

## **Contents**

<b>1 Then and Now in Mexico: <i>A Preview of the Agricultural Revolution</i></b>	<b>1</b>
<i>Agrarian Reform and Its Limitations</i>	1
<i>The Agricultural Revolution: Making the Land More Bountiful</i>	3
<i>The Intellectual Revolution: More Scientists and Science</i>	9
<i>The Revolution in Outlook: Expanding the Horizons</i>	16
<i>The Agricultural Revolution: Retrospect and Prospect</i>	17
<b>2 The Genesis of the Mexican Program: <i>The Events That Produced It and Determined Its Pattern</i></b>	<b>19</b>
<i>A Survey Commission Is Appointed and Goes to Mexico</i>	22
<i>On the Mexican Highways and Byways—Reading and Misreading the Land and the People</i>	25
<i>Mexico's Early Efforts in Agricultural Education and Experimentation</i>	28
<i>What the Commission Concluded and Recommended</i>	31
<i>Adoption and Evaluation of the Recommendations</i>	34
<b>3 Putting the Wheels in Motion: <i>Pioneers Go to Work</i></b>	<b>36</b>
<i>Manning the Works</i>	39
<i>Creating Facilities for Work</i>	44
<i>The Wheels in Full Motion</i>	49
<b>4 Corn: <i>Reshaping the Daily Bread of Mexico</i></b>	<b>51</b>
<i>Mexico's Is a Corn-fed Civilization</i>	52
<i>Corn Improvement Receives Top Priority</i>	55
<i>Implementing Well-made Plans</i>	61
<i>The Program Makes Further Progress</i>	64
<i>Extending the Program</i>	68
<i>Successes and Disappointments</i>	70

<b>5 The Wheat Revolution: <i>More Bread for the Hungry</i></b>	<b>72</b>
<i>The Causes and the Beginnings of the Revolution</i>	73
<i>Mapping the Strategy of the Revolution</i>	77
<i>Not Only Words, but Deeds</i>	77
<i>The Wheat Revolution Gains Momentum</i>	79
<i>Creating New Mexican Wheats for Mexico</i>	81
<i>Efforts to Increase Soil Fertility</i>	88
<i>Wheat Independence and Its Problems</i>	89
<i>Past, Present, and Future</i>	90
<b>6 Beans: <i>Improving the Meat of the Poorer Mexicans</i></b>	<b>94</b>
<i>Tradition Proves to Have a Scientific Basis</i>	94
<i>Varietal Improvement Gets under Way</i>	96
<i>Varietal Improvement Gains Momentum</i>	101
<i>Disease and Insect Control</i>	104
<i>Improved Cultural Practices</i>	105
<i>Two Decades of Progress</i>	106
<b>7 Mobile Reserves: <i>Potatoes and Other Vegetables, Soybeans, and Sorghums</i></b>	<b>108</b>
<i>The Potato: Mexico Discovers Its Value</i>	108
<i>Other Vegetables: Improved Sources of Vitamins and Minerals</i>	117
<i>The Soybean: A Most Promising Old World Legume</i>	121
<i>Sorghum: A Potential Auxiliary to Corn</i>	124
<b>8 Soils, Water, and Man: <i>How Mexico Learned to Use Them Better—An Example for Emerging Countries</i></b>	<b>129</b>
<i>Improving the Soils</i>	129
<i>Utilizing the Water</i>	139
<i>Developing the Men</i>	145
<b>9 Crop Protection: <i>Better Methods of Fighting Pests and Pathogens</i></b>	<b>146</b>
<i>Early Campaigns against Diseases and Insect Plagues</i>	150
<i>The Need for Special Skills in Crop Protection</i>	153
<i>The Evolution of Crop-Protection Specialists</i>	153

Contributions of Plant Protectionists to the Agricultural Revolution	157
10 The Livestock Story: <i>More and Better Feed to Produce Milk, Eggs, and Meat</i>	160
<i>Livestock Were Introduced into Mexico by the Spanish</i>	160
<i>Forages and Livestock in Mexico Today</i>	162
<i>Work with Livestock Gets under Way</i>	171
<i>A New Livestock Center Is Established</i>	174
11 Education: <i>The Evolution of Agricultural Scientists and Educators</i>	177
<i>More Scientists Needed, 1943</i>	179
<i>The New Education Begins Officially, 1944</i>	181
<i>The Agricultural Colleges, Old and New, 1943-1963</i>	187
<i>Postgraduate Work Begins, 1959</i>	193
<i>Roots and Sprouts of the New Education</i>	195
12 Extension: <i>Getting Farmers to Use the Results of Research</i>	197
<i>Experimentation as the Living Source of Extension</i>	198
<i>Direct Aid to Mexico's Extension Service</i>	203
<i>Lessons Learned</i>	206
<i>Cost-of-Production Studies Are Basic to Extension Programs</i>	211
<i>Wider Distribution of Benefits—A Continuing Problem</i>	213
13 Extending the Mexican Pattern: <i>Action Programs in Colombia, Ecuador, and Chile</i>	216
<i>Colombia</i>	216
<i>Ecuador</i>	227
<i>Chile</i>	230
<i>Research—The Key to Progress in Latin America</i>	234
14 India: <i>Modifying a Pattern to Suit Special Conditions</i>	235
<i>The Foundation Explores India</i>	236
<i>Operation Bootstrap: The Five-Year Plans</i>	239

<i>The Foundation's Program: Aims and Accomplishments</i>	241
<i>New Optimism Replaces Old Pessimism</i>	254
<b>15 The International Corn Program: Assembling and Distributing Superior Germ Plasm</b>	<b>255</b>
<i>The Central American Corn Project</i>	256
<i>Germ Plasm Banks and International Exchange</i>	260
<i>Official Internationalization on a Global Scale</i>	265
<b>16 The International Wheat Program: Extending Mexico's Gains Far beyond Her Borders</b>	<b>267</b>
<i>International Aspects of the National Programs</i>	267
<i>International in Name as Well as Deed</i>	273
<i>Ecological Experimentation</i>	275
<i>Basic Research</i>	278
<i>Educational Activities</i>	281
<b>17 The International Rice Research Institute: A New Pattern of Joint Operations by the Ford and Rockefeller Foundations</b>	<b>285</b>
<i>Rice in the Culture and Economy of the Far East</i>	286
<i>IRRI Meeting the Challenge</i>	293
<i>Cooperation Can Vanquish Hunger and Contention</i>	297
<b>18 Lessons Learned and Future Prospects</b>	<b>300</b>
<i>Some Countries Have and Some Have Not</i>	301
<i>Ingredients of Success in Rockefeller Foundation Programs</i>	305
<i>Aid Programs Should Be Living Organisms</i>	307
<i>Channeling Research Results to Farmers</i>	317
<i>Education—Sources and Uses</i>	318
<i>Critical but Optimistic</i>	321
<b>Index</b>	<b>323</b>