

ICM: INTEGRATED COASTAL MANAGEMENT

The background of the slide is a solid dark blue. In the bottom right corner, there are several overlapping, wavy, light blue lines that create a sense of movement or water ripples.

New Words:

aquaculture 水产业 reclamation 围垦

dyking 堤坝 externality 外部性

archipelago 群岛 jurisdiction 权限

intersectoral integration 部门间的综合

propriatorship of public submerged lands and waters 公共水土的所有权

stewardship of resources 合理利用资源

1. WHY ICM?



Mare Liberum (Freedom of the Sea)

- The sea was common to all, "because it is so limitless that it cannot become a possession of any one, and because it is adapted for the use of all, whether we consider it from the point of view of navigation or of fisheries "(p.28).
- "For every one admits that if a great many persons hunt on the land or fish in a river, the forest is easily exhausted of wild animals and the river of fish, but such a contingency is impossible in the case of the sea" (p.57).
- (Grotius, 1609, translated by Nagoffin, 1916)

Mare Clausum (Dominion of the Sea)

- The abundance of the sea might be diminished by promiscuous uses as the case of those on land. Less profit could be accrued from one's use of the sea because of other men's uses, such as fishing, commerce, navigation, as well as the uses of "pearls, corals and other things of that kind."
 - (Seldon, 1635)

海岸管理的历史时期模型

时 期	70年代以前	70年代	80年代	90年代
1. 目标	管理岸线	开发海岸区	管理海岸区	ICM
2. 理论背景		结构主义	从结构主义到总系统理论	引入可持续发展概念
3. 概念基础	岸线		行政的或地貌学的地区大陆边和/或	200 海里管辖区
4. 方法		单学科	多学科	再加综合学科与边缘学科
5. 主要涉及的学科	地貌学, 海上运输	再加上生物 学和法律	再加上 生态学	再加上经济 学、社会学...

PRINCIPAL COASTAL USES

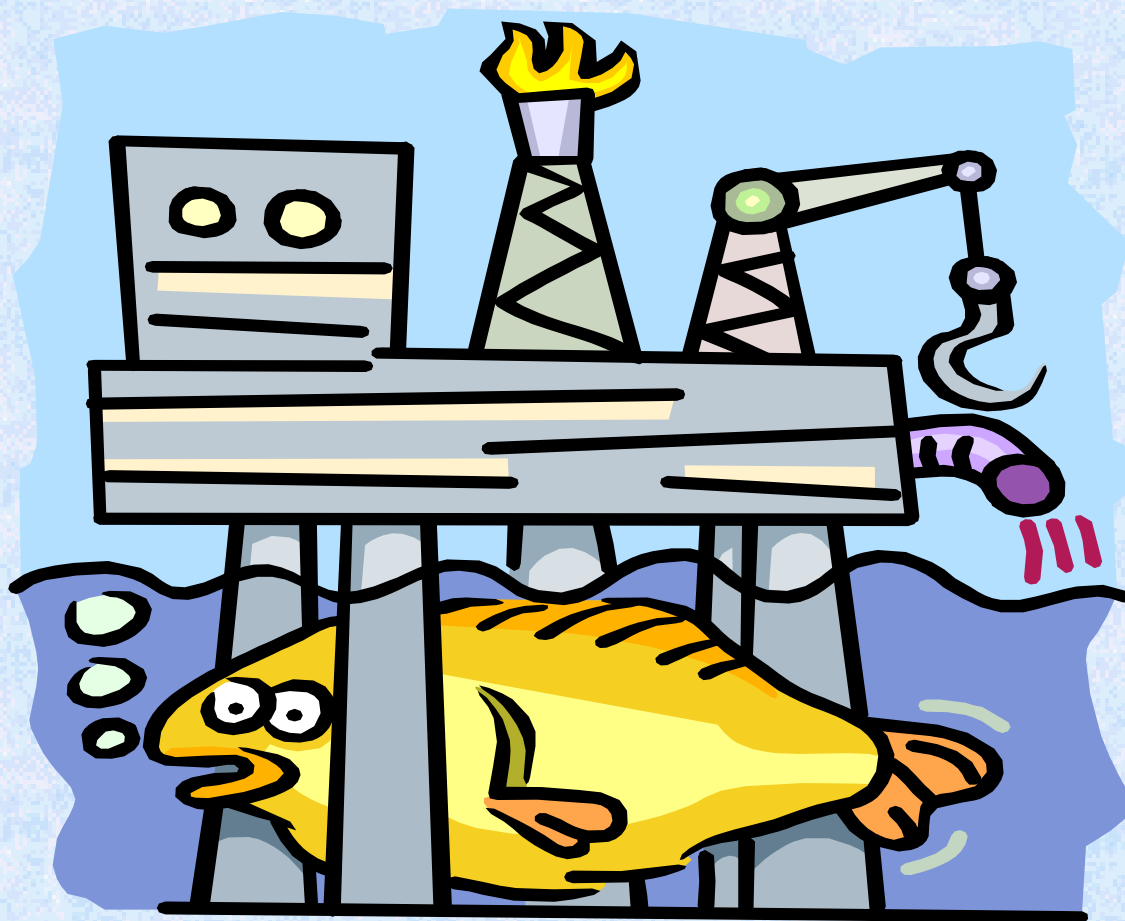
(TBC)

- Navigation and communications: shipping, port, aids, cables
- Living resources: fishing, aquaculture, biotech, aquarium
- Minerals and energy: hard minerals, offshore oil/gas
- Tourism and recreation: hotels, swimming, diving, fishing

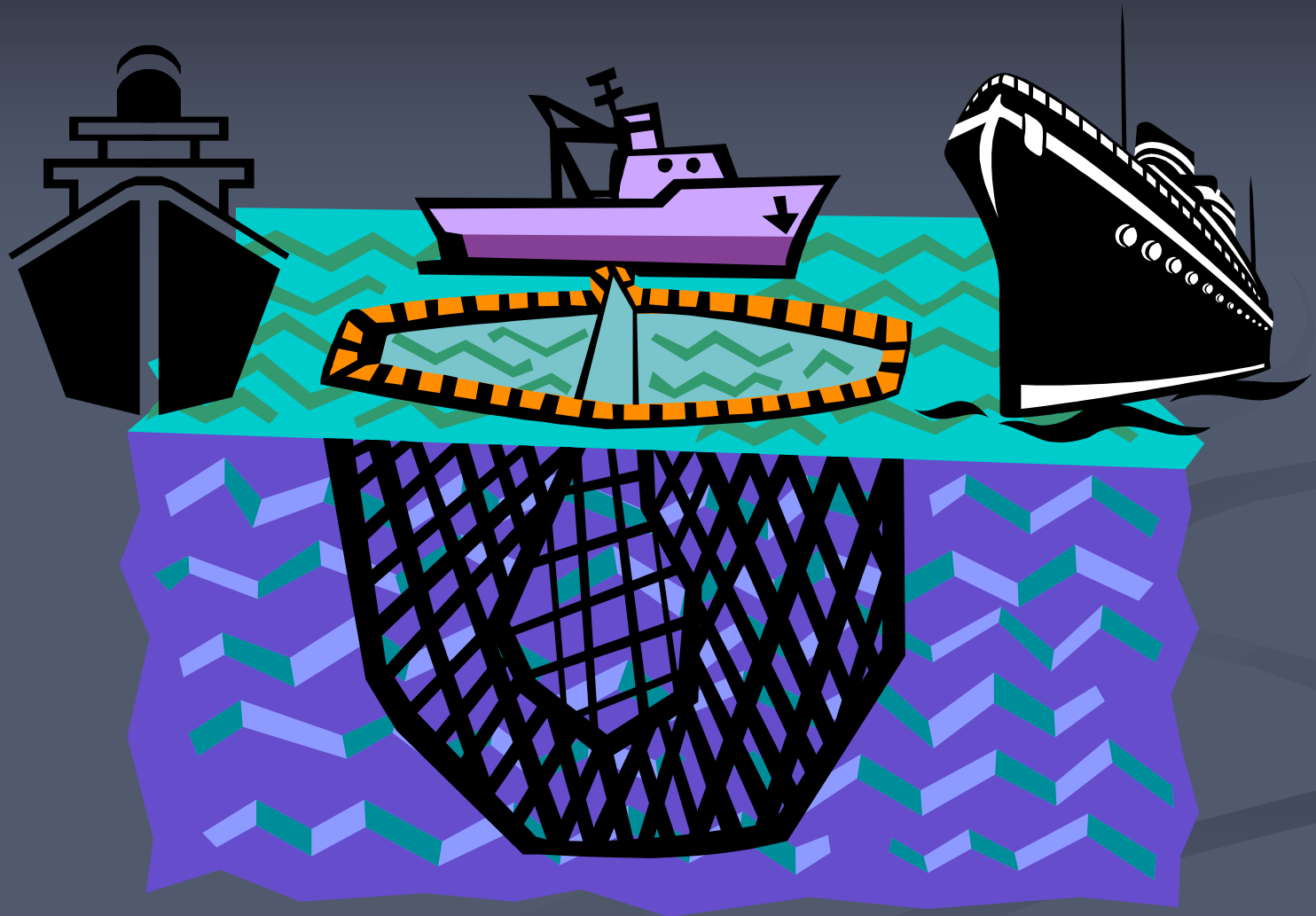
PRINCIPAL COASTAL USES

- Coastal construction: reclamation, infrastructure, dyking
- Waste disposal: industrial, municipal, agriculture drainage
- Environmental protection: protected area
- Beach/shoreline management: wave breakers, replenish
- Military activities: test range, exercise, special zones
- Research: oceanography, coastal surveys

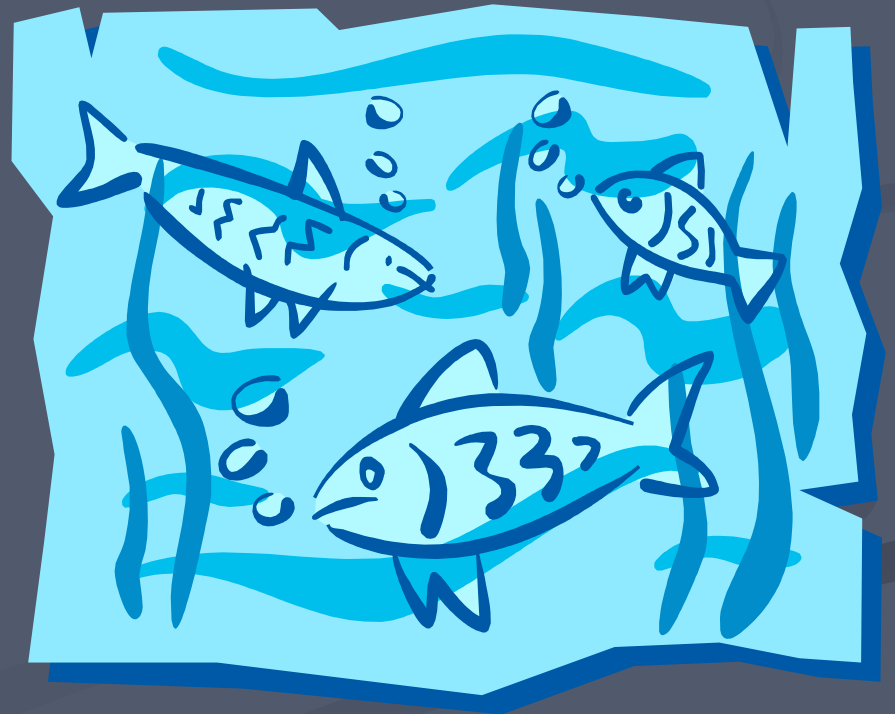
OIL vs FISH



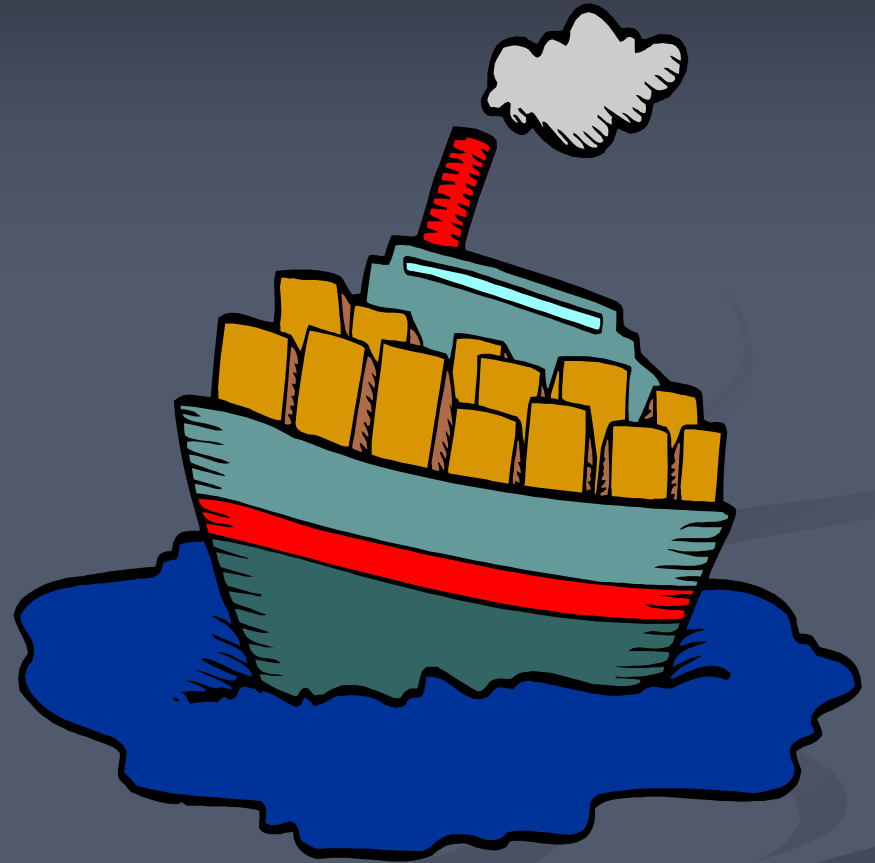
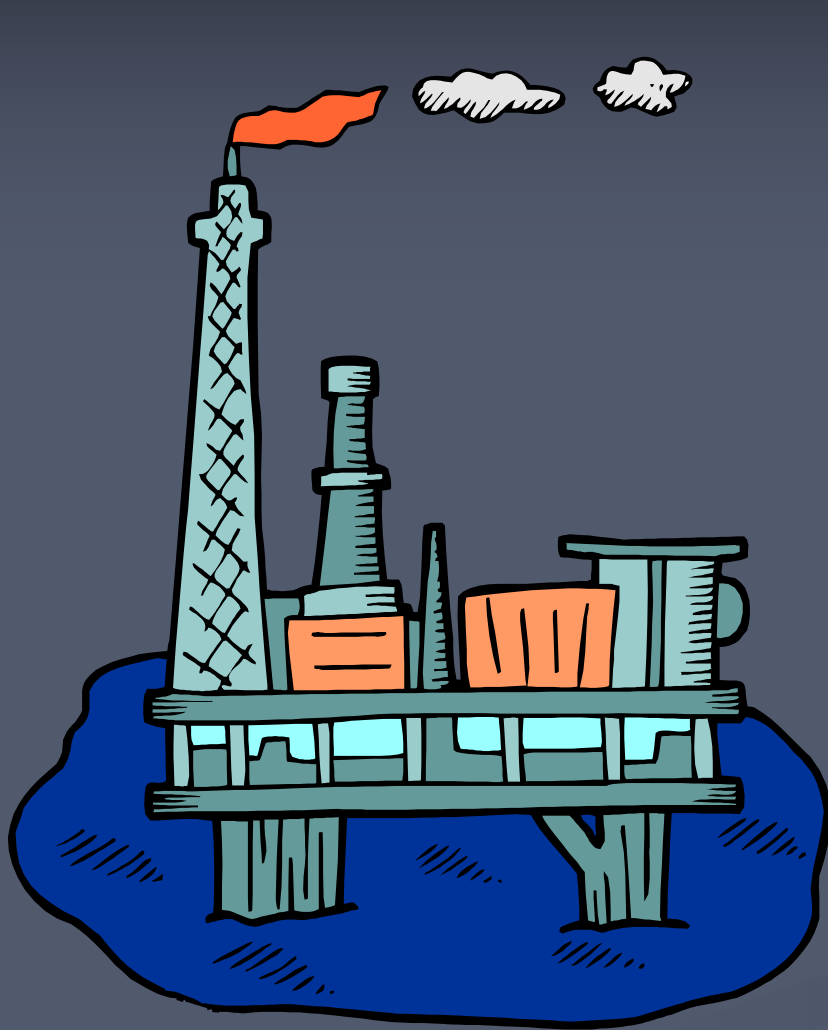
SHIPPING vs FISH



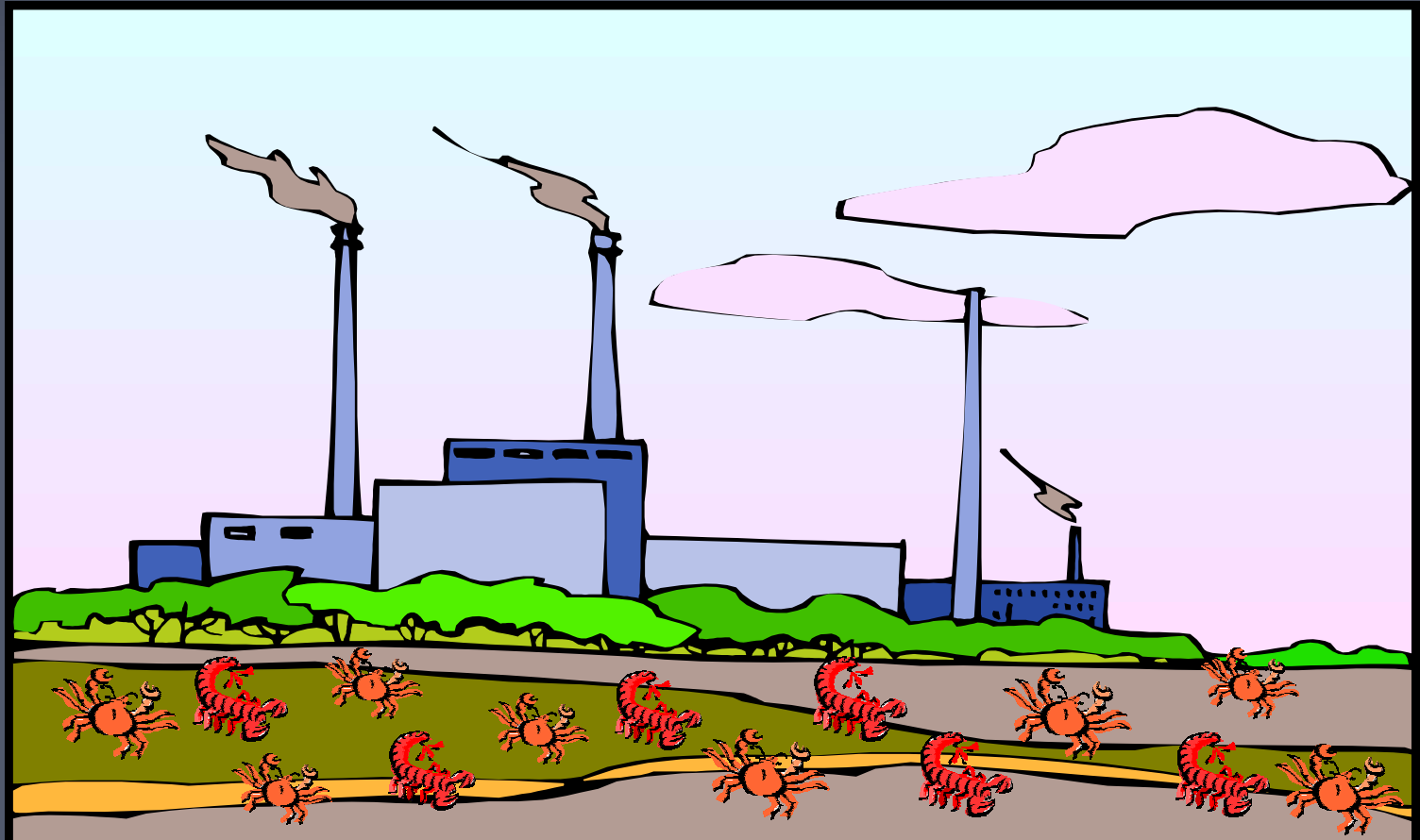
WASTE vs FISH



OIL vs SHIPPING



LAND vs SHELLFISH HABITAT



TOURISM vs WASTE

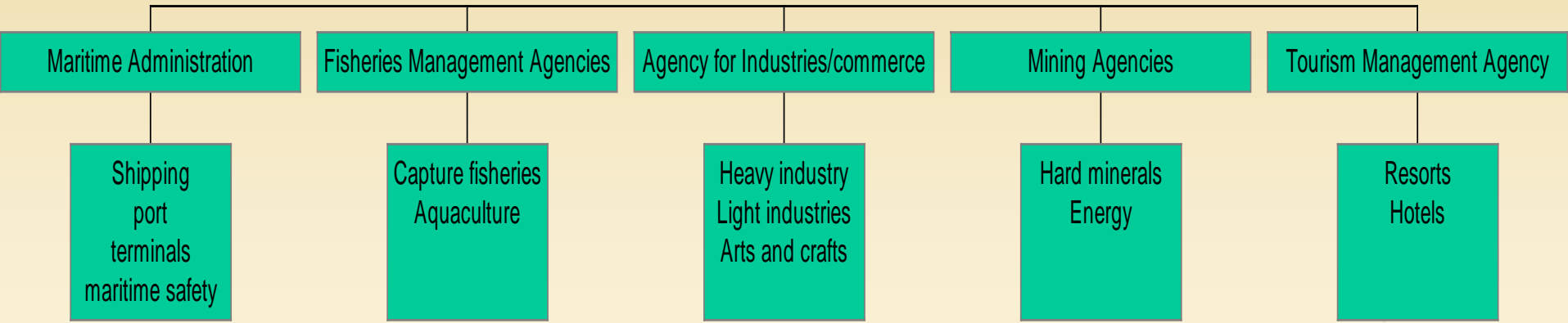


TOURISM vs MINING

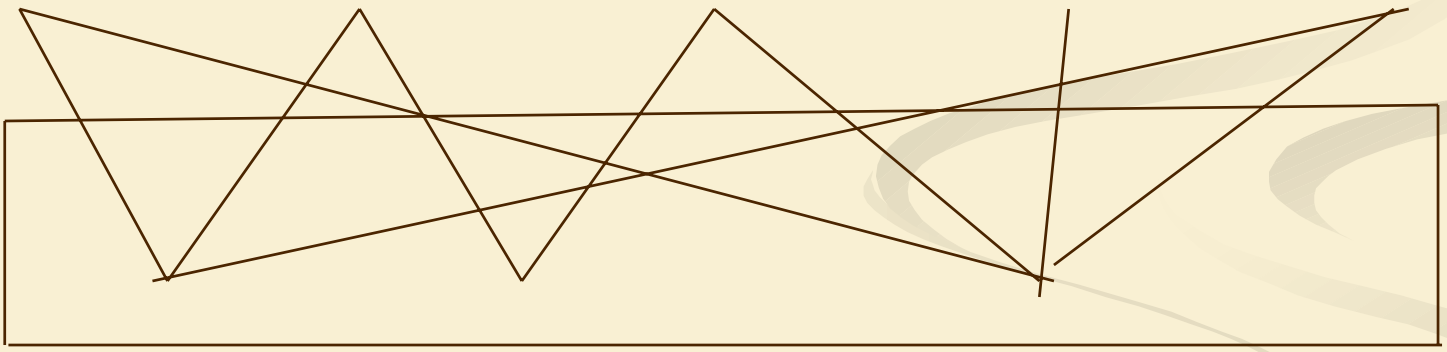


In response to the conflicts...

- **Governance Failure**
- **Market Failure**
- **Information failure**



Conflict Zone



Market Failure

--- Market prices frequently fail to reflect the true cost of a good or a service and so send incorrect signals to the marketplace; sometimes, putting a price on a good may be impossible.

- Externalities
- Common property
- Intrinsic values

Policy failure

--- Policy failure is the single most important cause of natural resource loss and ecosystem degradation.

- Pursuit of short-sighted economic gain
- Lack of awareness of the long-term implications of non-intervention.

Information failure

- In developing countries, information is lacking, especially in such areas as renewable resources and, more particularly, on the status of renewable resources (especially fisheries), natural resource dynamics, land-use and tenure patterns, institutional, social and cultural conditions, and levels of investment in coastal areas.

2. What is ICM

Integrated Coastal Area Management (ICAM) is an interdisciplinary activity where natural and social scientists, coastal managers and policy makers, in the long-term, focus on how to manage the diverse problems of coastal areas.

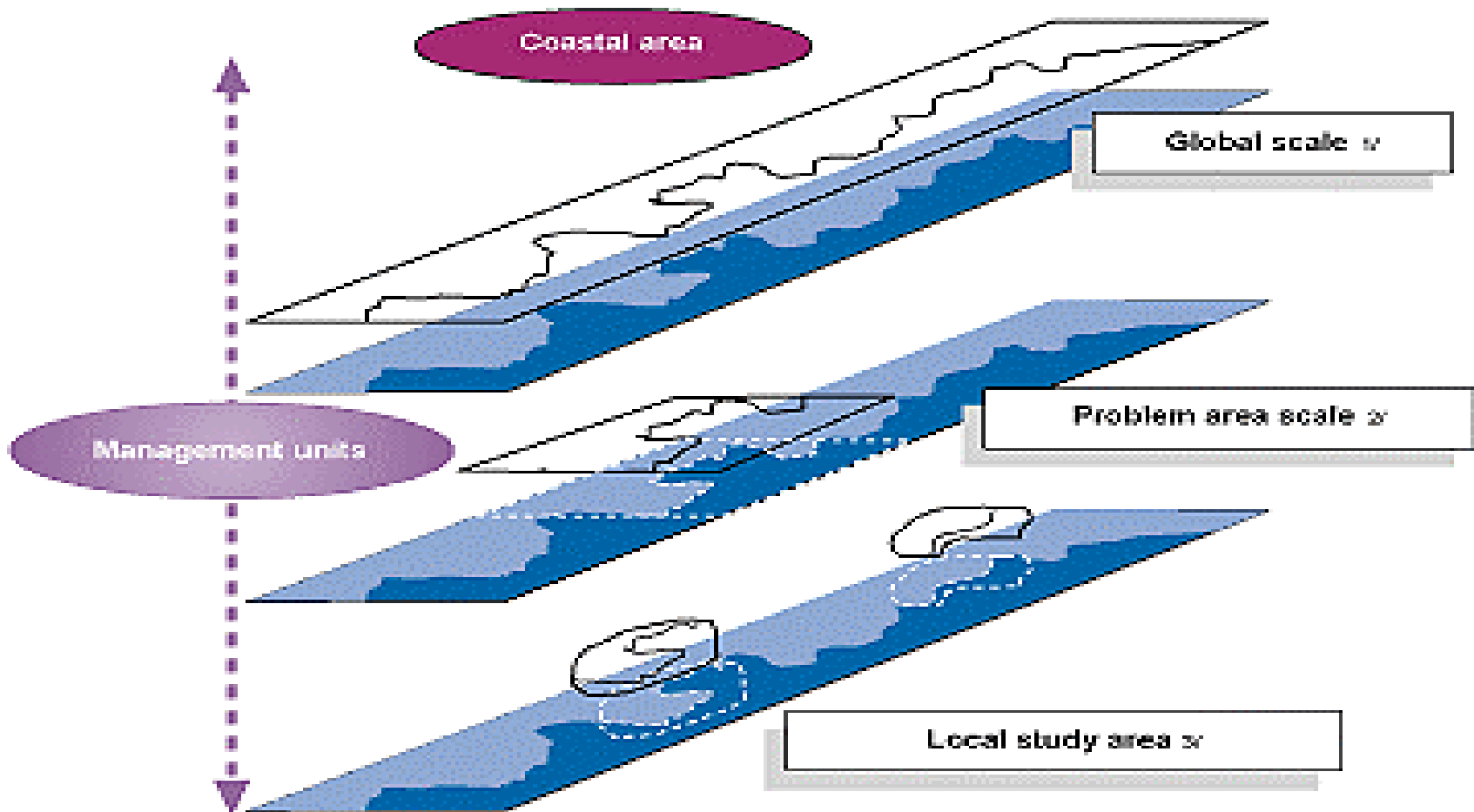


2.2 Objectives for ICAM

- provide for an integrated policy and decision-making process to promote compatibility and a balance of uses;
- identify existing and projected uses of coastal areas and their interactions;
- concentrate on well-defined issues;
- apply preventive and precautionary approaches in planning and implementation;
- promote the application and development of methods that reflect changes in value resulting from uses of marine and coastal areas, including pollution, marine erosion, loss of resources and habitat destruction;
- provide access, as far as possible, for concerned individuals, groups and organizations to relevant information and opportunities for consultation and participation in planning and decision-making at appropriate levels.

--- Chapter 17 of Agenda 21

2.3 The different spatial management scales of ICAM



The boundaries of a managed coastal area may change as different problems are addressed. Influencing factors may be biophysical, economic, social, jurisdictional and/or organizational in character.

- National or sub-national level scale: could be a bay, entire archipelago or whole coast under national jurisdiction.
- Problem area scale: defined on the basis of prevailing management issues or administrative level of support.
- Local study scale: one or more pilot sites selected for special studies or for demonstration purposes.

2.4 Legal principles to support ICAM

- The precautionary principle
- The principle of preventive action
- The polluter pays principle
- Responsibility not to cause trans-boundary environmental damage
- Rational and equitable use of natural resources
- Public involvement

The precautionary principle

- The precautionary principle is particularly appropriate in the context of ICAM because of the vulnerability of many coastal resources and because scientific knowledge about the complex web of interconnected biological processes found in coastal systems is far from complete.

The principle of preventive action

- This principle requires action to be taken to avert known or quantifiable harm. Preventive measures are usually justifiable on the basis that it is cheaper, safer and more desirable to prevent environmental harm occurring than to rectify it later (if, indeed, this is possible).

The polluter pays principle

- This principle is concerned with ensuring that the social costs of environmental degradation are borne by those responsible for the environmental degradation rather than by society at large.

Responsibility not to cause trans-boundary environmental damage

- Water is not only the most important component of coastal ecosystems, it is also often shared by more than one country. Thus, the management of aquatic resources and the control of marine pollution frequently have trans-boundary implications.

Rational and equitable use of natural resources

- Where a resource is shared by more than one country (typically an international watercourse or fishery) international law also emphasizes that the community of interests of co-users of the resource gives rise to an obligation to negotiate in good faith to bring about an equitable allocation of the resource.

Public involvement.

- There has been a worldwide trend to provide increased public access to environmental information and to require consultation with interested or affected members of the public when preparing new policies or authorizing developments that may affect the natural environment.



COMMUNITY-**B**ASED **C**ONSERVATION **M**ANAGEMENT

CIDA-FUNDED
UPCD Tier 1

公众参与环境管理

Partners

Canada: Saint Mary's University
University of New Brunswick
Nova Scotia Agricultural College
Dalhousie University

Vietnam: Vietnam University

China: Fujian Agriculture and Forest University

Xiamen University: ESRC

Youth Organization

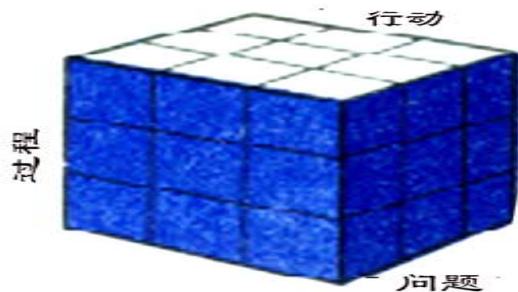
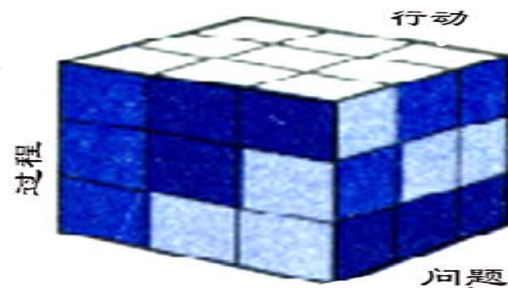
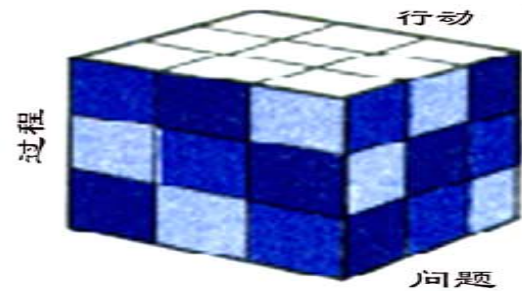
Women association

District Governor

Local residents



2.4 ICM Framework



Non-sustainable Development

- Environmental degradation
- Resource depletion
- Multiple resource-use conflict

Moving Towards Sustainability (Transition)

Sustainable Development

- Protection of environment and biodiversity
- Sustainable use of resources
- Minimization of resource-use
- Improved quality of life

2.5 What does Integration mean?

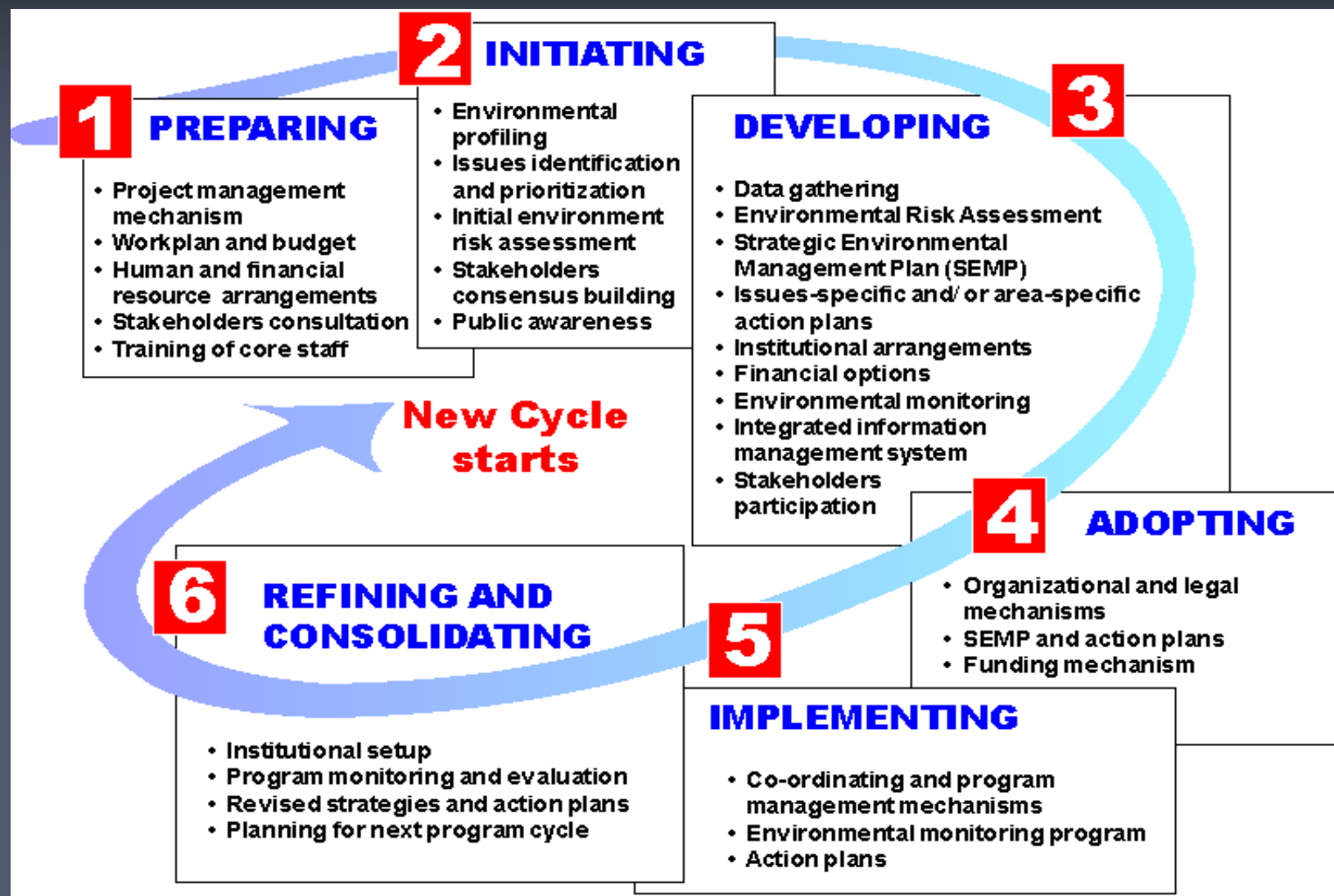
- *Intersectoral integration*
- *Intergovernmental integration*
- *Spatial integration*
- *Science-management integration*
- *International integration*

2.6 Major Functions of Integrated Coastal Management

- Area Planning
- Promotion of Economic Development
- Stewardship of Resources
- Conflict Resolution
- Protection of Public Safety
- Proprietorship of public Submerged Lands and Waters

2.7 The Processes of ICM

Planning and Implementation Cycle



- Restructure the existing single-sector oriented management systems, reduce the cost of multiple use conflicts, and thus increased benefits of various coastal investments to the society as a whole.

International Conventions

- UNCLOS
- IMO
- UNEP

Agenda 21, Chapter 17

Integrated management and sustainable development of coastal and marine areas

- integrated policy multiple use
- preventive and precautionary principles
- value changes
- stakeholders consultation and participation

GEF

International waters

- land-water use
- contaminants
- transboundary

UNDP

Sustainable human development

- poverty
- environment
- employment
- women

Integrated Coastal Management

Global Programme of Actions on land-based pollution (1995)

- national level
- regional cooperation
- international cooperation
- approaches

- issues identification and assessment
- priorities
- integrated management and management
- strategies and action
- financing mechanism

Relationship of ICM with Major International Agenda

Terms of reference for 2002-2003

1. Investigation of interdisciplinary coastal processes to improve the scientific basis for the management of coastal seas
2. Development of scientific methodologies and techniques to suit the needs of coastal managers
3. Development of an Internet information system on marine sciences and observation in support of ICAM.
4. Study of human communities and ecosystem interactions, in coastal areas, and in particular in coastal urban environment, through the development of environmental and performance indicators.

5. Training on science/policy interface in coastal areas, as well as technical training in the use of scientific techniques
6. Implement the ICAM programme through IOC regional mechanisms, based on the strategy proposed by the Expert Consultation, taking into account the unique and special needs of each region.



Thinking:

- What is ICM?
- What does Integration mean and which one is the most important aspect?

**Thank You
for Your
Attention!**