

NATO Advanced Research Workshop

“Risk Management Tools For Port Security, Critical Infrastructure, and Sustainability”

16 – 19 March 2006, Venice, Italy

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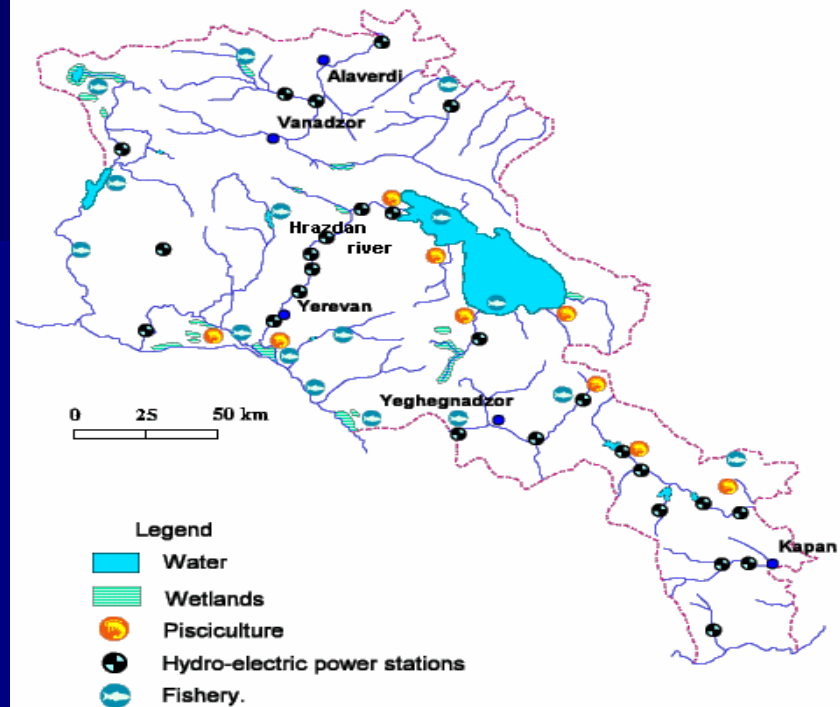
Yerevan State Institute of Economy

**COMPLEX SECURE SOLUTIONS
FOR SUSTAINABLE PRACTICES
IN ARMENIA**

Armenia

parliamentary Republic

- Population - approx. 3.3 million
- Capital - Yerevan (1.25 million)
- Total area is 29740 sq. km
- Borders with Turkey, Iran, Republics of Georgia and Azerbaijan
- Average height - 1800 m
- Uppermost - 4090 m. (Aragats)
- Lowest -360 m. (Ararat Valley)

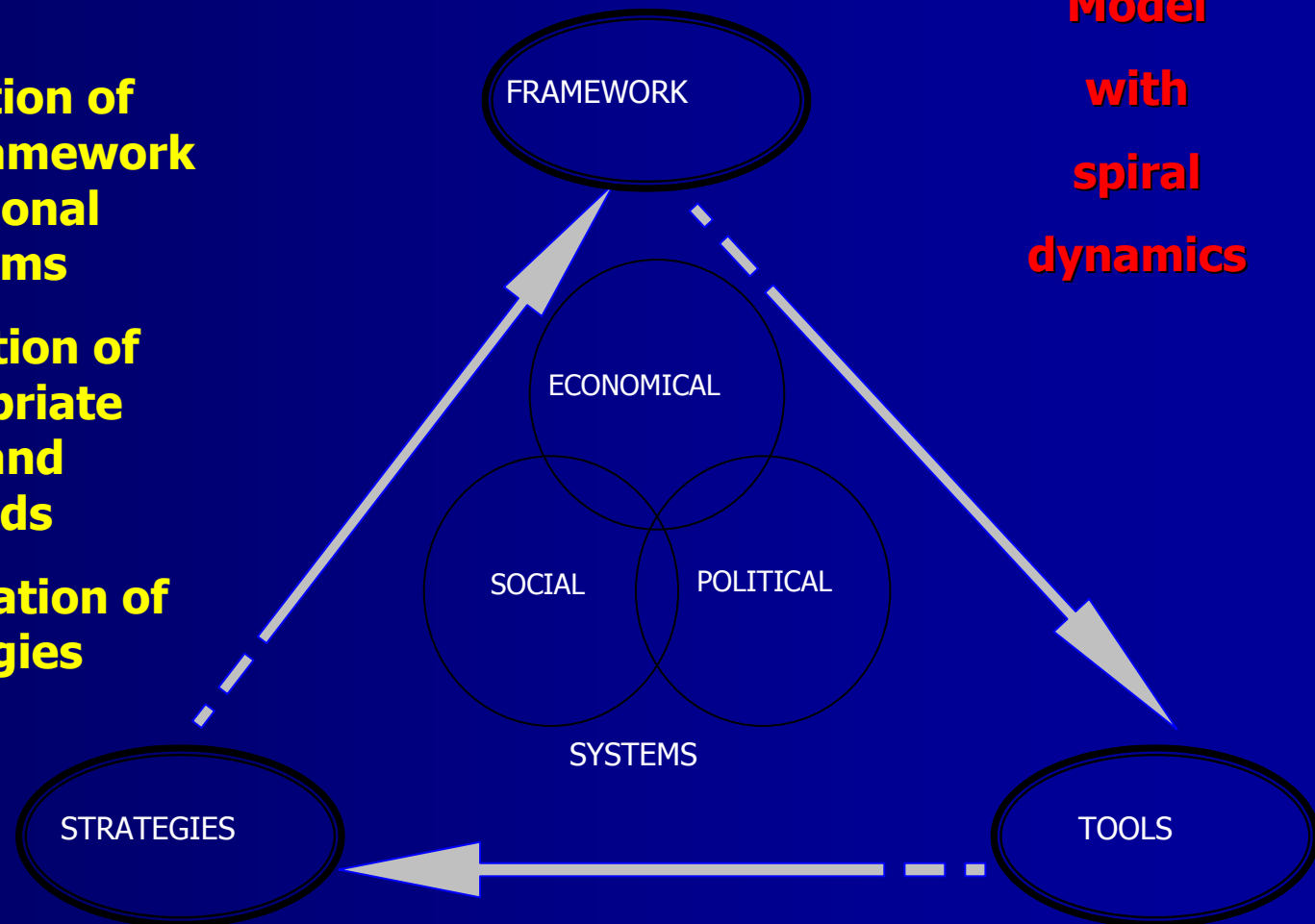


Principles for Integrated Approach

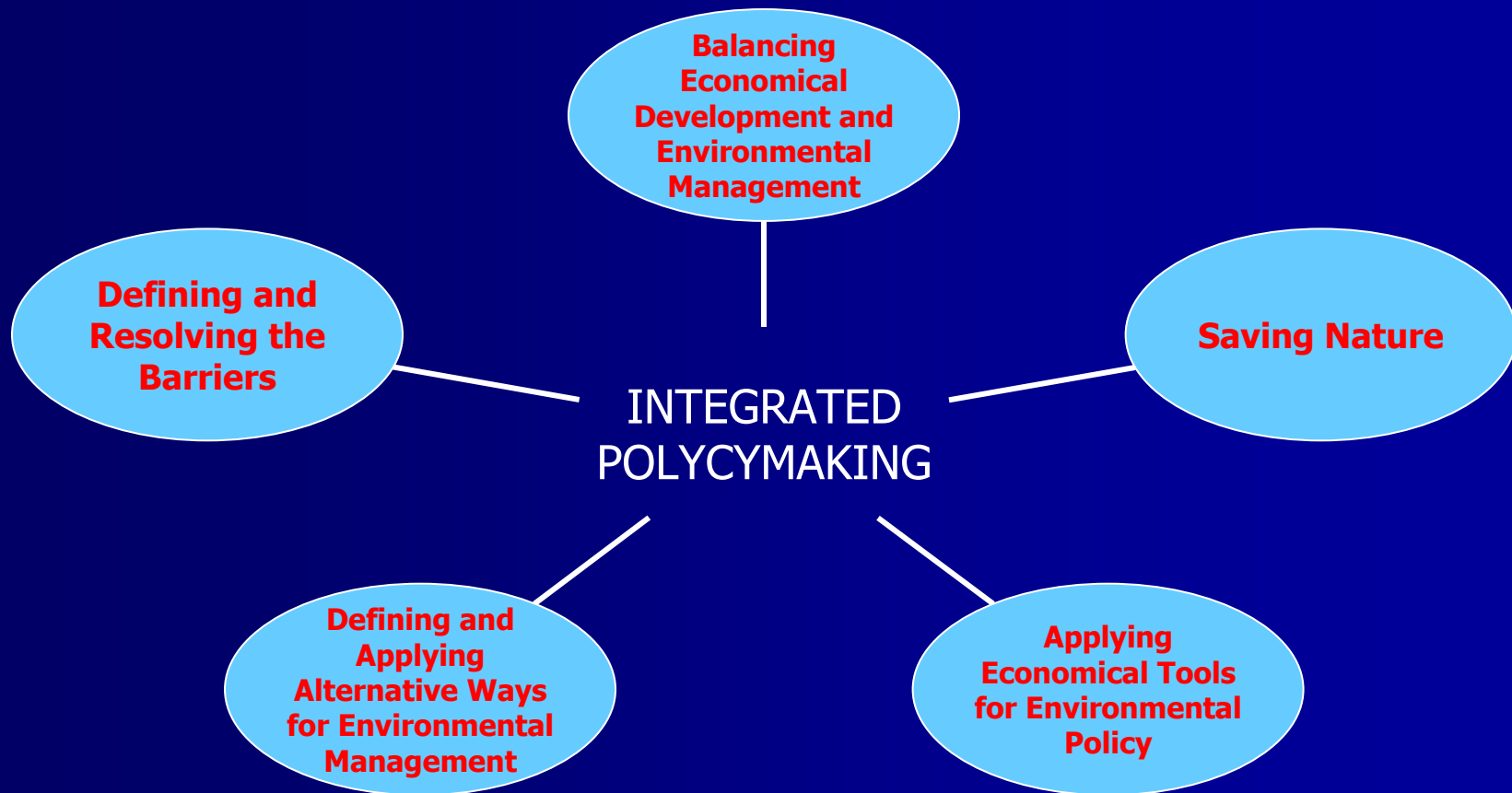
- *Solutions for secure policymaking must be obtained under one common "economical-social-political" system.*
- *Problems concerning sustainable development in the region must be analyzed in one framework.*

«Triangle» Analysis for Sustainable Policymaking

1. definition of the framework of regional problems
2. Definition of appropriate tools and methods
3. Generation of strategies



Set of Interrelated Topics for Secure Policymaking



Main Framework of Sustainable Development Problems in Armenia

(1) Definition of value of returns to land and water and costs of degradation and development of datasets, that relate to economic (agricultural) aspects of natural resource management in Armenia,

(2) Analysis of protected area management issues, in order not to lose outstanding natural landscapes and strategic for the region natural resources under technological encroachment,

(3) Analysis of pricing natural resources as a strong tool for management,

(4) Investigation of opportunities of Voluntary Environmental Management Arrangements as new type of activity in Armenia,

(5) Definition of impediments to effective policy implementation for identifying potential gaps in the institutional framework.

DEFINITION OF VALUE OF RETURNS TO LAND AND WATER AND COSTS OF DEGRADATION

- **An overview of the economic returns from the nation's land and water resources used in agriculture,**
- **Analysis of economic aspects of degradation of natural resources,**
- **Developing information on willingness to pay to slow rural population decline and improve environmental attributes, that are not part of the market for agricultural products.**

MAIN OUTPUTS

- **recommendations to different groups of farmers, and the extension service on the most optimal and sustainable use of their resources from an ecological and economical point of view.**
- **recommendations to policy makers**

WHY AGRICULTURE ?

- Agriculture is in the intersection of most environmental and development related problems in Armenia
- Main “working” branch in Armenia
- 1/3 of domestic product
- 42 percent of employment
- Main consumer of water and land resources
- In Armenia exists the problem of food security

Obstacles for Sustainable Agricultural Development in Armenia

.Arable land is limited (0.13 ha of arable land per capita). The country is mountainous, with only 28 percent of land below 1500 meters altitude. Only 20 percent of the land suitable for cropping (other than pasture).

•The bulk of agricultural land has been privatized but there is little support for small holdings. After the agrarian reform, 25% of arable lands have not been used. Access to formal credit for many small farmers remains difficult.

•Lack of basic farming knowledge and management skills. Violation of agro-technical rules took place by lack of knowledge.

•Marketing constraints. Export of products is expensive (geopolitical constraints) and external markets are not accessible. Home market is not developed (limited purchasing power). There is no market information system.

•Institutional shortcomings (absence of effective law mechanisms).

ANALYSIS OF PROTECTED AREA MANAGEMENT ISSUES

- 1 national park, 6 state reserves and 22 protected areas
- Reserved areas formed almost 11% of total area of republic
- These areas include more than 60% of species of flora and fauna of Armenia

1. "Sevan" National Park
The main and largest freshwater basin in Caucasus
2. "Khosrov" State Forest Reserve
1686 species of flora and 213 species of fauna, 47% of which are registered in the "red book"
3. "Dilijan" State Forest Reserve
812 species of flora and 115 species of fauna, 49 of which-rare
4. "Shikahog" State Reserve
Natural Landscapes, species were not registered yet
5. "Erebuni" State Reserve
290 species of flora, 48 of which-rare
6. "Sev Litch" State Reserve
160 species of flora, 7 of which-rare

ANALYSIS OF PROTECTED AREA MANAGEMENT ISSUES

GOALS

- Definition of optimal balance between leaving areas in their natural or near-natural state and exploiting them
- developing strategies for protected area managers

INVESTIGATION OF OPPORTUNITIES OF VOLUNTARY ENVIRONMENTAL MANAGEMENT ARRANGEMENTS IN THE REGION

(new type of environmental managerial strategy for Armenia)

3 Main Reasons for Implementation

Information/education based voluntary programs show businesses and households ways to make “eco-efficiency” management changes—management changes that both enhance environmental performance and save costs. Farmers can learn how to do business by saving environment. The households or businesses that participate and realize eco-efficiency gains generally would not in the absence of a voluntary program, because they would not make the necessary information/education investment on their own.

Many of the businesses and households who participate in voluntary programs are first movers who are willing to undertake environmental action beyond regulatory requirements when the information that is prerequisite to such actions is offered through voluntary programs.

Voluntary programs can be a good way of inducing environmental performance improvements in the small business sector which is often not subject to the stringent environmental regulations that big industry is.

INVESTIGATION OF OPPORTUNITIES OF VOLUNTARY ENVIRONMENTAL MANAGEMENT ARRANGEMENTS IN THE REGION

GOALS

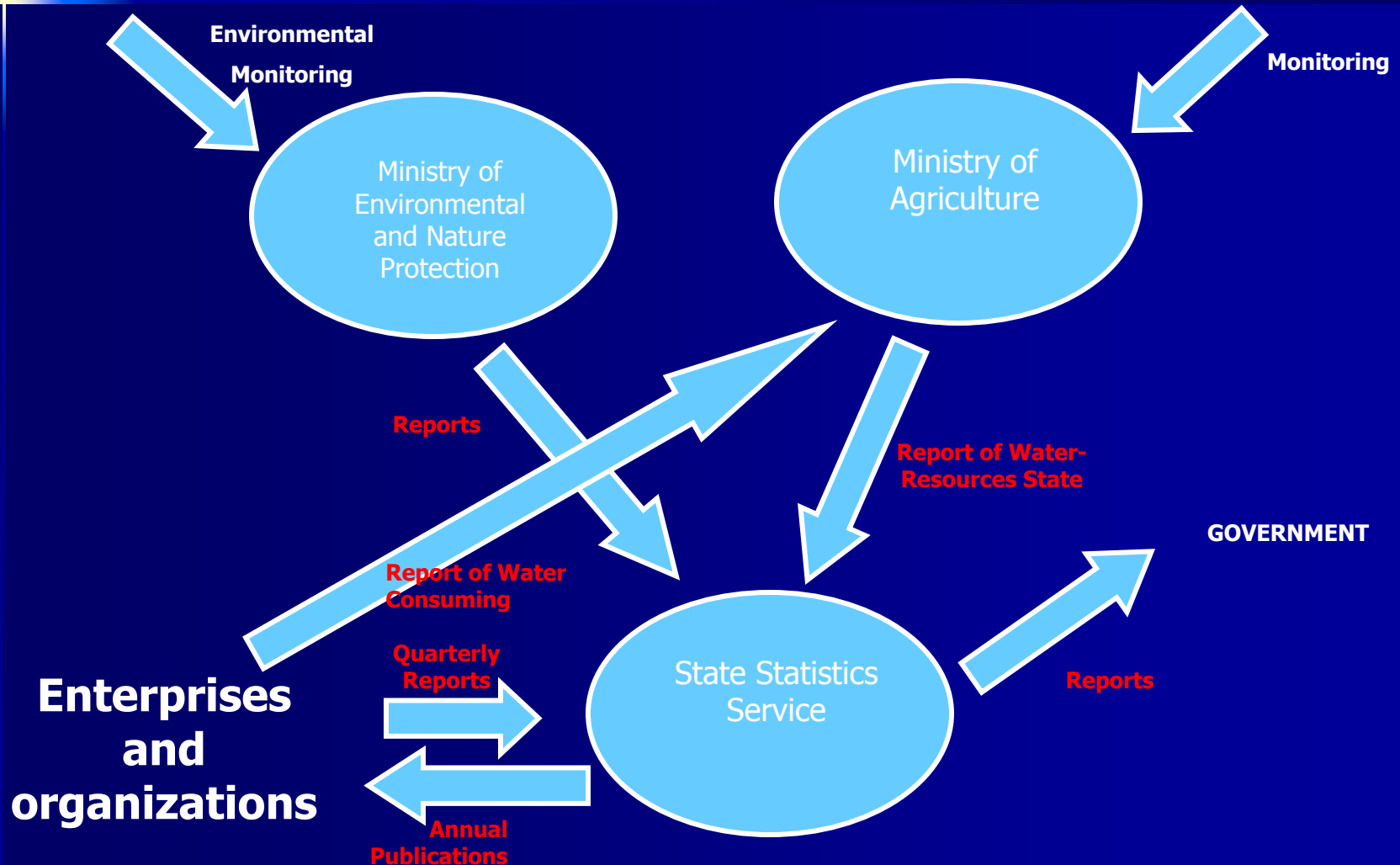
- dissemination of principles of voluntary environmental management among farmers, small businesses and households
(learn what is it)
- developing and distributing recommendations for the best practice in voluntary environmental arrangements.
(learn how to do it)

DEFINITION OF IMPEDIMENTS TO EFFECTIVE POLICY IMPLEMENTATION

The Purpose

- Identify potential impediments to best practice in the management of the resource;**
- Identify potential gaps in the institutional framework as it exists (data provision);**
- Ensure that our understanding of the framework is sufficient before moving forward to consider various incentive mechanisms for resource management.**

ENVIRONMENTAL INFORMATION NETWORK IN ARMENIA



TOOLS AND METHODS

Economical, Social, Command, Technical

Socio-Economical Survey procedures

- opinions concerning alternative practices and approaches,
- willingness to pay,
- pricing
- etc..

Economic Models

- Optimization
- Forecast
- Imitation
- Policy Measures

Command (taxes versus quantities)

- Direct Regulations (Permits, Quantity Regulations)
- Taxes

Computer and Information technologies

- Dataset Creations
- On-line Presentations and discussions

Proposed output

- How have the transition, development and technological change affected sustainability options?**
- How to consider post soviet states characteristics and differences in sustainable policy making?**
- How can be balanced economical, social and political problems in secure policymaking?**
- Which is the best arsenal of tools and methods for implementation of best practices for effective management of natural resources in Post Soviet area?**

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