

Weathering the Change

How to Improve Hydromet Services in Developing Countries

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Backdrop for the Guide

Introduction

The Global Weather Enterprise

World Bank Experience in
Modernizing NMHSs

Modernization Cannot be Piecemeal

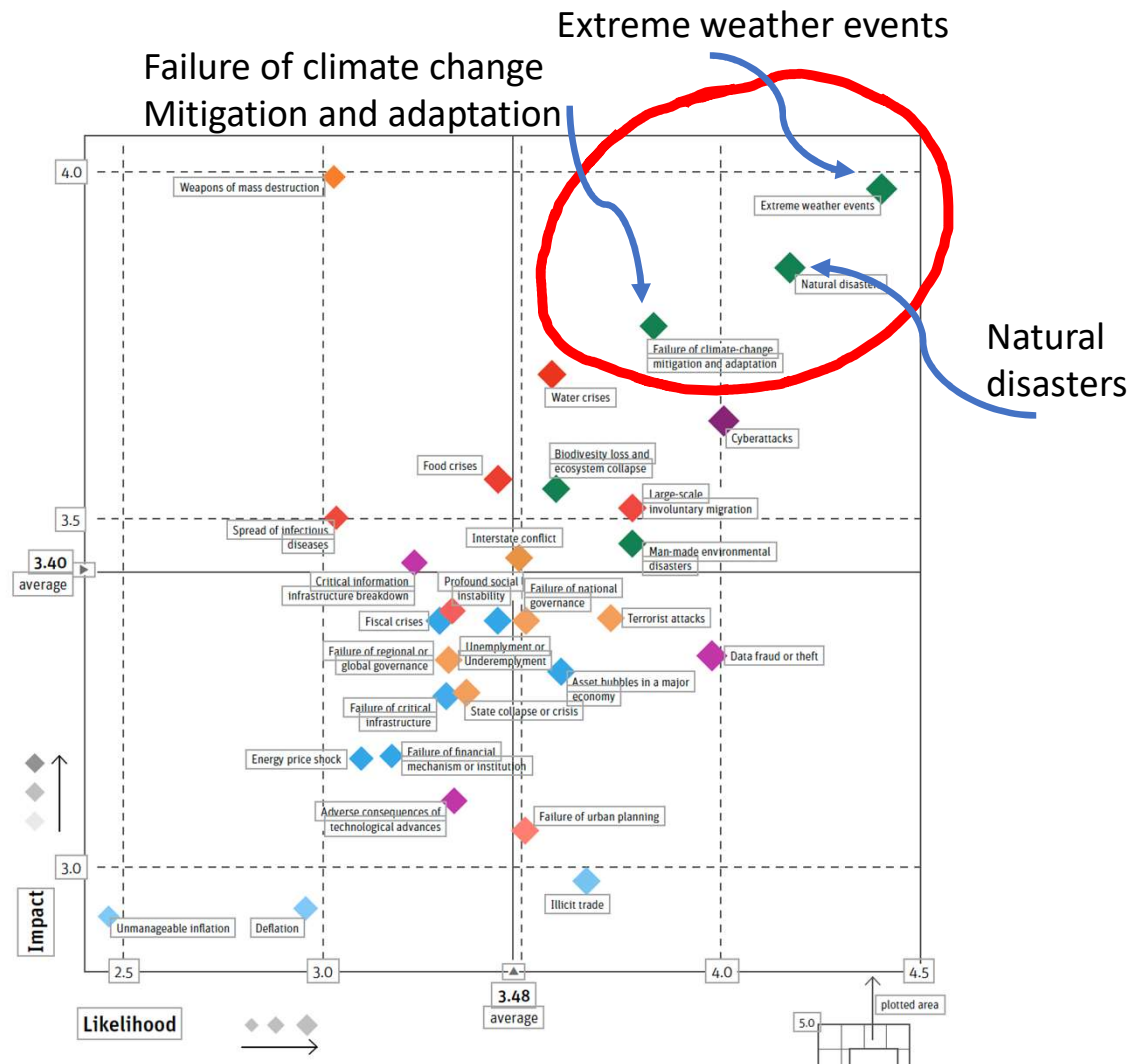
Improving Service Delivery

Acute need for more accurate
and reliable weather, climate and
hydrological information

Predict extreme risks and foster
resilience

Engage the entire enterprise

Motivation

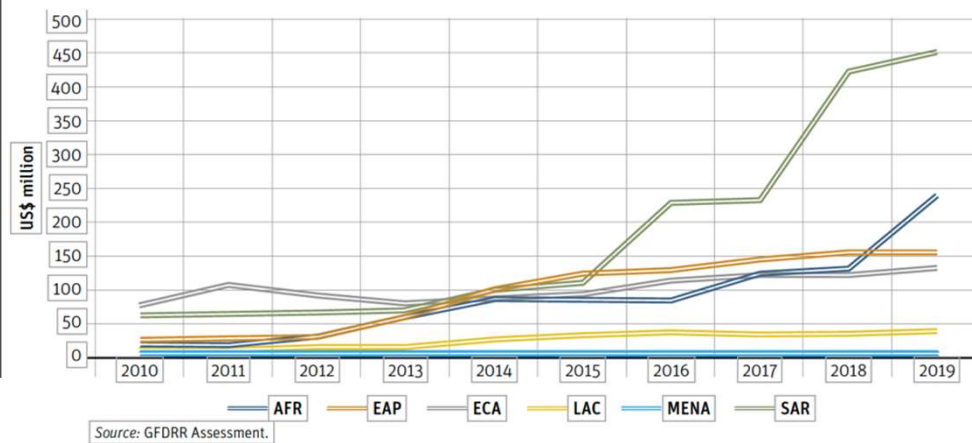




A snapshot of the global weather enterprise

- Enabling environment – fostering engagement between public, private and academic sectors – and civil society
- Common goals – life, property, and economic development
- Aligned to SDGs, Sendai Framework and Paris Agreement

World Bank experience



- Fragmentation
- Sustainability
- Rising trend

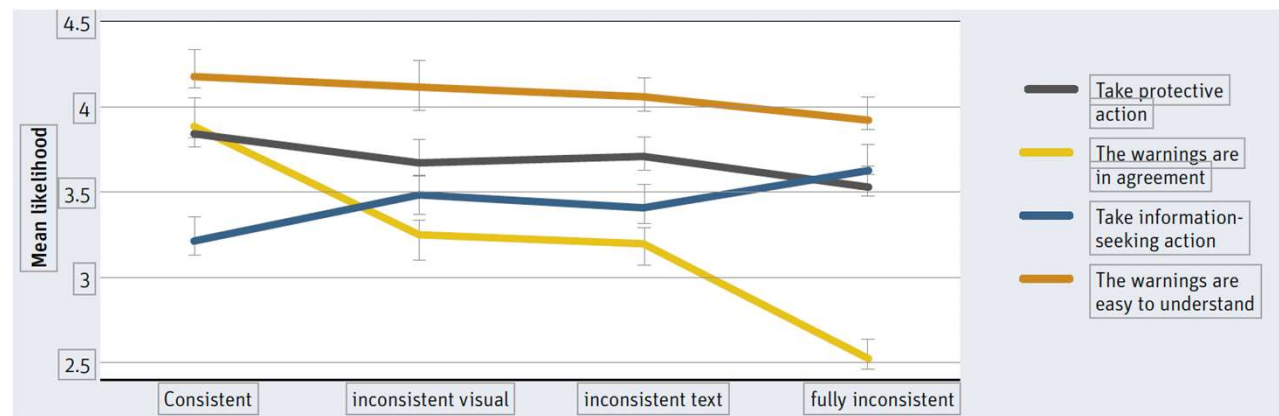


Modernization cannot be piecemeal

- Growing number of development partners' and donors' programs
- Growing interest in the private sector to provide services
- Limited financial and human resources and management skills in NMHSs
- Challenge of applying WB and other partners processes for designing and implementing large scale integrated projects

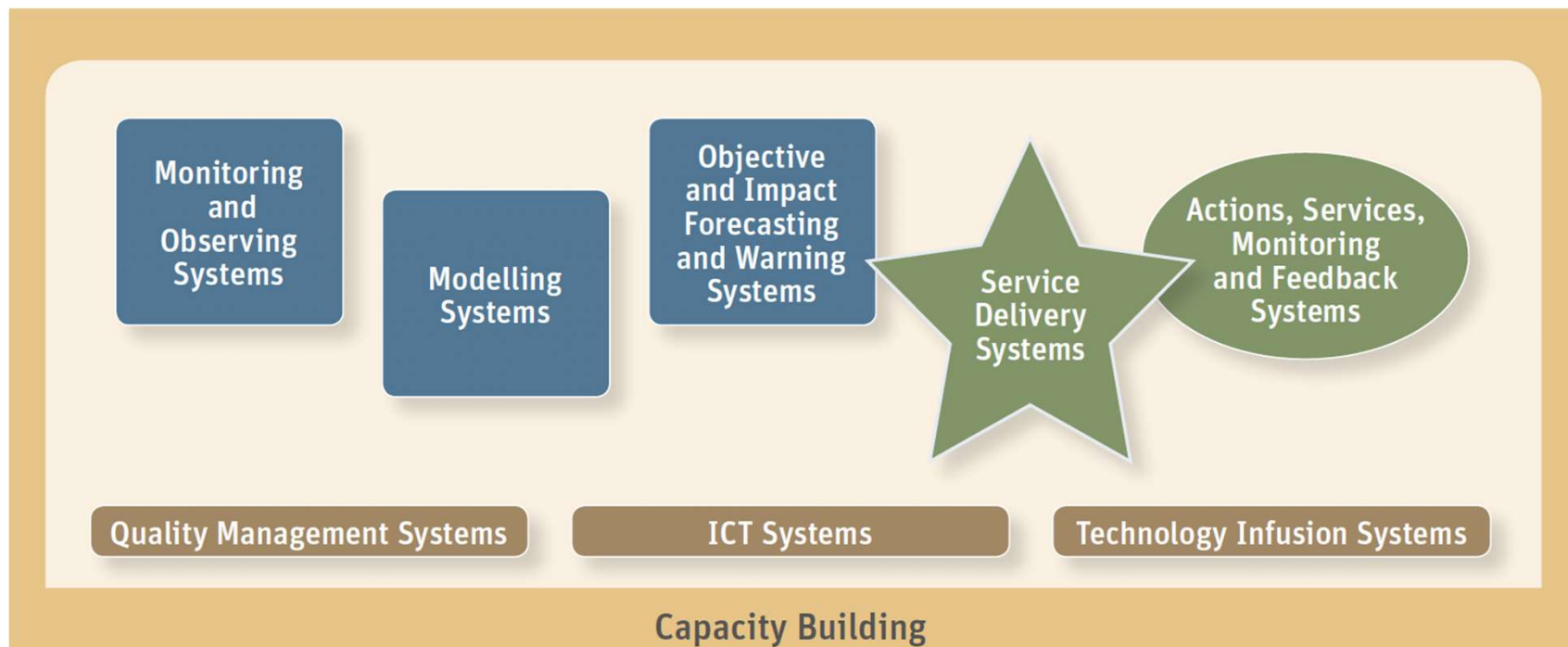
Improving service delivery

- Service delivery standards
- Generating the desired response
- Bringing utility to users
- Understand users' value chain
- More collaborative approach



Weyrich et al. 2019

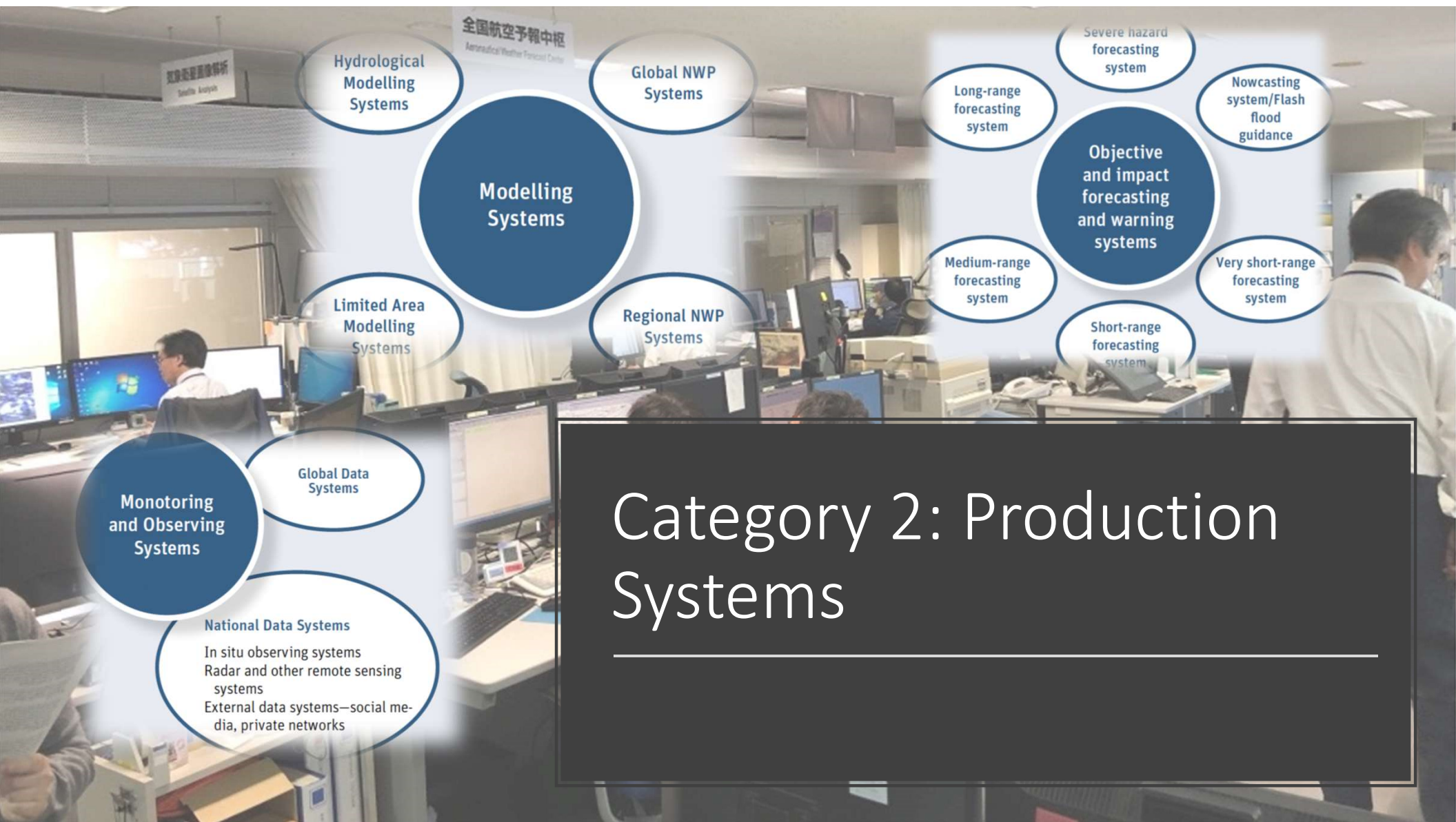
A system of systems



Category 1: Delivery Systems

- Available and timely
- Dependable and reliable
- Usable
- Useful
- Credible
- Responsive and flexible
- Sustainable
- Expandable







Category 3: Support systems

Capacity Building

- Keeping up with rapidly evolving GWE skills
- Core disciplines
- ICT skills
- Social communication skills
- Business practices
- On-the-job training
- Training trainers
- Twinning with advanced NMHSs
- University education
- Private sector engagement



Key Considerations

Business
Plans and
Models

Strategy

Concept of
Operations

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Business plans

- Expansion financing
- Market, customers, clients and users
- Competition
- Marketing
- Production and delivery
- R&D
- Management and organization
- Risk analysis
- Finances



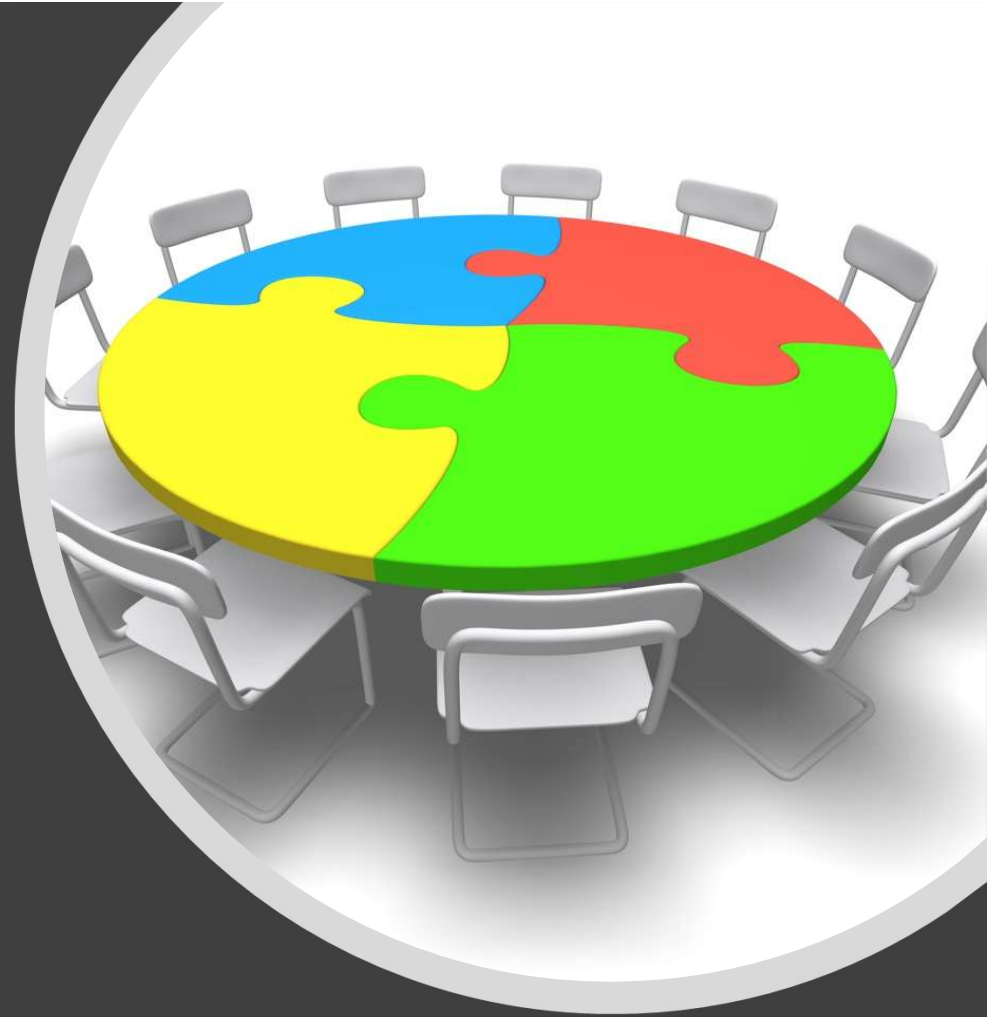
Business Models

- Cost centers
- Own and operate Observational networks
- Observation networks as a service
- Data as a service
- Own and operate local area models
- Outsource NWP services
- Outsource ICT functions
- Infrastructure as service



Strategic planning

- Strategic goals
- Planning process
- Theory of change



Concept of operations

- Consensus among all stakeholders, reduce risks, improve quality
- Who are the stakeholders?
- What are needs?
- Can we meet their needs?
- If not, what capabilities are required of the system?
- Who does what? where? and when?
- How will the system be resourced, designed built and maintained?



Recommendations on Modernizing NMHSs

- Enhancement of service delivery system
- Institutional strengthening
- Modernization of Observation and telecommunication infrastructures, modelling and forecasting systems
- Project management
- How to make it sustainable



Enhancing the service delivery system

- Introduce or strengthen public weather service
- Use of mobile technology applications
- National framework for climate services
- Engagement with the private sector



Institutional strengthening

- Institutional bolstering
- Capacity building
- Design and implementation support
- Engagement with the private sector



Modernizing infrastructure

- Technical modernization of observation networks
- Access to GIS data
- Communication and ICT systems
- Improve forecasting system
- Refurbish offices
- Engagement with the private sector



Project management

- Project managers
- International advisors
- Systems integrators



How to make modernization programs sustainable

- Operations and maintenance
- Staffing
- Mitigating risks
- Procurement issues
- Turnkey systems
- Setting project performance indicators
- Internal development of, or external access to, production systems
- Safeguards
- Coordination with development partners
- International initiatives
- Small-scale investments and technical assistance projects
- Private sector



Thank you!
