## CONTENTS

1. **INTRODUCTION** .................................................................................................................. 1  
   1.1 Background ....................................................................................................................... 1  
   1.2 Objectives ......................................................................................................................... 3  
   1.3 Methodology ..................................................................................................................... 3  
   1.4 Organization of the Report ............................................................................................. 5  

2. **AGRICULTURAL RESOURCE BASE AND DISTRIBUTION** .............................................. 7  
   2.1 Physiography and Development Regions ......................................................................... 7  
   2.2 Land Use and Land Use Changes .................................................................................... 8  
   2.3 Population, Labour Force and Employment ................................................................... 9  
   2.4 Landholding and Holding Size ....................................................................................... 16  
   2.5 Production and Productivity of Crops ........................................................................... 18  
   2.6 Pattern of Use and Level of Modern Inputs .................................................................. 23  
   2.7 Food Security Status ..................................................................................................... 25  

3. **AN OVERVIEW OF THE STRATEGY, POLICY AND PROGRAMMES OF THE AGRICULTURE SECTOR** ................................................................. 30  
   3.1 The Agriculture Perspective Plan ..................................................................................... 30  
   3.2 Agriculture Sector Objectives, Strategies and Policies of the Ninth Plan ......................... 32  
   3.3 Major Agriculture Sector Programmes ......................................................................... 34  
   3.4 Important Legal and Customary Institutions ................................................................ 33  

4. **IMPLEMENTATION STATUS OF APP PRIORITY INPUTS** .............................................. 51  
   4.1 Priority Inputs: Irrigation ............................................................................................... 51  
   4.2 Priority Inputs: Fertilizer ............................................................................................... 54  
   4.3 Priority Inputs: Agriculture Credit ................................................................................. 60  
   4.4 Priority Inputs: Agricultural Research and Extension .................................................... 62  
   4.5 Priority Inputs: Agriculture Roads .................................................................................. 67  
   4.6 Priority Inputs: Rural Electrification .............................................................................. 70  

5. **PERFORMANCE OF PRIORITY APP OUTPUTS** .......................................................... 71  
   5.1 Priority Outputs: Livestock ............................................................................................. 71  
   5.2 Priority Outputs: High Value Crops ............................................................................... 77  
   5.3 Priority Outputs: Agribusiness ....................................................................................... 83  
   5.4 Priority Outputs: Forestry .............................................................................................. 85  

6. **EFFECTS AND IMPACTS OF APP IMPLEMENTATION** .............................................. 94  
   6.1 General Impact ............................................................................................................... 94  
   6.2 Macrolevel Effects ......................................................................................................... 94  
   6.3 Mesolevel Effects .......................................................................................................... 101  
   6.4 Microlevel Effects ......................................................................................................... 117  
   6.5 Impacts of APP Implementation .................................................................................... 129
7. STRATEGIC THRUST TO ADDRESS PROBLEMS AND CHALLENGES IN THE IMPLEMENTATION OF THE APP TO ENSURE FOOD SECURITY AND POVERTY ALLEVIATION ................................. 136

7.1 Framework for Policy Feedback Analysis ................................................................. 136
7.2 An Overview of the Implementation Status of Envisaged Policies .............................. 136
7.3 An Overview of Effects and Impacts ................................................................. 138
7.4 Major Problems, Challenges and Recommended Actions ........................................... 140

REFERENCES .................................................................................................................. 151

APPENDICES ................................................................................................................ 151-165
LIST OF TABLES

Table 1.1 : Ranking of districts in the MWDR and FWDR based on HDI
Table 2.1 : Land use, 1985
Table 2.2 : Land use in Nepal between 1981 and 1991
Table 2.3 : Population and population growth
Table 2.4 : Population structure of Nepal at different census points
Table 2.5 : Potential and actual labour force and participation rate by sex
Table 2.6 : Changes in labour force participation rate over time, by ecological region (%)
Table 2.7 : Work participation by major sector
Table 2.8 : Estimates of unemployment rate at different points in time
Table 2.9 : Underemployment rate at different points in time by region
Table 2.10 : Changes in labour productivity
Table 2.11 : Levels and trends in real wages by sector
Table 2.12 : Land use in Nepal between 1981 and 1991
Table 2.13 : Access of landholders to irrigation
Table 2.14 : Trends in crop area
Table 2.15 : Trends in crop production
Table 2.16 : Crop yield trends
Table 2.17 : Per hectare yield and growth rates of major crops in Nepal and other Asian countries
Table 2.18 : Trends in area, production and yield of horticultural crops
Table 2.19 : Livestock population trends
Table 2.20 : Proportion of households with livestock and average size of livestock holdings
Table 2.21 : Proportion of holders using modern inputs on crops
Table 2.22 : Fertilizer consumption and per hectare use
Table 2.23 : Food deficit situation by regions and ecological belts
Table 2.24 : Distribution of districts based on frequency of food deficits, 1994/95 to 1997/98
Table 2.25 : Nutritional dimension of food security
Table 3.1 : Major agricultural growth targets of the Ninth Plan
Table 3.2 : Targeted change in crop yield and intensity of the Ninth Plan
Table 3.3 : Targets for the production of priority fruits of the Ninth Plan
Table 3.4 : Targets for the production of vegetables and vegetable seeds of the Ninth Plan
Table 3.5 : Sericulture development targets of the Ninth Plan
Table 3.6 : Tea and coffee development targets of the Ninth Plan
Table 3.7 : Livestock breed improvement targets of the Ninth Plan
Table 3.8 : Feed improvement targets of the Ninth Plan
Table 3.9 : Livestock vaccination targets of the Ninth Plan
Table 3.10 : Livestock Priority package programme targets of the Ninth Plan
Table 3.11 : Livestock production targets of the Ninth Plan
Table 3.12 : Fisheries development programme targets of the Ninth Plan
Table 3.13 : Prioritized irrigation programme of the Ninth Plan
Table 3.14 : Fertilizer supply targets of the Ninth Plan
Table 3.15 : Agricultural credit flow targets of the Ninth Plan
Table 3.16: Development expenditure outlays according to the Eighth and Ninth Plans
Table 4.1: Development of irrigation facilities, 1974/75 to 2000/01
Table 4.2: Changes in irrigated area between pre- and post-APP periods
Table 4.3: Changes in pre- and post-APP periods
Table 4.4: Annual growth rates in fertilizer nutrient consumption in Nepal
Table 4.5: Supply targets and achievements for chemical fertilizers
Table 4.6: Subsidies and fertilizer imports
Table 4.7: Credit disbursement performance of ADB/N, 1996/97 to 1998/99
Table 4.8: Research projects in 1997 and 1998
Table 4.9: Status of agriculture extension
Table 4.10: Research project budgets, 1997 and 1998
Table 4.11: Targets and achievements of agricultural road construction
Table 4.12: Financial targets for agricultural roads in the Ninth Plan
Table 5.1: Livestock growth rate and proportion of GDP by region, 1991/92 to 2014/15
Table 5.2: Livestock production and growth projections of the Ninth Plan
Table 5.3: Changes in livestock population structure
Table 5.4: Livestock population structure by ecozones, 2001/02
Table 5.5: Achievements of APP priority livestock development programmes
Table 5.6: Development expenditures in the livestock sector
Table 5.7: APP targeted growth in per capita horticultural GDP
Table 5.8: Progress in the implementation of citrus in post-APP period
Table 5.9: Progress in the implementation of apple programmes
Table 5.10: Progress in the implementation of commercial vegetable development programmes
Table 5.11: Progress in the implementation of the apiculture programme
Table 5.12: Progress in the implementation of the sericulture programme
Table 5.13: Investments in high value crops
Table 5.14: Ninth Plan programme in community forestry
Table 5.15: Situation of community forestry in Nepal, May 2000
Table 5.16: Evolution of private forests in Nepal
Table 5.17: Districts selected for implementation of forest management plans by the Ninth Plan
Table 5.18: Progress of leasehold forestry development
Table 5.19: Implementation status of soil and watershed management programmes
Table 5.20: Expenditure patterns in the forestry sector
Table 5.21: Development budget before and after APP implementation by APP priority areas
Table 6.1: Change in area, production and yield of APP crops
Table 6.2: Change in area, production and yields of non-APP crops
Table 6.3: Achievements in area expansion of HVC
Table 6.4: Achievements in production of HVC under the APP
Table 6.5: Achievements in production of other horticulture crops
Table 6.6: Changes in milk, meat and egg production in the post-APP period
Table 6.7: Growth in wool and fish production
Table 6.8: Growth in agriculture and forestry-based industries
Table 6.9: Growth in agro-industry by sectors
Table 6.10: Changes in area, production and yield of paddy by development region and ecological belt
Table 6.11: Changes in area, production and yield of maize by development region and ecological belt
Table 6.12: Changes in area, production and yield of wheat by development region and ecological belt
Table 6.13: Changes in area, production and yield of potato by development region and ecological belt
Table 6.14: Changes in area, production and yield of citrus by development region and ecological belt
Table 6.15: Changes in area, production and yield of apples by development region and ecological belt
Table 6.16: Changes in area, production and yield of vegetables by development region and ecological belt
Table 6.17: Changes in area, production and yield of milk by development region and ecological belt
Table 6.18: Changes in production of meat by development region and ecological belt
Table 6.19: Changes in production of eggs by development region and ecological belt
Table 6.20: Growth in agro-industry
Table 6.21: Changes in cereal and fertilizer prices
Table 6.22: Changes in fruit prices
Table 6.23: Changes in vegetable prices
Table 6.24: Changes in livestock product prices
Table 6.24: Changes in commodity-fertilizer price ratios
Table 6.25: Changes in the structure of imports and exports
Table 6.26: Changes in imports and exports of APP commodities
Table 6.27: Micro effects of APP implementation in villages studied
Table 6.28: Annual per capita food production
Table 6.29: Annual per capita food production by development region and ecological belt
Table 6.30: Annual per capita horticultural production by region
Table 6.31: Annual per capita livestock production by region
Table 6.32: Level of food self-sufficiency in villages studied
Table 6.33: Poverty in study villages
Table 6.34: Incremental plantation areas after APP implementation
Table 6.34: Incremental plantation areas after APP implementation

LIST OF FIGURES
Figure 2.1: Relationship between production and deficit
Figure 4.1: Relationship between subsidy allocated and fertilizer imports
Figure 6.1: Movement of national cereal price of cereals
Figure 6.2: Annual retail price of fruits in Kathmandu
Figure 6.3: Annual retail price of vegetables in Kathmandu
Figure 6.4: National retail price of livestock products in Kathmandu
Figure 7.1: Framework for policy feedback analysis

LIST OF BOXES
Box 1: Ranking of districts in MWDR and FWDR based on HDI
Box 2: Coping strategies reported by the majority of food deficit households in villages surveyed