Dimensions of NEED

An Atlas of Food and Agriculture

Food and Agriculture Organization of the United Nations
Rome, Italy
Contents

3 Foreword
by the Rt Hon the Baroness
Chalker of Wallasey, Minister for
Overseas Development, United
Kingdom

7 Introduction by Dr Jacques
Diouf, Director-General of FAO
Origins of FAO • FAO’s broad
mandate • Paving the way to
food security • A brief history
of FAO

Food and people

12 Human nutrition: Key to
health and development
What is a balanced diet?
• Nutrients and where to find
them • Energy requirements and
expenditure • Undernourishment
and malnutrition • Average daily
energy supply • Diet-related non-
communicable diseases

16 People and populations at risk
Rural-urban poverty indicators
• Gross national product and
food security • Global refugees
• Africa in context • The spectre
of famine

19 Availability of food:
How countries compare
Low-income food-deficit
countries • Foodcrops and
shortages

21 Staple foods:
What do people eat?
The sources of food • Proportions
of food groups in average diets
• Complementary foods

25 Who are the food producers?
Population economically active in
agriculture • Division of labour
by gender • Farming systems in
the developing world
• Cultivators • Forest people
• Pastoralists • Fisherfolk

29 Impact of poverty on life
Bangladesh • Colombia
• Central African Republic
• Tanzania • Mali
• the Philippines • Nepal
• Viet Nam • Uganda

34 Feeding the world:
The search for food
security
What is food security?
• Agriculture and population
projections • Pressures on
resources • International
Conference on Nutrition

38 The soil
Soil limits agriculture • Soil
texture variation • Fertilizer use
• Typical soil profiles • World
soil resources • Agricultural
potential

42 Water:
A finite resource
Where the water is • The
hydrological cycle • Annual
water use • Water availability
and scarcity • Irrigation losses
• Percentage and area of land
irrigated • Salinization threatens
production

46 Restoring the land
Impact of soil erosion • Global
status of human-induced soil
degradation • Soil degradation
by area and type plus
major causes • Combating
soil erosion

50 How many people can
the land support?
Critical countries • Cultivated
areas and gross land reserves
• Percentage total land area with
limitations to crop production
• World potential land use
capabilities • Making the best
use of land
53 Fisheries at the limit?
Fish production and utilization • Contribution of fish to diet • Responsible fishing • Fishing zones • Fishery Commissions • Top fishing nations • Top marine catches

56 Aquaculture:
From hunter to farmer
The growth of aquaculture • Inland fisheries and aquaculture • Top aquaculture producers

58 Forests of the world
Global distribution of forests • Forest types • Projected consumption of forest products • Loss of natural forest cover

60 Wealth from the wild
Animal products • Plant products • Services • What are forests worth? • People and wildlife • Ecotourism

64 Controlling pests
Species resistant to pesticides • Worldwide locust distribution • Pesticide safety • Controlling the desert locust • Change in pesticide use

66 Biological diversity
Number of species: known compared with estimated • Number of species by area • Domesticated animals at risk

68 Sustainable agriculture and rural development
Areas affected by atmospheric and coastal pollution • Essential ingredients for sustainable development • Agenda 21 • Elements for sustainable agriculture and rural development

72 A family of nations:
‘Haves’ and ‘have nots’
Gaps in human development • Income disparity between the richest and poorest

73 World trade:
Why is it important?
Share of agriculture in world exports • World agricultural exports • Share of agricultural production and merchandise exports • Commodity prices • Commodity indices • Wheat • Rice • Jute • Shrimp • GATT and the World Trade Organization • Effect of the Uruguay Round • Agricultural trade

79 Food aid
Food aid recipients • Cereal commodities as food aid • Cereal imports of low-income food-deficit countries • World Food Programme emergency operations

80 Beating the debt burden
Developing countries: external debt total • Debt as percentage gross national product • Debt as percentage foreign exchange earnings • Debt service • Per caput debt • Heavily indebted countries

82 The challenge of food production
Agricultural research personnel and expenditures: developing and developed countries • Changing focus of agricultural research and development • Areas of genetic diversity • The agricultural research network
CONTENTS

86 Biotechnology
Major national gene banks
• Achievements • Self-cloning seeds • Vine-fresh tomatoes
• Cryopreservation • Fighting cattle plague • Nitrogen-fixing rice • Eradicating the New World screwworm

90 The view from space:
Building models of the world
How a remote sensing system works • Satellites used for remote sensing • How a Geographic Information System works • GIS in practice: the example of tsetse fly in Africa

94 Transfer of technology
Some technology transfer opportunities • Major FAO information systems and databases • Regional centres and organizations • Regional networks and programmes
• Selected examples of technical cooperation among developing countries

96 A question of commitment
Overseas aid flows • Aid to agriculture • Farmer participation in agricultural extension
• Indicators of rural poverty

Food and agriculture: The future

100 The right to food
The most basic of human rights • FAO’s work in support of the right to food

Agriculture in the twenty-first century
Food supplies by area • Major crops in developing countries • Share planted to modern wheat varieties in developing countries • Increasing yields • Water resources • Fertilizer use in developing countries • Rural poverty • Rural illiteracy

105 Sharing the world’s resources
National energy consumption levels • Rates of change in food production

107 Global warming
How the greenhouse effect works • Worldwide forecasts • Concentration of greenhouse gases in the atmosphere and their contribution to global warming

109 The challenge of sustainability
Five root causes of unsustainable practices • Drylands • Irrigated land • Tropical forests • Hill and mountain areas • Proposals for progress • The Den Bosch Declaration

112 Fair and free trade
The Uruguay Round of trade negotiations • Probable evolution of net agricultural trade balance

114 Tapping the peace dividend
World military spending • Global military expenditure and the peace dividend • Total military spending in developing countries • A global tax for development

116 Promises to keep
The challenges facing FAO
• Promoting agriculture, forestry and fisheries • Empowering food producers and consumers • Using natural resources sustainably
• Building a global partnership

Index
Reference and data index

Further information
Selected reading

World map
A country-by-country reference

The United Nations system
Principal organs of the UN and how they are organized • The Food and Agriculture Organization of the UN

CONTENTS DIMENSIONS OF NEED