379,512	1.99	184,203	195,309	94.3	5.7	67,037	1.99
Far-Western Hill	773,280	4.06	371,772	401,508	92.6	5.7	135,283	4.02
Far-Western Tarai	905,038	4.76	454,935	450,103	101.1	6.9	130,640	3.88

Note: Details may not add up to total due to rounding.
Source of basic data: National Population Census 2001, Nepal.

TABLE 16.5: PERCENTAGE DISTRIBUTION OF FARM POPULATION BY DEVELOPMENT REGION, NEPAL, 2001

Percent range	Development region					
	Eastern	Central	Western	Mid-Western	Far–Western	Nepal
Percent of population aged:						
Less than 10	25.3	26.3	26.3	28.6	28.9	26.7
Less than 15	38.6	39.4	40.5	42.6	42.8	40.2
15 to 64	56.9	56.0	54.2	54.5	53.6	55.4
65 and over	4.5	4.6	5.3	3.0	3.6	4.4

TABLE 16.6: DISTRIBUTION OF FARM POPULATION BY SIZE OF HOLDING, NEPAL, 2001

Particulars	Size of holding				
	No land	<0.5 ha	0.5 - 2.0 ha	2.0 ha & over	Total
Sex ratio (Males per 100 females)	102.5	96.8	97.0	100.1	97.3
Percent of population aged:					
Less than 10	28.5	27.6	26.1	25.8	26.7
Less than 15	42.0	41.3	39.7	38.3	40.2
15 to 64	55.6	54.7	55.7	56.4	55.4
65 and over	2.4	3.9	4.6	5.3	4.4
Average household size	4.9	5.0	6.0	7.8	5.7

TABLE 16.7: AGE-SEX COMPOSITION OF FARM POPULATION BY ECOLOGICAL BELT, NEPAL, 2001

(In thousand except percent)

Age group	Nepal		Mountain		Hill		Tarai	
	Population	%	Population	%	Population	%	Population	%
ALL AGES	19,032.5	100.0	1,569.8	100.0	8,601.4	100.0	8,861.2	100.0
0 – 9	5,078.5	26.7	427.0	27.2	2,265.9	26.3	2,385.5	26.9
10 – 14	2,581.1	13.6	212.8	13.6	1,216.9	14.1	1,151.4	13
15 – 24	3,636.0	19.1	292.0	18.6	1,658.7	19.3	1,685.3	19
25 – 34	2,500.5	13.1	200.6	12.8	1,061.9	12.3	1,238.0	14
35 – 44	1,957.9	10.3	161.7	10.3	855.3	9.9	941.0	10.6
45 – 54	1,451.9	7.6	121.1	7.7	659.1	7.7	671.7	7.6
55 – 64	989.6	5.2	85.7	5.5	468.9	5.5	435.0	4.9
65 and over	837.0	4.4	68.9	4.4	414.8	4.8	353.3	4
MALE	9,385.8	100.0	774.3	100.0	4,129.4	100.0	4,482.1	100.0
0 – 9	2,571.4	27.4	214.9	27.7	1,141.3	27.6	1,215.2	27.1
10 – 14	1,321.5	14.1	108.1	14.0	613.1	14.8	600.3	13.4
15 – 24	1,726.0	18.4	139.8	18.1	754.9	18.3	831.2	18.5
25 – 34	1,160.1	12.4	94.1	12.2	466.9	11.3	599.1	13.4
35 – 44	940.2	10.0	78.2	10.1	391.8	9.5	470.2	10.5
45 – 54	727.0	7.7	60.5	7.8	315.7	7.6	350.8	7.8
55 – 64	511.7	5.5	43.6	5.6	235.9	5.7	232.2	5.2
65 and over	428.0	4.6	35.1	4.5	209.8	5.1	183.1	4.1
FEMALE	9,646.7	100.0	795.5	100.0	4,472.0	100.0	4,379.1	100.0
0 – 9	2,507.1	26.0	212.2	26.7	1,124.7	25.1	1,170.3	26.7
10 – 14	1,259.6	13.1	104.7	13.2	603.9	13.5	551.0	12.6
15 – 24	1,910.0	19.8	152.1	19.1	903.7	20.2	854.1	19.5
25 – 34	1,340.4	13.9	106.5	13.4	595.0	13.3	638.9	14.6
35 – 44	1,017.7	10.5	83.5	10.5	463.4	10.4	470.8	10.8
45 – 54	724.9	7.5	60.6	7.6	343.4	7.7	320.9	7.3
55 – 64	477.9	5.0	42.1	5.3	233.0	5.2	202.8	4.6
65 and over	409.0	4.2	33.8	4.2	205.0	4.6	170.3	3.9

TABLE 16.8: AGE-SEX COMPOSITION OF FARM POPULATION BY DEVELOPMENT REGION, NEPAL 2001

(In thousand except percent)

Age group	Nepal		Eastern		Central		Western		Mid-western		Far-western	
	Population	%	Population	%	Population	%	Population	%	Population	%	Population	%
ALL AGES	19,032.5	100.0	42,802.4	100	5,970.9	100	4,009.0	100	2,714.5	100	2,057.8	100
0 – 9	5,078.5	26.7	10,813.9	25.3	1,570.4	26.3	1,056.2	26.3	775.6	28.6	594.8	28.9
10 – 14	2,581.1	13.6	5,699.2	13.3	779.2	13.1	566.8	14.1	379.4	14	285.7	13.9
15 – 24	3,636.0	19.1	8,408.0	19.6	1,118.3	18.7	754.4	18.8	526.9	19.4	395.6	19.2
25 – 34	2,500.5	13.1	5,750.9	13.4	822.7	13.8	477.1	11.9	358.4	13.2	267.3	13
35 – 44	1,957.9	10.3	4,622.3	10.8	635.2	10.6	395.8	9.9	269.0	9.9	195.7	9.5
45 – 54	1,451.9	7.6	3,363.8	7.9	456.1	7.6	316.6	7.9	197.4	7.3	145.4	7.1
55 – 64	989.6	5.2	2,210.6	5.2	313.6	5.3	228.6	5.7	126.8	4.7	99.6	4.8
65 and over	837.0	4.4	1,933.8	4.5	275.5	4.6	213.5	5.3	80.8	3	73.8	3.6
MALE	9,385.8	100.0	21,229.5	100	3,003.0	100	1,905.0	100	1,343.9	100	1,010.9	100
0 – 9	2,571.4	27.4	5,481.6	25.8	795.9	26.5	535.5	28.1	390.0	29	301.8	29.9
10 – 14	1,321.5	14.1	2,908.3	13.7	404.0	13.5	286.9	15.1	194.1	14.4	145.6	14.4
15 – 24	1,726.0	18.4	4,056.2	19.1	551.5	18.4	335.7	17.6	246.4	18.3	186.7	18.5
25 – 34	1,160.1	12.4	2,695.6	12.7	397.3	13.2	197.7	10.4	170.6	12.7	124.9	12.4
35 – 44	940.2	10.0	2,250.9	10.6	316.5	10.5	173.6	9.1	131.6	9.8	93.4	9.2
45 – 54	727.0	7.7	1,701.4	8	235.3	7.8	150.0	7.9	100.2	7.5	71.3	7.1
55 – 64	511.7	5.5	1,152.4	5.4	162.8	5.4	115.3	6.1	67.7	5	50.6	5
65 and over	428.0	4.6	983.2	4.6	139.6	4.6	110.3	5.8	43.2	3.2	36.5	3.6
FEMALE	9,646.7	100.0	21,572.9	100	2,967.9	100	2,104.0	100	1,370.6	100	1,046.9	100
0 – 9	2,507.1	26.0	5,332.3	24.7	774.5	26.1	520.8	24.8	385.6	28.1	293.0	28
10 – 14	1,259.6	13.1	2,790.9	12.9	375.3	12.6	279.9	13.3	185.3	13.5	140.0	13.4
15 – 24	1,910.0	19.8	4,351.8	20.2	566.7	19.1	418.7	19.9	280.5	20.5	208.9	20
25 – 34	1,340.4	13.9	3,055.3	14.2	425.4	14.3	279.3	13.3	187.8	13.7	142.4	13.6
35 – 44	1,017.7	10.5	2,371.3	11	318.6	10.7	222.3	10.6	137.4	10	102.2	9.8
45 – 54	724.9	7.5	1,662.4	7.7	220.7	7.4	166.6	7.9	97.2	7.1	74.1	7.1
55 – 64	477.9	5.0	1,058.3	4.9	150.7	5.1	113.3	5.4	59.1	4.3	49.0	4.7
65 and over	409.0	4.2	950.6	4.4	135.9	4.6	103.2	4.9	37.6	2.7	37.3	3.6

TABLE 16.9: DISTRIBUTION OF FARM POPULATION WITH SELECTED CHARACTERISTICS BY DISTRICT, NEPAL, 2001

District	Total no. of holdings	Percent	Farm population				Sex ratio	Average household size
			Total	Percent	Male	Female		
NEPAL	3,364,139	100.0	19,032,508	100.0	9,385,817	9,646,691	97	5.7
MOUNTAIN BELT	298,223	100.0	1,569,827	100.0	774,291	795,536	97	5.3
TAPLEJUNG	22,870	7.7	129,150	8.2	63,082	66,068	95	5.6
SANKHUWASABHA	28,227	9.5	151,815	9.7	73,991	77,824	95	5.4
SOLUKHUMBU	20,246	6.8	103,374	6.6	50,691	52,683	96	5.1
DOLAKHA	40,396	13.5	188,506	12.0	91,818	96,688	95	4.7
SINDHUPALCHOK	57,360	19.2	282,329	18.0	139,983	142,346	98	4.9
RASUWA	7,731	2.6	40,967	2.6	20,719	20,248	102	5.3
MANANG	1,470	0.5	8,062	0.5	4,011	4,051	99	5.5
MUSTANG	2,685	0.9	11,690	0.7	5,805	5,885	99	4.4
DOLPA	5,399	1.8	26,590	1.7	13,262	13,328	100	4.9
JUMLA	14,875	5.0	80,486	5.1	41,188	39,298	105	5.4
KALIKOT	15,512	5.2	87,631	5.6	44,918	42,713	105	5.6
MUGU	7,633	2.6	39,542	2.5	19,912	19,630	101	5.2
HUMLA	6,782	2.3	40,170	2.6	20,708	19,462	106	5.9
BAJURA	19,557	6.6	97,435	6.2	47,751	49,684	96	5.0
BAJHANG	27,607	9.3	163,584	10.4	78,820	84,764	93	5.9
DARCHULA	19,873	6.7	118,496	7.5	57,632	60,864	95	6.0
HILL BELT	1,586,406	100.0	8,601,449	100.0	4,129,408	4,472,041	92	5.4
PANCHTHAR	34,100	2.1	192,382	2.2	93,771	98,611	95	5.6
ILAM	48,490	3.1	263,350	3.1	131,895	131,455	100	5.4
DHANKUTA	28,374	1.8	152,603	1.8	73,762	78,841	94	5.4
TERHATHUM	19,293	1.2	109,210	1.3	52,903	56,307	94	5.7
BHOJPUR	37,042	2.3	196,358	2.3	94,234	102,124	92	5.3
OKHALDUNGA	29,019	1.8	153,600	1.8	73,464	80,136	92	5.3
KHOTANG	41,373	2.6	227,111	2.6	110,382	116,729	95	5.5
UDAYAPUR	45,082	2.8	263,502	3.1	131,250	132,252	99	5.8
SINDHULI	46,295	2.9	260,419	3.0	129,256	131,163	99	5.6
RAMECHHAP	38,800	2.4	207,891	2.4	98,090	109,801	89	5.4
KAVRE	64,570	4.1	362,298	4.2	175,441	186,857	94	5.6
LALITPUR	32,594	2.1	175,788	2.0	87,136	88,652	98	5.4
BHAKTAPUR	25,748	1.6	161,142	1.9	80,389	80,753	100	6.3
KATHMANDU	53,624	3.4	282,159	3.3	140,630	141,529	99	5.3
NUWAKOT	49,775	3.1	277,276	3.2	136,372	140,904	97	5.6
DHADING	58,749	3.7	323,814	3.8	157,540	166,274	95	5.5
MAKWANPUR	59,071	3.7	343,907	4.0	172,039	171,868	100	5.8
GORKHA	54,638	3.4	273,880	3.2	126,754	147,126	86	5.0
LAMJUNG	31,914	2.0	161,232	1.9	75,102	86,130	87	5.1
TANAHU	54,221	3.4	284,601	3.3	131,396	153,205	86	5.2
SYANGJA	55,914	3.5	288,875	3.4	129,147	159,728	81	5.2
KASKI	51,811	3.3	240,292	2.8	112,235	128,057	88	4.6
MYAGDI	21,537	1.4	104,906	1.2	48,278	56,628	85	4.9
PARBAT	28,498	1.8	144,289	1.7	66,275	78,014	85	5.1
BAGLUNG	48,694	3.1	251,446	2.9	114,523	136,923	84	5.2
GULMI	54,436	3.4	281,480	3.3	125,781	155,699	81	5.2

Continuation.....

TABLE 16.9: FARM POPULATION BY SEX, SEX RATIO, AVERAGE HOUSEHOLD SIZE AND BY DISTRICT, NEPAL, 2001

District	Total no. of holdings	Percent	Farm population				Sex ratio	Average household size
			Total	Percent	Male	Female		
HILL BELT (Continued)								
PALPA	44,406	2.8	248,982	2.9	114,866	134,116	86	5.6
ARGHAKHANCHI	39,124	2.5	202,557	2.4	93,374	109,183	86	5.2
ROLPA	36,830	2.3	204,138	2.4	98,148	105,990	93	5.5
RUKUM	32,499	2.0	184,391	2.1	93,165	91,226	102	5.7
SALYAN	35,900	2.3	201,118	2.3	100,665	100,453	100	5.6
SURKHET	48,314	3.0	245,728	2.9	120,607	125,121	96	5.1
DAILEKH	38,830	2.4	217,708	2.5	106,165	111,543	95	5.6
JAJARKOT	23,671	1.5	133,089	1.5	67,553	65,536	103	5.6
ACHHAM	42,388	2.7	225,625	2.6	105,565	120,060	88	5.3
DOTI	33,286	2.1	195,289	2.3	96,713	98,576	98	5.9
DADELDHURA	20,620	1.3	122,089	1.4	58,457	63,632	92	5.9
BAITADI	38,989	2.5	230,281	2.7	111,039	119,242	93	5.9
TARAI BELT	1,479,510	100.0	8,861,232	100.0	4,482,119	4,379,113	102	6.0
JHAPA	104,654	7.1	480,418	5.4	237,328	243,090	98	4.6
MORANG	115,162	7.8	567,942	6.4	281,034	286,908	98	4.9
SUNSARI	81,680	5.5	405,227	4.6	202,891	202,336	100	5.0
SAPTARI	75,512	5.1	430,782	4.9	219,644	211,138	104	5.7
SIRAHA	78,893	5.3	453,417	5.1	232,628	220,789	105	5.7
DHANUSHA	87,464	5.9	501,608	5.7	260,065	241,543	108	5.7
MAHOTTARI	72,632	4.9	423,982	4.8	220,403	203,579	108	5.8
SARLAHI	85,084	5.8	489,948	5.5	253,050	236,898	107	5.8
RAUTAHAT	67,003	4.5	445,183	5.0	230,092	215,091	107	6.6
BARA	62,280	4.2	456,508	5.2	235,080	221,428	106	7.3
PARSA	55,222	3.7	357,747	4.0	184,995	172,752	107	6.5
CHITWAN	71,429	4.8	389,435	4.4	189,933	199,502	95	5.5
NAWALPARASI	82,825	5.6	505,991	5.7	248,375	257,616	96	6.1
RUPANDEHI	86,303	5.8	573,636	6.5	290,024	283,612	102	6.6
KAPILVASTU	57,332	3.9	427,100	4.8	219,076	208,024	105	7.4
DANG	68,500	4.6	410,861	4.6	201,708	209,153	96	6.0
BANKE	49,375	3.3	293,634	3.3	149,214	144,420	103	5.9
BARDIYA	47,520	3.2	342,779	3.9	171,644	171,135	100	7.2
KAILALI	77,082	5.2	552,297	6.2	277,112	275,185	101	7.2
KANCHANPUR	53,558	3.6	352,737	4.0	177,823	174,914	102	6.6

TABLE 16.10: RANKING OF FARM POPULATION BY SIZE AND BY DISTRICT WITH SELECTED CHARACTERISTICS, NEPAL, 2001

District	Rank	Farm population				Sex ratio	Average household size
		Total	Percent	Male	Female		
NEPAL		19,032,500	100.00	9,385,817	9,646,691	97	5.7
TARAI BELT	1	8,861,232	46.56	4,482,119	4,379,113	102	6.0
HILL BELT	2	8,601,449	45.19	4,129,408	4,472,041	92	5.4
MOUNTAIN BELT	3	1,569,827	8.25	774,291	795,536	97	5.3
RUPANDEHI	1	573,636	3.01	290,024	283,612	102	6.6
MORANG	2	567,942	2.98	281,034	286,908	98	4.9
KAILALI	3	552,297	2.90	277,112	275,185	101	7.2
NAWALPARASI	4	505,991	2.66	248,375	257,616	96	6.1
DHANUSHA	5	501,608	2.64	260,065	241,543	108	5.7
SARLAHI	6	489,948	2.57	253,050	236,898	107	5.8
JHAPA	7	480,418	2.52	237,328	243,090	98	4.6
BARA	8	456,508	2.40	235,080	221,428	106	7.3
SIRAHA	9	453,417	2.38	232,628	220,789	105	5.7
RAUTAHAT	10	445,183	2.34	230,092	215,091	107	6.6
SAPTARI	11	430,782	2.26	219,644	211,138	104	5.7
KAPILVASTU	12	427,100	2.24	219,076	208,024	105	7.4
MAHOTTARI	13	423,982	2.23	220,403	203,579	108	5.8
DANG	14	410,861	2.16	201,708	209,153	96	6.0
SUNSARI	15	405,227	2.13	202,891	202,336	100	5.0
CHITWAN	16	389,435	2.05	189,933	199,502	95	5.5
KAVRE	17	362,298	1.90	175,441	186,857	94	5.6
PARSA	18	357,747	1.88	184,995	172,752	107	6.5
KANCHANPUR	19	352,737	1.85	177,823	174,914	102	6.6
MAKWANPUR	20	343,907	1.81	172,039	171,868	100	5.8
BARDIYA	21	342,779	1.80	171,644	171,135	100	7.2
DHADING	22	323,814	1.70	157,540	166,274	95	5.5
BANKE	23	293,634	1.54	149,214	144,420	103	5.9
SYANGJA	24	288,875	1.52	129,147	159,728	81	5.2
TANAHU	25	284,601	1.50	131,396	153,205	86	5.2
SINDHUPALCHOK	26	282,329	1.48	139,983	142,346	98	4.9
KATHMANDU	27	282,159	1.48	140,630	141,529	99	5.3
GULMI	28	281,480	1.48	125,781	155,699	81	5.2
NUWAKOT	29	277,276	1.46	136,372	140,904	97	5.6
GORKHA	30	273,880	1.44	126,754	147,126	86	5.0
UDAYAPUR	31	263,502	1.38	131,250	132,252	99	5.8
ILAM	32	263,350	1.38	131,895	131,455	100	5.4
SINDHULI	33	260,419	1.37	129,256	131,163	99	5.6
BAGLUNG	34	251,446	1.32	114,523	136,923	84	5.2
PALPA	35	248,982	1.31	114,866	134,116	86	5.6
SURKHET	36	245,728	1.29	120,607	125,121	96	5.1
KASKI	37	240,292	1.26	112,235	128,057	88	4.6
BAITADI	38	230,281	1.21	111,039	119,242	93	5.9
KHOTANG	39	227,111	1.19	110,382	116,729	95	5.5
ACHHAM	40	225,625	1.19	105,565	120,060	88	5.3

Continuation.....

TABLE 16.10: RANKING OF FARM POPULATION BY SIZE AND BY DISTRICT WITH SELECTED CHARACTERISTICS, NEPAL, 2001

District	Rank	Farm population				Sex ratio	Average household size
		Total	Percent	Male	Female		
DAILEKH	41	217,708	1.14	106,165	111,543	95	5.6
RAMECHHAP	42	207,891	1.09	98,090	109,801	89	5.4
PYUTHAN	43	206,643	1.09	95,046	111,597	85	5.5
ROLPA	44	204,138	1.07	98,148	105,990	93	5.5
ARGHAKHANCHI	45	202,557	1.06	93,374	109,183	86	5.2
SALYAN	46	201,118	1.06	100,665	100,453	100	5.6
BHOJPUR	47	196,358	1.03	94,234	102,124	92	5.3
DOTI	48	195,289	1.03	96,713	98,576	98	5.9
PANCHTHAR	49	192,382	1.01	93,771	98,611	95	5.6
DOLAKHA	50	188,506	0.99	91,818	96,688	95	4.7
RUKUM	51	184,391	0.97	93,165	91,226	102	5.7
LALITPUR	52	175,788	0.92	87,136	88,652	98	5.4
BAJHANG	53	163,584	0.86	78,820	84,764	93	5.9
LAMJUNG	54	161,232	0.85	75,102	86,130	87	5.1
BHAKTAPUR	55	161,142	0.85	80,389	80,753	100	6.3
OKHALDUNGA	56	153,600	0.81	73,464	80,136	92	5.3
DHANKUTA	57	152,603	0.80	73,762	78,841	94	5.4
SANKHUWASABHA	58	151,815	0.80	73,991	77,824	95	5.4
PARBAT	59	144,289	0.76	66,275	78,014	85	5.1
JAJARKOT	60	133,089	0.70	67,553	65,536	103	5.6
TAPLEJUNG	61	129,150	0.68	63,082	66,068	95	5.6
DADELDHURA	62	122,089	0.64	58,457	63,632	92	5.9
DARCHULA	63	118,496	0.62	57,632	60,864	95	6.0
TERHATHUM	64	109,210	0.57	52,903	56,307	94	5.7
MYAGDI	65	104,906	0.55	48,278	56,628	85	4.9
SOLUKHUMBU	66	103,374	0.54	50,691	52,683	96	5.1
BAJURA	67	97,435	0.51	47,751	49,684	96	5.0
KALIKOT	68	87,631	0.46	44,918	42,713	105	5.6
JUMLA	69	80,486	0.42	41,188	39,298	105	5.4
RASUWA	70	40,967	0.22	20,719	20,248	102	5.3
HUMLA	71	40,170	0.21	20,708	19,462	106	5.9
MUGU	72	39,542	0.21	19,912	19,630	101	5.2
DOLPA	73	26,590	0.14	13,262	13,328	100	4.9
MUSTANG	74	11,690	0.06	5,805	5,885	99	4.4
MANANG	75	8,062	0.04	4,011	4,051	99	5.5

Note: Details may not add up to total due to rounding.

TABLE 16.11: RANKING OF NUMBER OF HOLDINGS BY DISTRICT SHOWING FARM POPULATION RANKING, SEX RATIO, AND AVERAGE HOUSEHOLD SIZE, NEPAL, 2001

District	Total number of holdings	Percentage distribution	Rank	Farm population			Sex ratio	Average household size
				Total	Percentage distribution	Rank		
NEPAL	3,364,139	100.00		19,032,500	100.00		97	5.7
HILL BELT	1,586,406	47.16	1	8,601,449	45.19	2	92	5.4
TARAI BELT	1,479,510	43.98	2	8,861,232	46.56	1	102	6.0
MOUNTAIN BELT	298,223	8.86	3	1,569,827	8.25	3	97	5.3
MORANG	115,162	3.42	1	567,942	2.98	2	98	4.9
JHAPA	104,654	3.11	2	480,418	2.52	7	98	4.6
DHANUSHA	87,464	2.60	3	501,608	2.64	5	108	5.7
RUPANDEHI	86,303	2.57	4	573,636	3.01	1	102	6.6
SARLAHI	85,084	2.53	5	489,948	2.57	6	107	5.8
NAWALPARASI	82,825	2.46	6	505,991	2.66	4	96	6.1
SUNSARI	81,680	2.43	7	405,227	2.13	15	100	5.0
SIRAHA	78,893	2.35	8	453,417	2.38	9	105	5.7
KAILALI	77,082	2.29	9	552,297	2.90	3	101	7.2
SAPTARI	75,512	2.24	10	430,782	2.26	11	104	5.7
MAHOTTARI	72,632	2.16	11	423,982	2.23	13	108	5.8
CHITWAN	71,429	2.12	12	389,435	2.05	16	95	5.5
DANG	68,500	2.04	13	410,861	2.16	14	96	6.0
RAUTAHAT	67,003	1.99	14	445,183	2.34	10	107	6.6
KAVRE	64,570	1.92	15	362,298	1.90	17	94	5.6
BARA	62,280	1.85	16	456,508	2.40	8	106	7.3
MAKWANPUR	59,071	1.76	17	343,907	1.81	20	100	5.8
DHADING	58,749	1.75	18	323,814	1.70	22	95	5.5
SINDHUPALCHOK	57,360	1.71	19	282,329	1.48	26	98	4.9
KAPILBASTU	57,332	1.70	20	427,100	2.24	12	105	7.4
SYANGJA	55,914	1.66	21	288,875	1.52	24	81	5.2
PARSA	55,222	1.64	22	357,747	1.88	18	107	6.5
GORKHA	54,638	1.62	23	273,880	1.44	30	86	5.0
GULMI	54,436	1.62	24	281,480	1.48	28	81	5.2
TANAHU	54,221	1.61	25	284,601	1.50	25	86	5.2
KATHMANDU	53,624	1.59	26	282,159	1.48	27	99	5.3
KANCHANPUR	53,558	1.59	27	352,737	1.85	19	102	6.6
KASKI	51,811	1.54	28	240,292	1.26	37	88	4.6
NUWAKOT	49,775	1.48	29	277,276	1.46	29	97	5.6
BANKE	49,375	1.47	30	293,634	1.54	23	103	5.9
BAGLUNG	48,694	1.45	31	251,446	1.32	34	84	5.2
ILAM	48,490	1.44	32	263,350	1.38	32	100	5.4
SURKHET	48,314	1.44	33	245,728	1.29	36	96	5.1
BARDIYA	47,520	1.41	34	342,779	1.80	21	100	7.2
SINDHULI	46,295	1.38	35	260,419	1.37	33	99	5.6
UDAYAPUR	45,082	1.34	36	263,502	1.38	31	99	5.8
PALPA	44,406	1.32	37	248,982	1.31	35	86	5.6
ACHHAM	42,388	1.26	38	225,625	1.19	40	88	5.3
KHOTANG	41,373	1.23	39	227,111	1.19	39	95	5.5
DOLAKHA	40,396	1.20	40	188,506	0.99	50	95	4.7
ARGHAKHANCHI	39,124	1.16	41	202,557	1.06	45	86	5.2
BAITADI	38,989	1.16	42	230,281	1.21	38	93	5.9

Continuation.....

TABLE 16.11: RANKING OF NUMBER OF HOLDINGS BY DISTRICT SHOWING FARM POPULATION RANKING, SEX RATIO, AND AVERAGE HOUSEHOLD SIZE, NEPAL, 2001

District	Total number of holdings	Percentage distribution	Rank	Farm population			Sex ratio	Average household size
				Total	Percentage distribution	Rank		
DAILEKH	38,830	1.15	43	217,708	1.14	41	95	5.6
RAMECHHAP	38,800	1.15	44	207,891	1.09	42	89	5.4
PYUTHAN	37,887	1.13	45	206,643	1.09	43	85	5.5
BHOJPUR	37,042	1.10	46	196,358	1.03	47	92	5.3
ROLPA	36,830	1.09	47	204,138	1.07	44	93	5.5
SALYAN	35,900	1.07	48	201,118	1.06	46	100	5.6
PANCHTHAR	34,100	1.01	49	192,382	1.01	49	95	5.6
DOTI	33,286	0.99	50	195,289	1.03	48	98	5.9
LALITPUR	32,594	0.97	51	175,788	0.92	52	98	5.4
RUKUM	32,499	0.97	52	184,391	0.97	51	102	5.7
LAMJUNG	31,914	0.95	53	161,232	0.85	54	87	5.1
OKHALDUNGA	29,019	0.86	54	153,600	0.81	56	92	5.3
PARBAT	28,498	0.85	55	144,289	0.76	59	85	5.1
DHANKUTA	28,374	0.84	56	152,603	0.80	57	94	5.4
SANKHUWASABHA	28,227	0.84	57	151,815	0.80	58	95	5.4
BAJHANG	27,607	0.82	58	163,584	0.86	53	93	5.9
BHAKTAPUR	25,748	0.77	59	161,142	0.85	55	100	6.3
JAJARKOT	23,671	0.70	60	133,089	0.70	60	103	5.6
TAPLEJUNG	22,870	0.68	61	129,150	0.68	61	95	5.6
MYAGDI	21,537	0.64	62	104,906	0.55	65	85	4.9
DADELDHURA	20,620	0.61	63	122,089	0.64	62	92	5.9
SOLUKHUMBU	20,246	0.60	64	103,374	0.54	66	96	5.1
DARCHULA	19,873	0.59	65	118,496	0.62	63	95	6.0
BAJURA	19,557	0.58	66	97,435	0.51	67	96	5.0
TERHATHUM	19,293	0.57	67	109,210	0.57	64	94	5.7
KALIKOT	15,512	0.46	68	87,631	0.46	68	105	5.6
JUMLA	14,875	0.44	69	80,486	0.42	69	105	5.4
RASUWA	7,731	0.23	70	40,967	0.22	70	102	5.3
MUGU	7,633	0.23	71	39,542	0.21	72	101	5.2
HUMLA	6,782	0.20	72	40,170	0.21	71	106	5.9
DOLPA	5,399	0.16	73	26,590	0.14	73	100	4.9
MUSTANG	2,685	0.08	74	11,690	0.06	74	99	4.4
MANANG	1,470	0.04	75	8,062	0.04	75	99	5.5

Note: Details may not add up to total due to rounding.

CHAPTER 17
FARM LABOUR

Of the total farm population of 19,032.5 thousand persons, there were 13,953.0 thousand (73.3%) economically active work force aged 10 years old and above in 2001/02. The labour force participation rate was 70.8 and 71.4 percent in 1991/92 and 2001/02 for the farm population respectively. The participation rate did not change much during the ten years period. About 28.6 percent of the farm population was economically not active in 2001/02. Of the 3,337.4 thousand holdings in Nepal in 2001/02, about 33.8 percent holdings employed agricultural workers which were slightly lower than 35.6 percent in 1991/92.

In 2001/02 the percentage of holdings hiring permanent agricultural workers had gone down compared to that of 1991/92. There were 1.4 percent of holdings hiring permanent agricultural workers in 1991/92. Such holdings declined to only 0.7 percent in 2001/2.

Percentage of holdings employing occasional workers increased only slightly over the decade, 1991/92 to 2001/02. The percentage of holdings employing occasional workers were 31.1 percent and 30.3 percent in 2001/02 and 1991/92 respectively. Holdings employing both occasional and permanent workers were more in 1991/92 with 3.9 percent of the total holdings while it was only 2 percent in 2001/02. About 66.2 percent of the holdings did not hire any agricultural workers on their holdings in 2001/02.

Table 17.0 Summary Statistics

Description		1991/92 numbers ('000)	2001/02 numbers ('000)
A.	Total farm population 10 years old & above	11,843.5	13,954.0
	- Economically active population	8,379.6	9,968.3
	- % of total farm population	70.8	71.4
	- Not economically active population	3,463.9	3,985.7
	- % of total farm population	29.2	28.6
B.	Agriculture workers (%)	100	100
	b1 Holdings employing permanent agricultural works only	1.4	0.7
	b2 Holding employment both permanent and occasional workers	3.9	2.0
	b3 Employing occasional workers only	30.3	31.1
	b4 No workers employed	64.2	66.2

17.1 Usual activity of farm population

Farm population as defined earlier consisted of members of the household of the agricultural holder. Some of the data that are presented in this chapter about the usual activity of the farm population came from the Population Census 2001.

The census inquired about the usual activity status of each person that included both economic and non-economic activities. The usual activity of the person refers to what an individual was doing most of the time during the past twelve months whether working in agriculture/own farm, salary/wage work, working in own economic enterprise, doing extended economic activity, doing household chores, going to school or no work at all. Based on the usual activity of the individual, he or she was classified whether economically active or not.

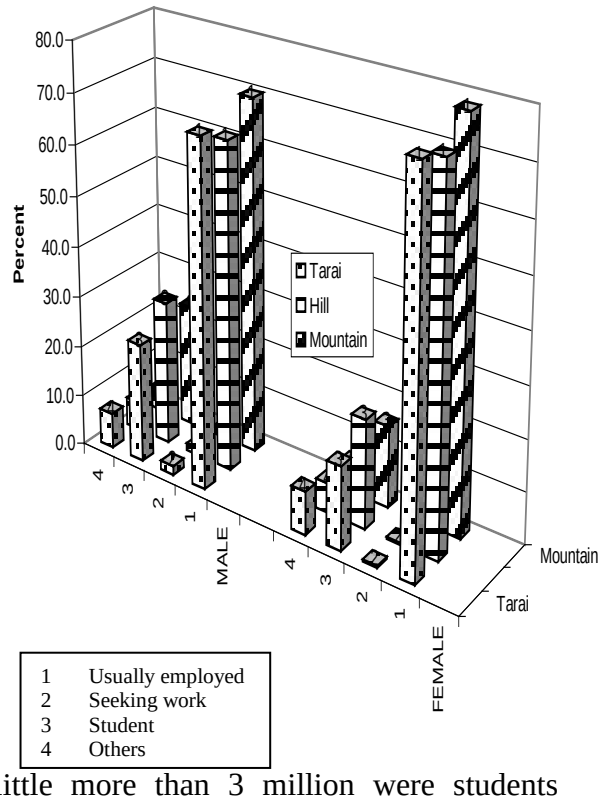
Economically active farm population refers to members of the household of agricultural holdings who are at least 10 years old engaged in any economic activity during the last twelve months or seeking work at any time during the reference period. On the other hand, 'not economically active farm population' refers to members of the household of the agricultural holding who are at least 10 years old who have no economic activity. Economic activity refers to the production of goods and services as defined in the system of national accounts.

Of the total farm population of 19,032 million people, the potential work force aged 10 years old and over consisted of 13.954 million persons or 73.3% of the total farm population in 2001. Females outnumbered the males with a population of 7.14 million or 51.2% of the total.

The economically active population comprised 71.4% of the total, about 10 million persons of whom 9.84 million were usually employed during the past twelve months and 128,400 were seeking work.

The 'not economically active' population numbered almost 4 million persons and a little more than 3 million were students while the rest, were either doing household chores or doing nothing.

FIGURE 17.1: USUAL ACTIVITY OF FARM POPULATION, NEPAL, 2001



The females registered a higher proportion of being economically active at 74.6% compared with only 68.1% among males. It is significant to note that there were more females than males who were usually employed during the past twelve months, see TABLE 17.1

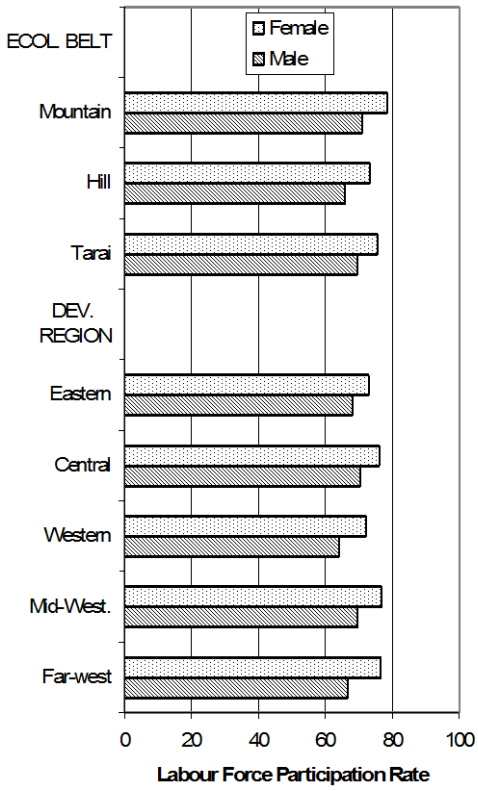
The three ecological belts exhibited the same pattern as the national trend where the females had higher proportion of being economically active than the males. Among the three, Mountain belts reported the highest percentage of females being economically active at 78.4% compared

with Tarai and Hill belts with 75.5% and 73.2%, respectively. Also among the males, Mountain belt reported the highest with 71% economically active followed by Tarai belt with 69.6%. Hill belt reported the lowest, at 65.9%.

17.2 Labour force status of farm population

Based on the labour force concept, the labour force status is classified as either "in the labor force" or "not in the labour force." "In the labor force" consists of the employed and the unemployed. To measure the extent of participation of the population in economic activity, the labour force participation rate is computed, which is the ratio of those in the labour force to the total population 10 years old and over, multiplied by 100 to express it in percent. Those "in the labour force," that consisted of the employed and the unemployed is conceptually the same as the economically active population under the gainful occupation concept.

FIGURE 17.2: LABOUR FORCE PARTICIPATION RATE BY GEOGRAPHIC AREA, NEPAL 2001



In 2001, labour force participation rate was 71.4 % for the farm population at least 10 years old. The female farm population had a higher participation rate in 2001/02 of 74.6%, compared with 68.1% for the males, a difference of 6.5 percentage points.

By ecological belt, the farm population of the Mountain belt registered the highest participation rate of 74.8% compared with Tarai belt with 72.5% participation rate and Hill belt with 69.7%. The participation rate of the female farm population in each of the three belts was much higher than participation rate of the male farm population, see TABLE 17.2.

17.3 Employment and unemployment rates

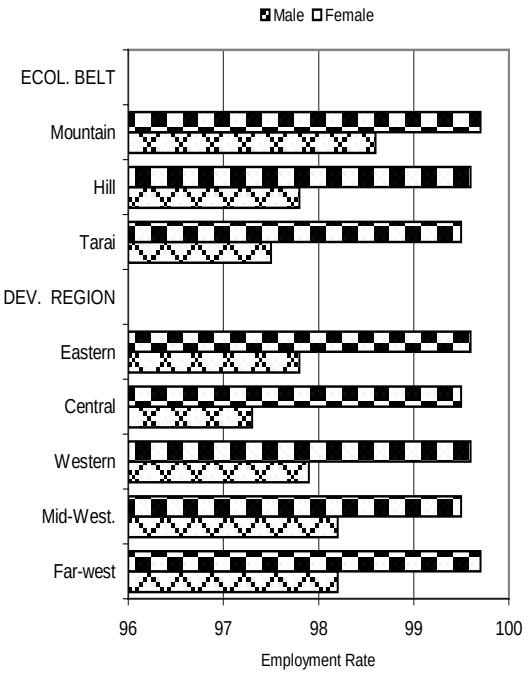
The employment rate is the proportion of the total employed persons to the total population in the labour force multiplied by 100 to translate the proportion to percent. In like manner, the unemployment rate is the proportion of the total unemployed persons to the total population in the labour force, multiplied also by 100 to translate it percent.

In 2001, the employment rate was rather high at 98.7%, therefore, the unemployment rate was 1.3%, which is considered low. The males had lower employment rate than the females but still considered high at 97.7% and the unemployment rate was 2.3%. The female employment rate was 99.6%, therefore the unemployment rate was less than 1%. This simply means that when the female decides to join the labour force, she is more likely to get a job than her male counterpart.

Among the belts, Mountain belt had the highest employment rate of 99.2% followed by Hill belt with 98.8%. Tarai belt yielded the lowest employment rate of 98.6%. In

the three belts, the females registered higher employment rate at 99.7%, 99.6%

FIGURE 17.3: EMPLOYMENT RATE OF FARM POPULATION BY GEOGRAPHIC AREA, 2001



and 99.5% for Mountain, Hill and Tarai belts, respectively. Among the males, Mountain belt had the highest employment rate of 98.6% followed by Hill belt at 97.8% and Tarai belt, 97.5%.

There is not much difference on the level of employment rate among the female farm population in the five development regions, which are all more than 99%. The employment rate of the male population is almost of the same level at about 97% to 98% for the five development regions, see TABLE 17.4.

17.4 Employment of agricultural workers

Of the 3.364 million holdings in Nepal in 2001/02, about 33.8% or 1.138 million holdings did employ agricultural workers. In 1991/92, of the total holdings of 2.736 million, 35.6% or 975,200 holdings had employed agricultural workers. Take note that while the percentage of holdings that hired an agricultural worker in 1991/92 was higher, the number was 16.7% more in 2001/02.

Two classes of workers were usually hired by the holdings, namely: permanent agricultural workers and occasional agricultural workers. Most holdings hired agricultural workers only occasionally, some hired permanent agricultural workers only and some holdings hired both permanent and occasional workers.

Permanent agricultural workers are workers employed permanently by the holding during the reference year. By permanent is meant that the person worked regularly and continuously on the holding for at least six months during the reference year. In mountain areas, a permanent worker was anyone considered permanent by the holder. Permanent workers excluded any members of the holder's household even if the person is unrelated and being paid work on the holding.

On the other hand, occasional agricultural workers are workers employed by the holding who are not considered to be permanent. Occasional workers include only those who work for payment in cash or in goods. Work done in exchange for labour was excluded.

In 2001/02, only 23,200 holdings hired permanent agricultural workers. This number represents only 0.7% of the total holdings.

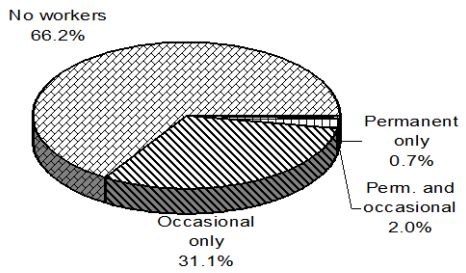
In 1991/92, the proportion of holdings that employed permanent agricultural workers was 1.4%. There was, therefore, a decrease in the number of holdings that employed permanent workers in their holding in 2001/02.

The employment of occasional agricultural workers in 2001/02 reached more than a million holdings, which was 31.1% of the total compared with 830,200 holdings or 30.3% of the total in 1991/92. Holdings

employing both permanent and occasional workers were more in 1991/92 with 106,200 or 3.9% of the total holdings while

FIGURE 17.4: EMPLOYMENT OF PAID LABOUR, NEPAL, 2001/02,

PERCENT OF HOLDINGS



in 2001/02, there were only 68,900 holdings or 2% only of the total, see TABLE 17.5.

17.5 Paid workers at sub-national level

Among ecological belts, Tarai belt reported the highest proportion of holdings employing agricultural workers relative to the total at 40.2%. In the hill belt, the proportion of holdings that employed agricultural workers was 29.6% while Mountain belt reported 25.3% of the holdings employing workers. Furthermore, Tarai belt also reported the highest proportion of employing occasional agricultural workers at 35.8%, which is even higher than that in 1991/92, which was only 34.1%. The Hill belt reported 28.1% and Mountain belt, 233.7%. In terms of the hiring of permanent agricultural workers, Tarai and Hill belts reported the same percentage of 0.7% while Mountain belt reported a slightly lower percentage of 0.6%, see TABLE 17.5.

Among development regions, Central region reported the highest proportion of the number of holdings employing agricultural workers with 44.1% and Far-Western region reported the least, 13.8%, see TABLE 17.6.

In 1991/92, the same trend as observed in 2001/02, i.e. Central region reported 45% of the holding as employing agricultural workers and Far-Western region, reported the lowest with 18.5%. The proportions obtained in 1991/92 were higher than in 2001/02. It does not mean. however, that the actual number is much less in 2001/02.

17.6 Paid workers by size of holding

By size of holding, the large holdings reported the highest proportion of employing agricultural workers at 64% while the small holdings reported only 22.8% of the holdings that employed agricultural workers in 2001/02. Holdings with no land reported the lowest with 5.2%. In 1991/92, the large holdings reported a much higher proportion and the number of large holding employing agricultural workers actually decreased in 2001/02 from 92,700 holdings in 1991/92 to 91,600 holdings in 2001/02, a decrease of 1.2%. On the other hand, there was an increase in the proportion of holdings that employed agricultural workers among the small holdings, percentage-wise and in actual number of holdings, from 21.6% or 913,700 holdings in 1991/92 to 22.8% or 1,218,400 holdings. The increase in the number of holdings employing workers among small holdings was 33.3%, see TABLE 17.7.

17.7 Number of permanent agricultural workers

In 1991/92, there were 301,700 permanent agricultural workers hired by holdings. Of this number, 23.7% were females. At the national level, the sex ratio was 323, i.e. for every 100 females hired, there were 323 males that were employed.

In 2001/02, the number of permanent agricultural workers employed reduced in number to 179,000 persons. There was a decrease of about 40.7% in the number of permanent workers. The sex ratio

increased to 345 males for every 100 female workers.

Of the 179,000 permanent agricultural workers in 2001/02, 125,600 workers or 70.2% were employed in Tarai belt while 41,800 workers or 23.4% were employed in Hill belt, and the rest, (11,600 workers) were in Mountain belt. The Hill belt reported the highest proportion of female workers at 32.8% of the total. The sex ratio was 204 male workers for every 100 female workers. The lowest proportion of female workers was observed in Tarai belt with 18.7%. This trend was also observed in 1991/92.

Among development regions, 70,000 permanent agricultural workers were found in Central region, which consisted of 39% of the total permanent agricultural workers. Other development regions have the following number of permanent workers: Eastern region, 60,400 workers or 33.7%; Mid-Western region, 25,400 workers or 14.2%; Western region, 14,700 workers or 8.2%, and Far-Western region, 8,500 workers or 4.7%.

Mid-Western region exhibited the highest percentage of female permanent agricultural workers with 37.2% and the lowest sex ratio of 169 male workers per 100 female workers.

The lowest proportion of female permanent agricultural workers was in Central region with 19.2% with the highest sex ratio of 420 males for every 100 females.

In 1991/92, Central region employed 101,400 permanent agricultural workers but this number decreased to only 70,000 in 2001/02, a reduction of about 31% in the number of permanent workers. There was also a decrease in Eastern region by about 9,700 between 1991/92 and 2001/02 and the biggest decreases were observed in Mid-Far-Western region by 38,800 workers and Western region by 34,800 workers.

In 1991/92, there were 47,300 permanent agricultural workers in Far-Western region. This number reduced to 8,500 workers only in 2001/02, a decrease of about 82% from 1991/92 figure.

TABLE 17.1 FARM POPULATION 10 YEARS OLD AND OVER BY USUAL ACTIVITY AND BY SEX AND ECOLOGICAL BELT, NEPAL, 2001

(In thousand except percent)

Usual activity status/Sex	Nepal	%	Mountain	%	Hill	%	Tarai	%
Total farm population 10 years old and over	13,954.0	100.0	1,142.8	100.0	6,335.5	100.0	6,475.7	100.0
Economically active	9,968.3	71.4	854.4	74.8	4,418.0	69.7	4,696.0	72.5
Usually employed	9,839.9	70.5	847.5	74.2	4,364.5	68.9	4,627.9	71.5
Seeking work	128.4	0.9	6.9	0.6	53.4	0.8	68.0	1.1
Not economically active	3,985.7	28.6	288.4	25.2	1,917.6	30.3	1,779.8	27.5
Student	3,069.5	22.0	229.4	20.1	1,556.6	24.6	1,283.5	19.8
Others	916.2	6.6	59.0	5.2	360.9	5.7	496.3	7.7
Male, 10 yrs old +	6,814.5	100.0	559.4	100.0	2,988.1	100.0	3,266.9	100.0
Economically active	4,639.4	68.1	397.1	71.0	1,968.8	65.9	2,273.5	69.6
Usually employed	4,534.7	66.5	391.5	70.0	1,925.9	64.5	2,217.4	67.9
Seeking work	104.6	1.5	5.6	1.0	42.9	1.4	56.1	1.7
Not economically active	2,558.7	37.5	162.3	29.0	1,019.4	34.1	993.4	30.4
Student	1,754.8	25.8	136.3	24.4	852.3	28.5	766.1	23.5
Others	803.9	11.8	26.0	4.6	167.0	5.6	227.3	7.0
Female, 10 yrs old +	7,139.5	100.0	583.3	100.0	3,347.4	100.0	3,208.8	100.0
Economically active	5,328.9	74.6	457.2	78.4	2,449.2	73.2	2,422.5	75.5
Usually employed	5,305.2	74.3	456.0	78.2	2,438.6	72.9	2,410.6	75.1
Seeking work	23.7	0.3	1.2	0.2	10.6	0.3	11.9	0.4
Not economically active	1,810.6	25.4	126.1	21.6	898.2	26.8	786.4	24.5
Student	1,314.8	18.4	93.1	16.0	704.3	21.0	517.4	16.1
Others	495.9	6.9	33.0	5.7	193.9	5.8	269.0	8.4

Source of basic data: National Population Census 2001, Nepal, special tabulation by district provided by Population Division, CBS.

TABLE 17.2: LABOUR FORCE STATUS OF FARM POPULATION 10 YEARS OLD AND OVER BY SEX AND BY ECOLOGICAL BELT, NEPAL, 2001

(In thousand except rate)

Labour Force Status/Sex	Nepal		Ecological belt					
	Farm population		Mountain belt		Hill Belt		Tarai belt	
	Total	Rate*	Population	Rate*	Population	Rate*	Population	Rate*
Both sexes	13,954.0	...	1,142.8	...	6,335.5	...	6,475.7	...
In the labour force*	9,968.3	71.4	854.4	74.8	4,418.0	69.7	4,695.9	72.5
Employed**	9,839.9	98.7	847.5	99.2	4,364.5	98.8	4,627.9	98.6
Unemployed***	128.4	1.3	6.9	0.8	53.4	1.2	68.0	1.5
Not in the labour force	3,985.7	28.6	288.4	25.2	1,917.6	30.3	1,779.8	27.5
Male, 10 yrs old & over	6,814.5	...	559.4	...	2,988.1	...	3,266.9	...
In the labour force*	4,639.4	68.1	397.1	71.0	1,968.8	65.9	2,273.5	69.6
Employed**	4,534.7	97.7	391.5	98.6	1,925.9	97.8	2,217.4	97.5
Unemployed***	104.6	2.3	5.6	1.4	42.9	2.2	56.1	2.5
Not in the labour force	2,175.1	31.9	162.3	29.0	1,019.4	34.1	993.4	30.4
Female, 10 yrs old & over	7,139.5	...	583.3	...	3,347.4	...	3,208.8	...
In the labour force*	5,328.9	74.6	457.2	78.4	2,449.2	73.2	2,422.5	75.5
Employed**	5,305.2	99.6	456.0	99.7	2,438.6	99.6	2,410.6	99.5
Unemployed***	23.7	0.4	1.2	0.3	10.6	0.4	11.9	0.5
Not in the labour force	1,810.6	25.4	126.1	21.6	898.2	26.8	786.4	24.5

Rates:

*Labour force participation rate = (Farm population in the labour forcce/ total farm population, 10 yrs old over) x 100

**Employment rate (ER) = (Total employed /Total population in the labour force) x 100.

***Unemployment rate (UR) =(Total unemployed/Total population in the labour force) x 100

Source of basic data: National Population Census 2001, Nepal.

TABLE 17.3 : FARM POPULATION 10 YEARS OLD AND OVER BY USUAL ACTIVITY AND BY SEX AND DEVELOPMENT REGION, NEPAL, 2001

(In thousand except percent)

Usual activity status/Sex	Nepal	%	Eastern	%	Central	%	Western	%	Mid-Western	%	Far-Western	%
10 years old and over	13,954.0	100.0	3,198.8	100.0	4,400.5	100.0	2,952.8	100.0	1,938.9	100.0	1,463.0	100.0
Economically active	9,968.3	71.4	2,255.7	70.5	3,223.5	73.3	2,019.5	68.4	1,419.9	73.2	1,049.7	71.7
Usually employed	9,839.9	70.5	2,227.3	69.6	3,172.2	72.1	1,996.3	67.6	1,404.7	72.4	1,039.4	71.0
Seeking work	128.4	0.9	28.4	0.9	51.2	1.2	23.2	0.8	15.2	0.8	10.3	0.7
Not economically active	3,985.7	28.6	943.1	29.5	1,177.0	26.7	933.3	31.6	518.9	26.8	413.4	28.3
Student	3,069.5	22.0	742.9	23.2	864.1	19.6	729.5	24.7	405.2	20.9	327.9	22.4
Others	916.2	6.6	200.3	6.3	312.9	7.1	203.8	6.9	113.8	5.9	85.5	5.8
Male, 10 yrs old & over	6,814.5	100.0	1,574.8	100.0	2,207.1	100.0	1,369.6	100.0	953.9	100.0	709.1	100.0
Economically active	4,639.4	68.1	1,071.8	68.1	1,554.3	70.4	877.4	64.1	663.1	69.5	472.8	66.7
Usually employed	4,534.7	66.5	1,048.5	66.6	1,511.8	68.5	859.0	62.7	651.4	68.3	464.1	65.4
Seeking work	104.6	1.5	23.2	1.5	42.5	1.9	18.4	1.3	11.8	1.2	8.7	1.2
Not economically active	2,558.7	37.5	834.7	53.0	594.3	26.9	544.3	39.7	332.5	34.9	252.8	35.7
Student	1,754.8	25.8	414.4	26.3	505.8	22.9	397.3	29.0	237.6	24.9	199.7	28.2
Others	803.9	11.8	420.3	26.7	88.6	4.0	147.1	10.7	94.9	9.9	53.1	7.5
Female, 10 yrs old & over	7,139.5	100.0	1,624.1	100.0	2,193.3	100.0	1,583.2	100.0	985.0	100.0	753.9	100.0
Economically active	5,328.9	74.6	1,183.9	72.9	1,669.2	76.1	1,142.1	72.1	756.8	76.8	576.9	76.5
Usually employed	5,305.2	74.3	1,178.7	72.6	1,660.5	75.7	1,137.3	71.8	753.3	76.5	575.3	76.3
Seeking work	23.7	0.3	5.2	0.3	8.7	0.4	4.8	0.3	3.5	0.4	1.6	0.2
Not economically active	1,810.6	25.4	440.1	27.1	524.2	23.9	441.1	27.9	228.2	23.2	177.0	23.5
Student	1,314.8	18.4	328.4	20.2	358.3	16.3	332.2	21.0	167.6	17.0	128.2	17.0
Others	495.9	6.9	111.7	6.9	165.8	7.6	108.9	6.9	60.6	6.2	48.8	6.5

Source of basic data: National Population Census 2001, Nepal, special tabulation by district provided by Population Division, CBS.

TABLE 17.4: LABOUR FORCE STATUS OF FARM POPULATION 10 YEARS OLD AND OVER BY SEX AND BY DEVELOPMENT REGION, NEPAL, 2001

(In thousand except Rate)

Labour Force Status/Sex	Nepal	Rate*	Development region									
			Eastern	Rate*	Central	Rate*	Western	Rate*	Mid-Western	Rate*	Far-Western	Rate*
Total farm population 10 years old and over	13,954.0	...	3,198.8	...	4,400.5	...	2,952.8	...	1,938.9	...	1,463.0	...
In the labour force*	9,968.3	71.4	2,255.7	70.5	3,223.5	73.3	2,019.5	68.4	1,419.9	73.2	1,049.7	71.7
Employed**	9,839.9	98.7	2,227.3	98.7	3,172.2	98.4	1,996.3	98.9	1,404.7	98.9	1,039.4	99.0
Unemployed***	128.4	1.3	28.4	1.3	51.2	1.6	23.2	1.1	15.2	1.1	10.3	1.0
Not in the labour force	3,985.7	28.6	943.1	29.5	1,177.0	26.7	933.3	31.6	518.9	26.8	413.4	28.3
Male, 10 yrs old & over	6,814.5	...	1,574.8	...	2,207.1	...	1,369.6	...	953.9	...	709.1	...
In the labour force*	4,639.4	68.1	1,071.8	68.1	1,554.3	70.4	877.4	64.1	663.1	69.5	472.8	66.7
Employed**	4,534.7	97.7	1,048.5	97.8	1,511.8	97.3	859.0	97.9	651.4	98.2	464.1	98.2
Unemployed***	104.6	2.3	23.2	2.2	42.5	2.7	18.4	2.1	11.8	1.8	8.7	1.8
Not in the labour force	2,558.7	37.5	834.7	53.0	594.3	26.9	544.3	39.7	332.5	34.9	252.8	35.7
Female, 10 yrs old & over	7,139.5	...	1,624.1	...	2,193.3	...	1,583.2	...	985.0	...	753.9	...
In the labour force*	5,328.9	74.6	1,183.9	72.9	1,669.2	76.1	1,142.1	72.1	756.8	76.8	576.9	76.5
Employed**	5,305.2	99.6	1,178.7	99.6	1,660.5	99.5	1,137.3	99.6	753.3	99.5	575.3	99.7
Unemployed***	23.7	0.4	5.2	0.4	8.7	0.5	4.8	0.4	3.5	0.5	1.6	0.3
Not in the labour force	1,810.6	25.4	440.1	27.1	524.2	23.9	441.1	27.9	228.2	23.2	177.0	23.5

*Rates:

*Labour force participation rate (LFPR) = (farm population in the labour forcce/ total farm population, 10 years old over) x 100

**Employment rate (ER) = (Total employed /Total population in the labour force) x 100.

***Unemployment rate (UR) =(Total unemployed/Total population in the labour force) x 100

TABLE 17.5: NUMBER AND PERCENT OF HOLDINGS BY EMPLOYMENT OF AGRICULTURAL WORKERS AND ECOLOGICAL BELT, 1991/92 AND 2001/02

Employment of workers	Ecological belt							
	Mountain		Hill		Tarai		Total	
	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02	1991/92	2001/02
	Number of holdings ('000)							
Employ permanent workers only	2.9	1.8	13.0	10.9	22.9	10.5	38.8	23.2
Employ both perm. & occasional workers	2.7	2.9	24.8	12.2	78.7	53.9	106.2	68.9
Employ occasional workers only	72.7	70.7	376.4	446.0	381.2	529.7	830.2	1,046.4
Holdings employing workers	78.3	75.4	414.2	469.1	482.8	594.1	975.2	1,138.5
No workers employed	182.4	222.8	943.5	1,117.4	634.9	885.4	1,760.8	2,225.6
Total	260.7	298.2	1,357.7	1,586.4	1,117.6	1,479.5	2,736.1	3,364.1
	Percent							
Employ permanent workers only	1.1	0.6	1.0	0.7	2.0	0.7	1.4	0.7
Employ both perm. & occasional workers	1.1	1.0	1.8	0.8	7.0	3.6	3.9	2.0
Employ occasional workers only	27.9	23.7	27.7	28.1	34.1	35.8	30.3	31.1
Holdings employing workers	30.1	25.3	30.5	29.6	43.1	40.1	35.6	33.8
No workers employed	70.0	74.7	69.5	70.4	56.8	59.8	64.4	66.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 17.6: NUMBER AND PERCENT OF HOLDINGS BY EMPLOYMENT OF AGRICULTURAL WORKERS AND DEVELOPMENT REGION, 1991/92 AND 2001/02

Employment of workers	Development region					
	Eastern	Central	Western	Mid-Western	Far Western	Total
	Number of holdings ('000)					
	1991/92					
Employ permanent workers only	7.1	6.7	7.0	5.6	12.3	38.8
Employ both perm. and occasional workers	30.2	44.7	19.1	7.1	5.1	106.2
Employ occasional workers only	230.8	333.1	159.3	75.5	31.5	830.2
No workers employed	368.3	470.9	423.4	283.3	215.1	1,760.8
Total	636.4	855.3	608.8	371.5	264.1	2,736.1
	2001/02					
Employ permanent workers only	6.1	4.4	3.9	5.8	3.0	23.2
Employ both perm. and occasional workers	23.3	32.8	6.3	3.6	2.9	68.9
Employ occasional workers only	310.3	419.2	194.4	82.6	40.0	1,046.4
No workers employed	470.3	579.5	511.2	377.5	287.0	2,225.6
Total	810.0	1,035.8	715.8	469.5	333.0	3,364.1
	Percent					
	1991/92					
Employ permanent workers only	1.1	0.8	1.2	1.5	4.7	1.4
Employ both perm. and occasional workers	4.8	5.2	3.1	1.9	1.9	3.9
Employ occasional workers only	36.3	38.9	26.2	20.3	11.9	30.3
No workers employed	57.9	55.0	69.5	76.3	81.5	64.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
	2001/02					
Employ permanent workers only	0.8	0.4	0.5	1.2	0.9	0.7
Employ both perm. and occasional workers	2.9	3.2	0.9	0.8	0.9	2.0
Employ occasional workers only	38.3	40.5	27.2	17.6	12.0	31.1
No workers employed	58.1	55.9	71.4	80.4	86.2	66.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 17.7: NUMBER AND PERCENT OF HOLDINGS BY EMPLOYMENT OF AGRICULTURAL WORKERS AND SIZE OF HOLDING, NEPAL, 1991/91 AND 2001/02

Employment of workers	Size of holding				
	No land	< 0.5 ha	0.5 - 2.0 ha	2 ha & over	Total
	Number of households ('000)				
	1991/92				
Employ permanent workers only	0.4	9.4	16.5	12.4	38.8
Employ both perm. and occasional workers	...	8.7	38.5	59.0	106.2
Employ occasional workers only	1.9	234.2	461.4	132.7	830.2
No workers employed	29.8	913.7	724.7	92.7	1,760.8
Total	32.1	1,166.0	1,241.1	296.8	2,736.1
	2001/02				
Employ permanent workers only	0.0	9.0	10.1	4.2	23.2
Employ both perm. and occasional workers	0.0	6.1	29.3	33.6	68.9
Employ occasional workers only	1.4	345.5	574.8	124.8	1,046.4
No workers employed	25.3	1,218.4	890.2	91.6	2,225.6
Total	26.7	1,578.9	1,504.3	254.2	3,364.1
	Percent				
	1991/92				
Employ permanent workers only	1.3	0.8	1.3	4.2	1.4
Employ both perm. and occasional workers	0.1	0.7	3.1	19.9	3.9
Employ occasional workers only	6.0	20.1	37.2	44.7	30.3
No workers employed	92.7	78.4	58.4	31.2	64.4
Total	100.0	100.0	100.0	100.0	100.0
	2001/02				
Employ permanent workers only	0.1	0.6	0.7	1.6	0.7
Employ both perm. and occasional workers	0.0	0.4	1.9	13.2	2.0
Employ occasional workers only	5.1	21.9	38.2	49.1	31.1
No workers employed	94.8	77.2	59.2	36.0	66.2
Total	100.0	100.0	100.0	100.0	100.0

TABLE 17.8: NUMBER OF PERMANENT AGRICULTURAL WORKERS EMPLOYED BY SEX ECOLOGICAL AND DEVELOPMENT REGIONS, 2001/02

(In thousand except percent and ratio)

Geographic area	Sex of worker			% female to total	Workers' Sex ratio
	Males	Females	Total		
			1991/92		
NEPAL	230.3	71.4	301.7	23.7	323
ECOLOGICAL BELT					
Mountain	6.3	4.1	10.4	39.4	154
Hill	61.2	21.8	83.0	26.3	281
Tarai	162.8	45.5	208.2	21.9	358
DEVELOPMENT REGIONS					
Eastern	59.7	10.4	70.1	14.8	574
Central	80.5	20.9	101.4	20.6	385
Western	38.6	10.9	49.5	22.0	354
Mid Western	23.7	9.7	33.4	29.0	244
Far Western	27.8	19.5	47.3	41.2	143
			2001/02		
NEPAL	138.7	40.2	179.0	22.5	345
ECOLOGICAL BELT					
Mountain	8.6	3.0	11.6	25.8	287
Hill	28.1	13.7	41.8	32.8	204
Tarai	102.1	23.5	125.6	18.7	434
DEVELOPMENT REGIONS					
Eastern	48.4	12.0	60.4	19.8	405
Central	56.6	13.5	70.0	19.2	420
Western	11.4	3.3	14.7	22.5	345
Mid Western	15.9	9.4	25.4	37.2	169
Far Western	6.4	2.1	8.5	24.2	313

APPENDIX A
SAMPLE SPECIFICATIONS - DISTRICTS

District	District Code	Sample Group	Number of EAs selected	Total holdings	Sample Holdings	Sampling fraction in %	Sample Weight	Adjusted Total holdings	Adjusted Sampling fraction %	Adjusted sample weight
EASTERN MOUNTAIN										
Taplejung	01	2	60	22870	1,448	6.33	15.79	22,870	6.33	15.79
Sankhuwasabha	09	3	70	28227	1,708	6.05	16.53	28,227	6.05	16.53
Solukhumbu	11	1	50	20246	1,233	6.09	16.42	20,246	6.09	16.42
EASTERN HILL										
Panchthar	02	3	70	34100	1,722	5.05	19.80	34,100	5.05	19.80
Ilam	03	3	70	48490	1,725	3.56	28.11	48,490	3.56	28.11
Dhankuta	07	3	70	28374	1,676	5.91	16.93	28,374	5.91	16.93
Terhathum	08	3	70	19293	1,709	8.86	11.29	19,293	8.86	11.29
Bhojpur	10	3	70	37042	1,670	4.51	22.18	37,042	4.51	22.18
Okhaldunga	12	2	60	29019	1,429	4.92	20.31	29,019	4.92	20.31
Khotang	13	3	70	41373	1,696	4.10	24.39	41,373	4.10	24.39
Udayapur	14	3	70	45082	1,755	3.89	25.69	45,082	3.89	25.69
EASTERN TARAI										
Jhapa	04	4	80	81000	2,093	2.58	38.70	104,654	2.00	50.00
Morang	*05*	4	80	92600	2,021	2.18	45.82	115,162	1.75	56.98
Sunsari	06	4	80	59842	2,063	3.45	29.01	81,680	2.53	39.59
Saptari	15	4	80	68200	2,054	3.01	33.20	75,512	2.72	36.76
Siraha	16	4	80	70961	2,080	2.93	34.12	78,893	2.64	37.93
CENTRAL MOUNTAIN										
Dolakha	22	2	59	34594	1,397	4.04	24.76	40,396	3.46	28.92
Sindhupalchok	23	4	80	53975	1,879	3.48	28.73	57,360	3.28	30.53
Rasuwa	29	1	50	7731	1,216	15.73	6.36	7,731	15.73	6.36
CENTRAL HILL										
Sindhuli	20		80	42167	1,985	4.71	21.24	46,295	4.29	23.32
Ramechhap	21	3	70	38825	1,769	4.56	21.95	38,800	4.56	21.93
Kavre	24	4	80	64570	1,944	3.01	33.22	64,570	3.01	33.22
Lalitpur	25	2	60	32594	1,319	4.05	24.71	32,594	4.05	24.71
Bhaktapur	26	1	50	25748	1,124	4.37	22.91	25,748	4.37	22.91
Kathmandu	27	2	60	53624	1,404	2.62	38.19	53,624	2.62	38.19
Nuwakot	28	3	70	49775	1,698	3.41	29.31	49,775	3.41	29.31
Dhading	30	3	70	58749	1,715	2.92	34.26	58,749	2.92	34.26
Makwanpur	31	3	70	59071	1,742	2.95	33.91	59,071	2.95	33.91
CENTRAL TARAI										
Dhanusha	17	4	80	78551	2,036	2.59	38.58	87,464	2.33	42.96
Mahottari	18	4	80	63140	2,053	3.25	30.75	72,632	2.83	35.38
Sarlahi	19	4	80	76067	2,104	2.77	36.15	85,084	2.47	40.44
Rautahat	32	4	80	54658	1,919	3.51	28.48	67,003	2.86	34.92
Bara	33	4	80	62280	1,988	3.19	31.33	62,280	3.19	31.33
Parsa	34	4	80	49582	2,023	4.08	24.51	55,222	3.66	27.30
Chitwan	35	4	80	71429	1,923	2.69	37.14	71,429	2.69	37.14
WESTERN MOUNTAIN										
Manang	41	1	116	904	904	100.00	1.00	1,470	61.50	1.63
Mustang	42	1	50	2411	1,107	45.91	2.18	2,685	41.23	2.43
WESTERN HILL										
Gorkha	36	4	80	54638	1,937	3.55	28.21	54,638	3.55	28.21
Lamiung	37	3	70	31914	1,615	5.06	19.76	31,914	5.06	19.76

APPENDIX A
SAMPLE SPECIFICATIONS - DISTRICTS

District	District Code	Sample Group	Number of EAs selected	Total holdings	Sample Holdings	Sampling fraction in %	Sample Weight	Adjusted Total holdings	Adjusted Sampling fraction %	Adjusted sample weight
WESTERN HILL										
Tanahu	38	3	70	54221	1,571	2.9	34.51	54,221	2.90	34.51
Syangja	39	4	80	55914	1,913	3.4	29.23	55,914	3.42	29.23
Kaski	40	3	70	47200	1,635	3.4	28.87	51,811	3.16	31.69
Myagdi	43	2	60	21537	1,446	6.7	14.89	21,537	6.71	14.89
Parbat	44	3	70	28498	1,646	5.7	17.31	28,498	5.78	17.31
Baglung	45	3	70	48694	1,665	3.4	29.25	48,694	3.42	29.25
Gulmi	46	3	70	54436	1,700	3.1	32.02	54,436	3.12	32.02
Palpa	47	3	70	44406	1,692	3.8	26.24	44,406	3.81	26.24
Arghakhanchi	51	3	70	39124	1,692	4.3	23.12	39,124	4.32	23.12
WESTERN TARAI										
Nawalparasi	48	4	80	82825	2,021	2.4	40.98	82,825	2.44	40.98
Rupandehi	49	4	80	86303	1,926	2.2	44.81	86,303	2.23	44.81
Kapilbastu	50	4	80	57332	1,927	3.3	29.75	57,332	3.36	29.75
MID-WESTERN										
Dolpa	62									
Jumla	63	1	50	11345	1,230	10.84	9.2	14,875	8.27	12.09
Kalikot	64	1	43	1426	1,025	71.88	1.3	15,512	6.61	15.13
Mugu	65	1	20	5342	491	9.1	10.88	7,633	6.43	15.55
Humla	66	1	50	6782	1,209	17.83	5.6	6,782	17.83	5.61
MID-WESTERN HILL										
Pyuthan	52	3	65	37887	1,604	4.2	23.62	37,887	4.23	23.62
Rolpa	53	2	60	36830	1,445	3.9	25.49	36,830	3.92	25.49
Rukum	54	3	68	32499	1,545	4.7	21.03	32,499	4.75	21.03
Salyan	55	3	70	9733	1,764	18.12	5.5	35,900	4.91	20.35
Surkhet	59	3	65	44238	1,546	3.4	28.61	48,314	3.20	31.25
Dailekh	60	2	60	38830	1,407	3.6	27.60	38,830	3.62	27.60
Jajarkot	61	2	60	23671	1,446	6.1	16.37	23,671	6.11	16.37
MID-WESTERN TARAI										
Dang	56	4	79	68467	1,978	2.8	34.67	68,500	2.89	34.63
Banke	57	4	79	43441	1,930	4.4	22.00	49,375	3.91	25.58
Bardiya	58	4	80	47520	2,019	4.2	23.76	47,520	4.25	23.54
FAR-WESTERN										
Bajura	67									
Bajhang	68	2	60	27607	1,394	5.0	18.40	27,607	5.05	19.80
Darchula	75	2	60	19873	1,429	7.1	13.25	19,873	7.19	13.91
FAR-WESTERN HILL										
Achham	69	2	60	42388	1,455	3.4	28.26	42,388	3.43	29.13
Doti	70	3	70	33286	1,689	5.0	19.02	33,286	5.07	19.71
Dadeldhura	73	2	60	20620	1,430	6.9	13.75	20,620	6.94	14.42
Baitadi	74	2	60	38989	1,422	3.6	25.99	38,989	3.65	27.42
FAR-WESTERN TARAI										
Kailali	71	4	79	77082	1,896	2.4	39.03	77,082	2.46	40.66
Kanchanpur	72	4	75	53558	1,835	3.4	28.56	53,558	3.43	29.19