

CWANA Subglobal Assessment

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- 5.1 AKST and objectives**
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- 5.3 Gaps and uncertainties in the AKST system**

Chapter 1 Setting the scene

1.1 Context of CWANA

1.1.1 Identification, geography, climate, ecosystems, biodiversity, and other environmental issues, including land degradation and natural disasters

1.1.2 Geopolitics (including conflicts)

1.1.3 Well-being

1.1.3.1 Hunger, nutrition and health

1.1.3.2 Poverty and livelihoods

1.2 Agricultural production systems

1.2.1 Identification of current production systems and importance of agriculture in CWANA (e.g., contribution to the GDP, productivity)

1.2.2 Transitional dynamics of production systems

1.2.3 Identification of supporting services, including extension, inputs, credit and marketing

1.3 Key issues

1.3.1 Population growth and demography

1.3.2 Water demand and supply

1.3.3 Climate change

¹ Development and sustainability objectives for Assessment: improved nutrition, human health and livelihoods; decreased poverty and hunger; increased social and environmental sustainability.

- 1.3.4 Land access, tenure and management
- 1.3.5 Infrastructures and financing for agricultural development
- 1.3.6 Local knowledge, sciences and technologies
- 1.3.7 Social equity and gender
- 1.3.8 Human capacity
- 1.3.9 Markets and policies
- 1.3.10 Agrobiodiversity

Chapter 2 Historical and current perspectives of AKST

2.1 Evolution from early 1900s to the present

- 2.1.1 The colonial period
 - 2.1.1.1 AKST systems (cropping patterns, etc.), including local knowledge
 - 2.1.1.2 Infrastructure
 - 2.1.1.3 Land tenure, including agrarian reform
 - 2.1.1.4 Policies and regulations, markets
- 2.1.2 Central Asia under communism/socialism
 - 2.1.2.1 AKST systems (cropping patterns, etc.), including local knowledge
 - 2.1.2.2 Infrastructure (including change from state to private ownership)
 - 2.1.2.3 Land tenure, including agrarian reform
 - 2.1.2.4 Policies and regulations, markets
- 2.1.3 Pre- and post-green and gene revolutions
- 2.1.4 The impact of these political eras on hunger, nutrition, health, poverty, and environmental and social sustainability

2.2 History of public and private sector investment in AKST

- 2.2.1 Public sector involvement in agriculture
 - 2.2.1.1 Proportion of total budget
 - 2.2.1.2 Development vs. non-development expenditure
 - 2.2.1.3 Staff vs. operational budget
- 2.2.2 Returns to investments (public research and extension)
- 2.2.3 Private sector investments in input markets (seeds, fertilizers, pesticides)
- 2.2.4 Private sector investments in output markets (market information, etc.)

2.3 Market evolution

- 2.3.1 Subsidies, trade and environmental agreements
- 2.3.2 Agriculture market shares of CWANA in the global and regional markets
- 2.3.3 Changing lifestyles and consumer preferences

2.4 Technology adoption and transfer

- 2.4.1 Socioeconomic evolution
- 2.4.2 Human capacity
- 2.4.3 Financial institutions for agricultural credit

Chapter 3 Future scenarios

3.1 Drivers affecting agricultural production systems in CWANA

- 3.1.1 Description of drivers (markets, impact of NARS research, training, producer organizations, etc.)
- 3.1.2 Interactions across regions and specific to regions
- 3.1.3 Implications for AKST

3.2 Development of storylines

3.3 Presentation of outputs for different scenarios

Chapter 4 Looking forward: Policies, institutions and other enabling factors in role of AKST

- 4.1 Impacts of policies under different scenarios**
 - 4.1.1 Pricing policies (including price protection and subsidies)
 - 4.1.2 Investment and financing
 - 4.1.3 Research priorities
 - 4.1.4 IPR and trade
- 4.2 Impacts of institutional arrangements under different scenarios**
 - 4.2.1 Global/regional Cooperation and International Efforts (International Monetary Fund, UN Framework Convention on Climate Change, etc.)
 - 4.2.2 Regional (Arid Center for Studies of Arid Zones and Dry Lands, etc.)
 - 4.2.3 National (public, private, etc.)
 - 4.2.4 Local and community
 - 4.2.5 Technology generation, transfer and adaptation
- 4.3 Analysis of other enabling factors under different scenarios**
 - 4.3.1 Availability and accessibility of resources
 - 4.3.1.1 Natural resources
 - 4.3.1.2 Human capacity
 - 4.3.1.3 Infrastructure
 - 4.3.2 Governance
 - 4.3.2.1 Policies and regulations
 - 4.3.2.2 Transparency and accountability
 - 4.3.2.3 Empowerment, democracy and participation
 - 4.3.3 Social factors
 - 4.3.3.1 Gender
 - 4.3.3.2 Population pressure (including urbanization)
 - 4.3.3.3 Labor (migration, seasonal mobility, remittances)
 - 4.3.3.4 Education
 - 4.3.4 Economic factors
 - 4.3.4.1 Markets
 - 4.3.4.2 Regulatory regimes (IPR, biosafety, food safety)
 - 4.3.5 Role of government, international organizations, private and informal sectors
 - 4.3.5.1 Government
 - 4.3.5.2 International organizations
 - 4.3.5.3 Private sector, agro-industry
 - 4.3.5.4 Informal sector

Chapter 5 Looking forward: Role of AKST in meeting development and sustainability objectives

- 5.1 AKST and development and sustainability objectives**
 - 5.1.1 Hunger, nutrition and human health
 - 5.1.2 Poverty and livelihoods
 - 5.1.3 Environmental sustainability
 - 5.1.4 Social sustainability, e.g., equity and gender
- 5.2 AKST options for future**
 - 5.2.1 Development pathways
 - 5.2.2 Technology options
 - 5.2.2.1 Conservation of local knowledge
 - 5.2.2.2 New technologies
 - 5.2.2.3 Environmental impact & food safety
- 5.3 Gaps and uncertainties in the AKST system**
 - 5.3.1 Key gaps in system
 - 5.3.2 Managing uncertainties