

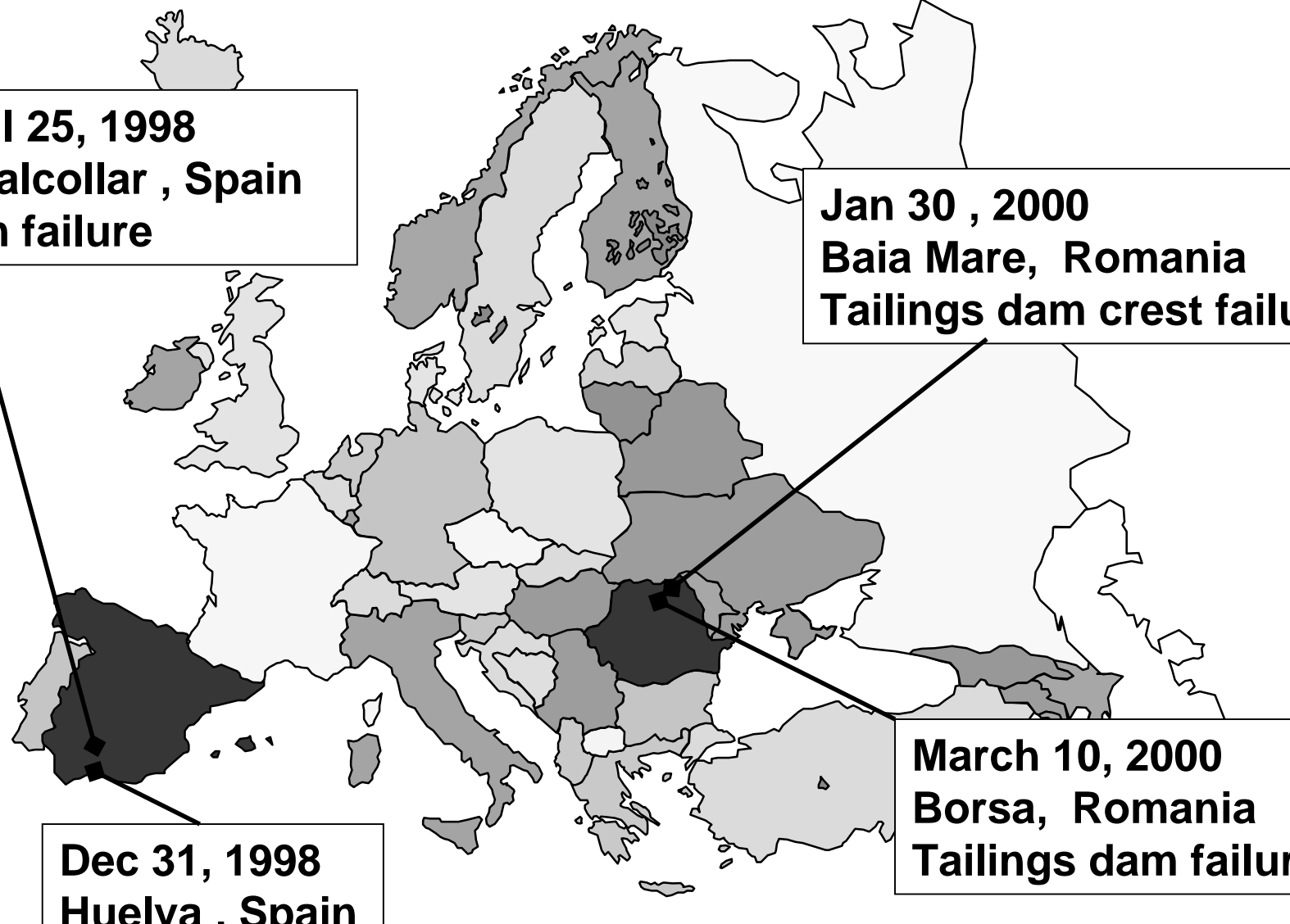
LESSONS FROM THE BAIA MARE

OECD GLOBAL FORUM ON INTERNATIONAL INVESTMENT
Conference on Foreign Direct Investment and the
Environment

Feb 7/8 , 2002



Tom Garvey



**April 25, 1998
Aznalcollar , Spain
Dam failure**

**Jan 30 , 2000
Baia Mare, Romania
Tailings dam crest failure**

**Dec 31, 1998
Huelva , Spain
Dam failure**

**March 10, 2000
Borsa, Romania
Tailings dam failure**

BAIA MARE

THE FACILITY



Reprocessing of old cyanide rich tailings, dumped within the city limits, for purposes of recovery of gold ; the reprocessed tailings to be deposited in a new pond 8 kms from the city

System build around a closed circuit model in which the new tailings pond received sludge and cyanide rich process waters ; after deposition of the tailing sludge the process waters were re-cycled back to the plant and the cyanide re-used

No provision made for emergency discharge of waters

Embankment walls constructed from the secondary tailings , spread by hydrocyclones to ensure the fine tailings went to the middle of the pond leaving the coarser sediments for embankment wall construction

BAIA MARE

WHAT HAPPENED

On January 30th 2000

**after a sequence of unfavourable weather conditions
The pond overflowed tearing a 25 m
breach in the embankment wall**



**100 000 cubic metres of tailings
sludge and waters containing
some 120 tonnes of cyanide escaped
into local waterways and
subsequently
down into the Danube.**

**120 tonnes of cyanide is the equivalent
of over 500 million lethal doses**



BAIA MARE

THE DAMAGE

1,500 tonnes of fish were killed

Plankton in the Somes and Upper Tisza
was substantially destroyed



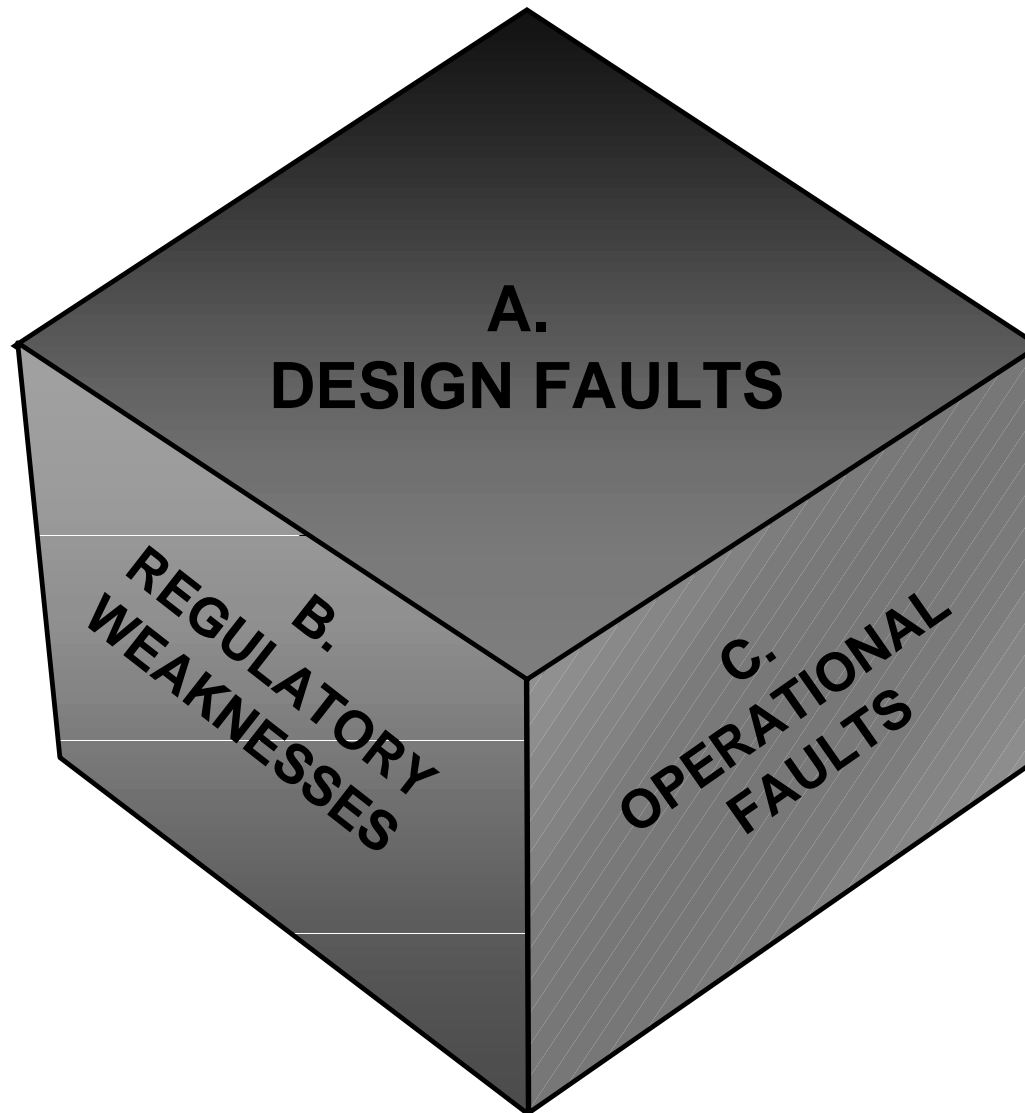
Birds and mammals not seriously effected

A N D

Serious economic impacts
as the fishing and tourism industries were
Destroyed so far as the foreseeable future was concerned

BAIA MARE

WHY DID IT HAPPEN



Inappropriate use of a zero discharge system

plus

Inadequate embankment construction due to lack of differentiation in the deposition of tailings

Inadequacy of hydrocycloning equipment for such temperatures



Original Environmental Impact Assessment flawed

Failure to take account of water balance data

Inappropriate risk classification of pond for monitoring purposes

Complex and inefficient permitting procedures

REGULATORY ASPECTS

CLEAR , SEVERE , DETAILED , MANDATORY

- RISK ASSESSMENT METHODOLOGY
- STRUCTURAL SPECIFICATIONS
- DETOXIFICATION REQUIREMENTS
- MONITORING

REQUIREMENTS FOR ACCIDENTS AND EMERGENCIES

PROVISION FOR CLIMATE CHANGE

CLOSURE AND AFTERCARE

REGULATORY INADEQUACY

SIMPLE INADEQUACY

**CONFUSION/OVERLAPPING IN
RESPONSABILITIES**

ABSENCE OF SKILLS

LACK OF FINANCIAL RESOURCES

POLITICO/ECONOMIC PRESSURES

**LOW VALUATION OF ENVIRO.
HERITAGE/ASSETS**

INTER MINISTERIAL POWER WARS

NATIONAL/LOCAL PRESSURE FOR JOBS

LIABILITY OF FINANCIAL BACKERS

ADVANTAGES



COMPENSATE FOR A WEAK REGULATORY REGIME

REMOVE PRESSURE TO CUT CORNERS IN FAVOUR OF JOBS

PERSUADE BACKERS TO INSIST THAT THE OPERATOR APPLIES THE ENVIRONMENTAL REGULATIONS IN HIS COUNTRY OF ORIGIN

PERSUADE BACKERS TO UNDERTAKE INDEPENDENT ENVIRONMENTAL IMPACT ASSESSMENT AT THE OUTSET

ATTACH ANY OTHER CONDITIONS WHICH MIGHT BE HARD FOR HOST COUNTRY TO DO

FACILITATE THE POSTING OF BONDS TO PAY FOR CLOSURE AND AFTER CARE

RECOMMENDATIONS

**NATIONAL , REGIONAL ,
AND INTERNATIONAL LAWS
CONCERNING
LIABILITY FOR ENVIRONMENTAL
DAMAGE
SHOULD ASSIGN THE LIABILITY
NOT ONLY TO THE OPERATOR
BUT ALSO TO THE PROVIDER OF
CAPITAL**

RECOMMENDATIONS

PUBLIC IFIs, MERCHANT BANKS, AND OTHER PROVIDERS OF PROJECT CAPITAL AND FINANCE SHOULD, REQUIRE OPERATORS WHICH THEY FINANCE FOR “FDI” TO OBSERVE THE ENVIRONMENTAL RULES AND REGULATIONS WHICH ARE APPLIED IN THEIR COUNTRY OF ORIGIN; THIS TO BE THE SUBJECT OF A “NEGOCIATED AGREEMENT” BETWEEN THE INSTITUTIONS AND AN APPROPRIATE ENVIRONMENTAL COUNTERPART.

RECOMMENDATIONS

THE CAPITAL PROVIDERS THEMSELVES SHOULD AS PART OF THAT AGREEMENT JOINTLY AGREE TO COMMISSION INDEPENDENT ASSESSMENTS OF THE ENVIRONMENTAL IMPACTS OF PROJECTS PRIOR TO CONCLUDING FINANCING AGREEMENTS: IN PARTICULAR SUCH ASSESSMENTS VERIFY THE APPROPRIATENESS OF THE PROJECT DESIGN IN RELATION TO LOCAL CONDITIONS

RECOMMENDATIONS

**INSIST ON COMPREHENSIVE
CLOSURE AND AFTERCARE
PLANS AND INCLUDE THE
FUNDS FOR PAYING THEM IN
THE OVERALL CAPITAL
PACKAGE.**

RECOMMENDATIONS

NATIONAL , REGIONAL , AND INTERNATIONAL LAWS CONCERNING LIABILITY FOR ENVIRONMENTAL DAMAGE SHOULD ASSIGN THE LIABILITY NOT ONLY TO THE OPERATOR BUT ALSO TO THE PROVIDER OF CAPITAL

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