




Environment & Health: Science or Policy driven?

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Content

- What problems do we face?
 - What can science do?
 - What can policy do?
 - How do we address science and policy?
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Viewpoint

Approach of environmental health problems

by scientific point of view

or by policy point of view?



Viewpoint

Approach of environmental health problems

by scientific point of view

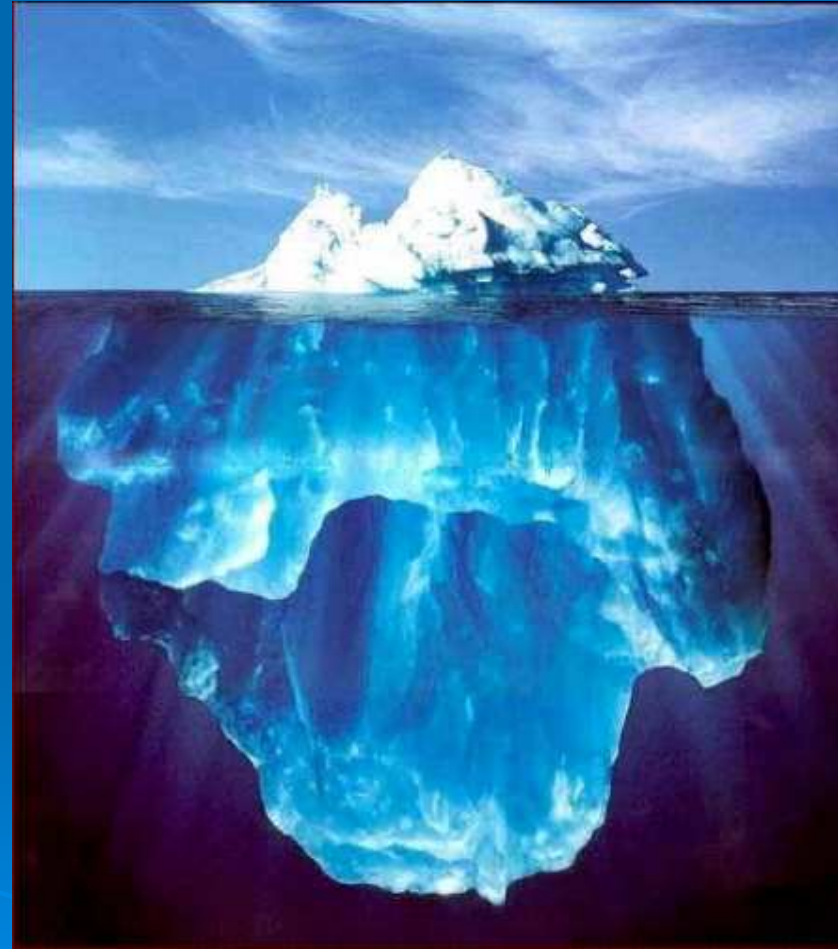
or by policy point of view?

.....or both?



The problem as 'iceberg'

- A problem often is presented as an objective given: "indoor air quality"
- Solving problems attracts more attention than problem finding: "best practices", "cost effectiveness".
- It is like paying attention only to the tip of the iceberg and ignoring what is below the water surface.



Environmental health

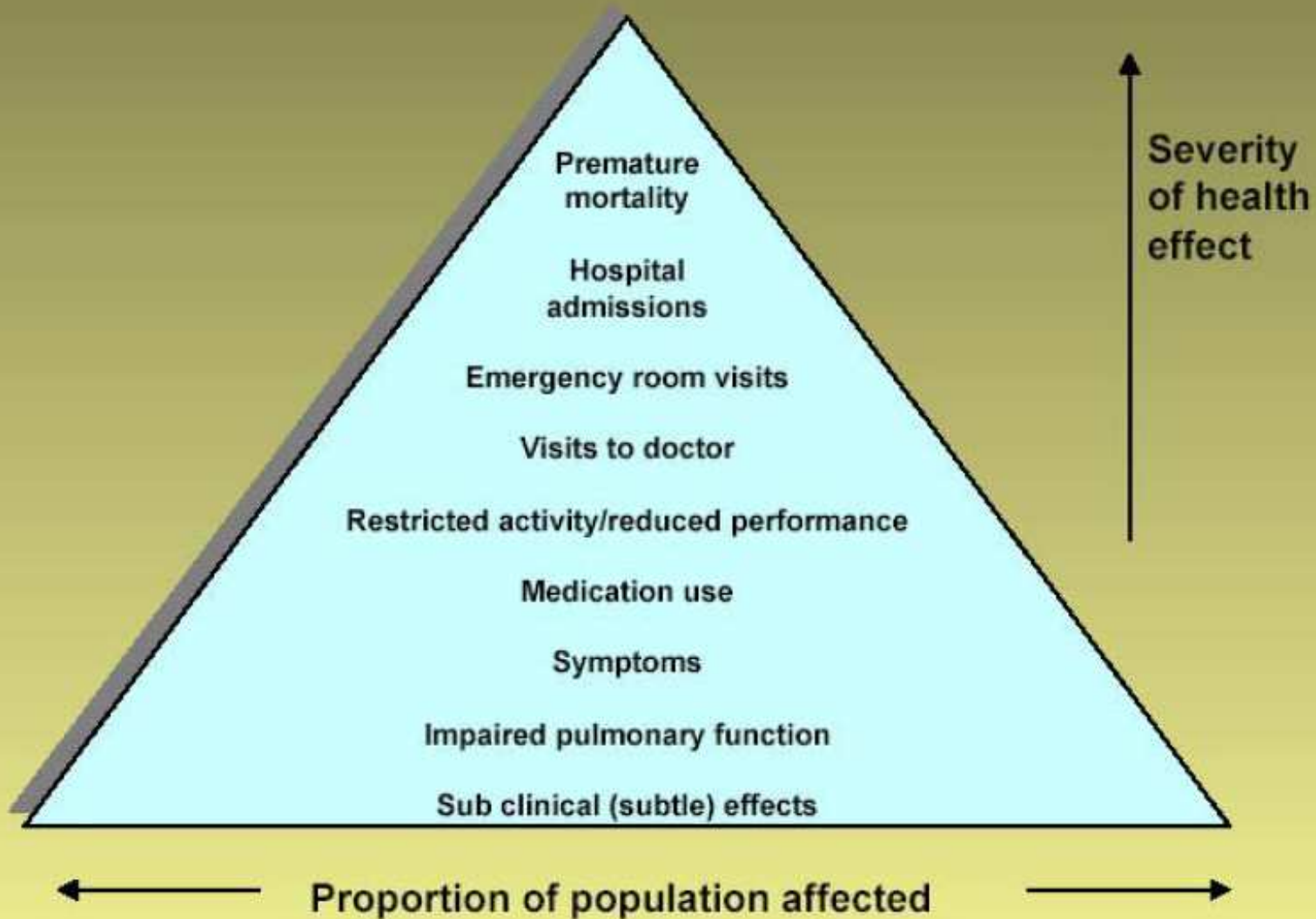
Part of the larger concept of Public health

Science: questions to increase the knowledge

Policy: questions to solve a broad problem

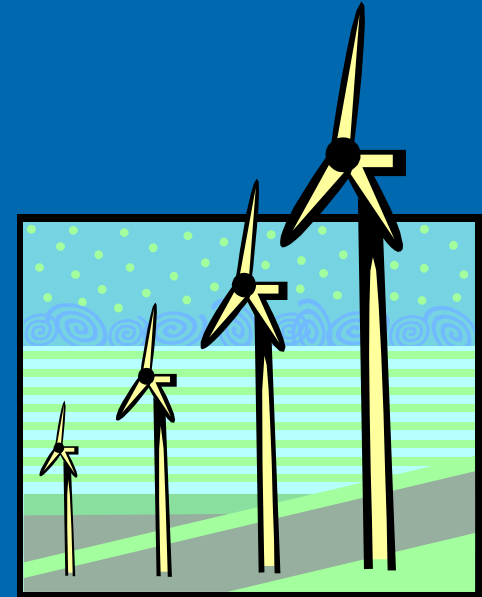


Air pollution health effects pyramid (ATS)



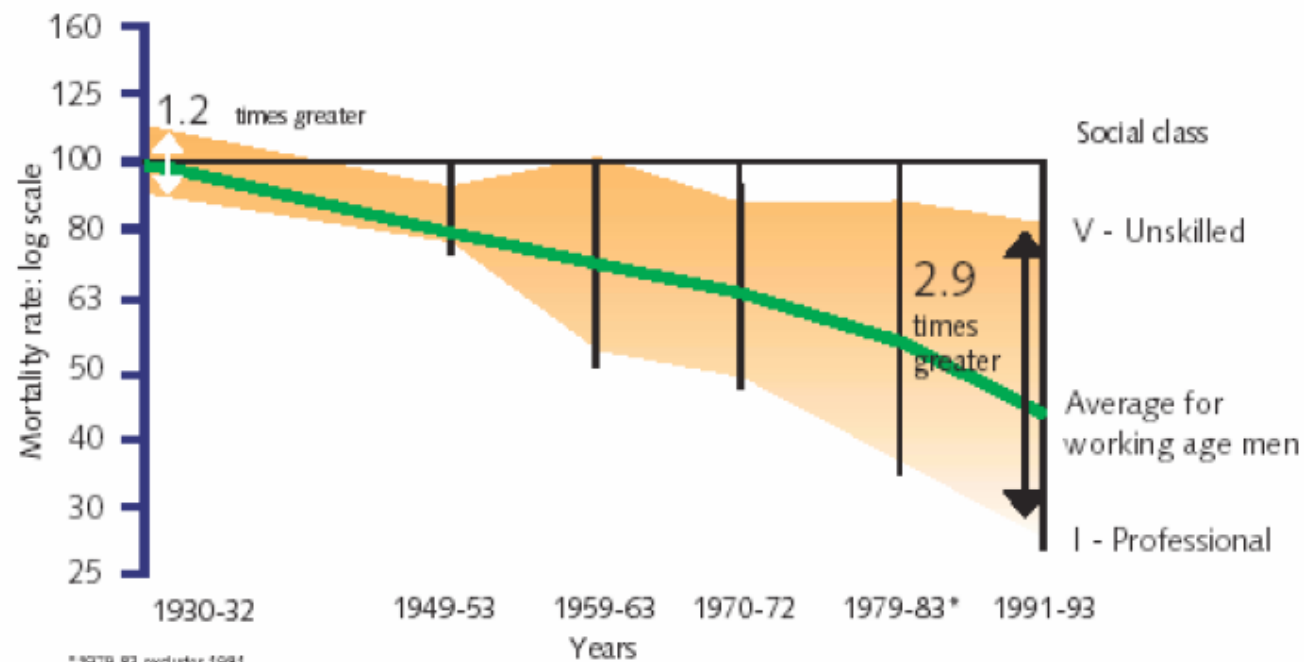
Some examples of policy relevant issues

- Chemicals
- Climate change
- Energy
- Socio-economic status



The widening mortality gap between the social classes

Figure 1: The Widening Mortality Gap Between the Social Classes



*1979-83 excludes 1981

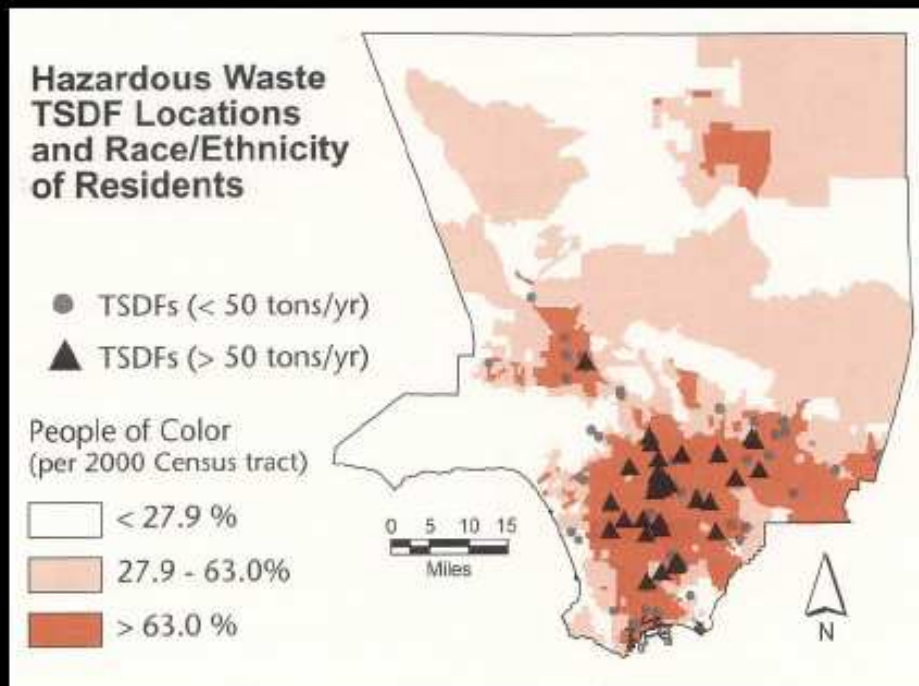
England and Wales. Men of working age (varies according to year, other aged 15 or 20 to age 64 or 65)

Source: Office for National Statistics, Decennial Supplements, analysis by DH Statistics Division

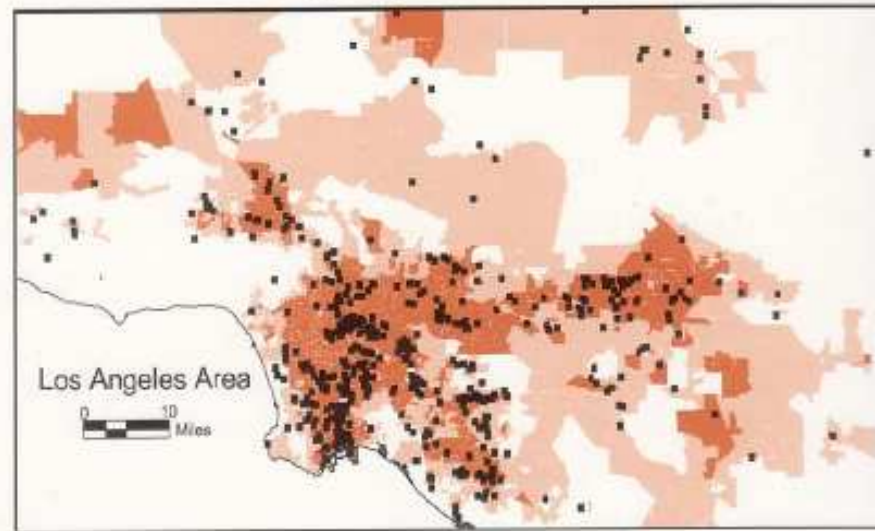
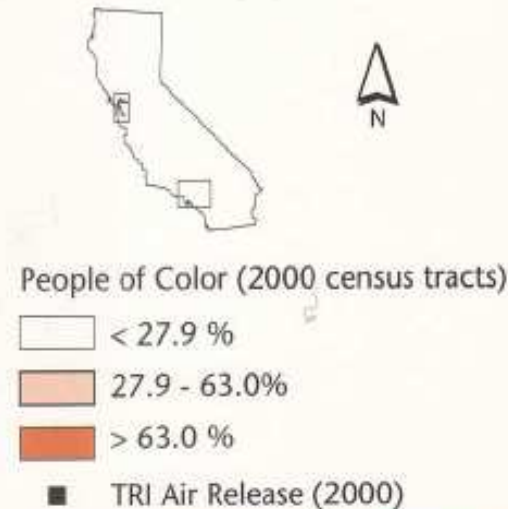
(Tackling Health Inequalities – A Programme for Action –DOH
June 2003)

Proximity/Exposure

More than 100 empirical studies found disproportionate proximity or exposure of minority and low-income populations to environmental hazards

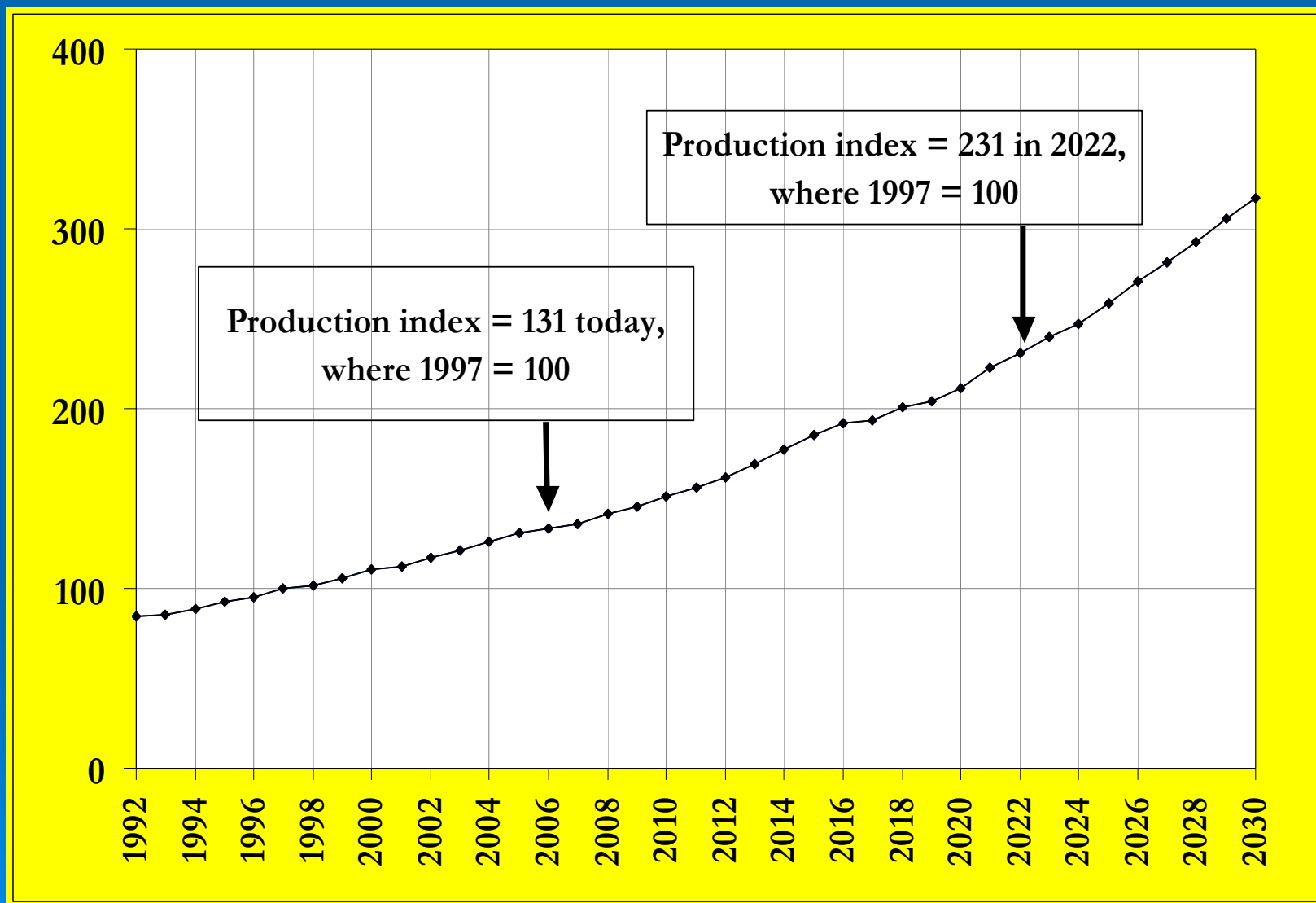


2000 TRI Air Release Locations and Race/Ethnicity of Residents



TRI = Toxic Release Inventory

Global chemical production is doubling every 25-years.



Changing policy viewpoint

Stage 1: Disposal and dilution

Stage 2: Waste treatment and pollution control

Stage 3: Toxics policy
(chemical-by-chemical approaches)

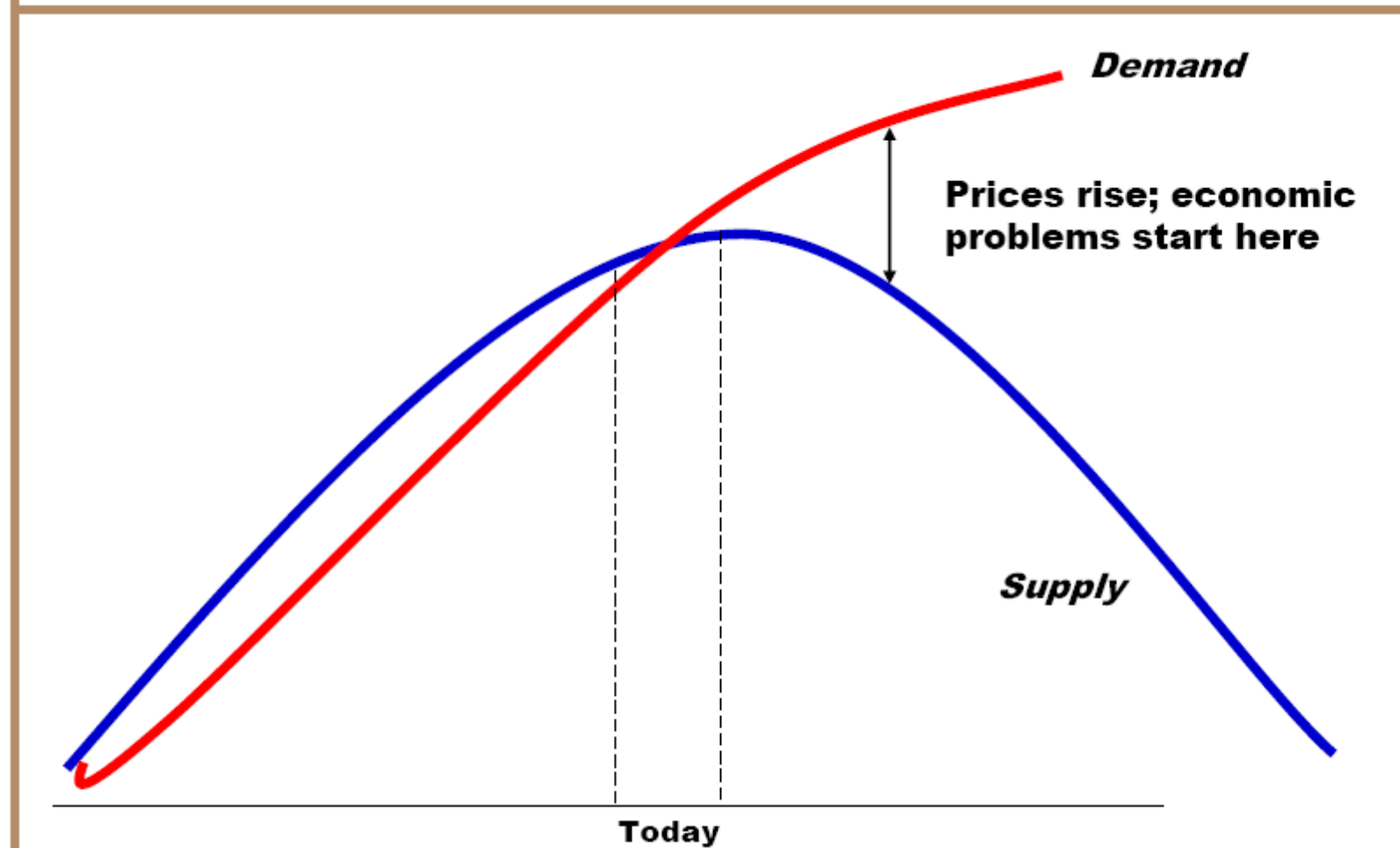
Stage 4: Chemicals and materials policy
(design, life cycle, transparency, accountability)

Peak Oil: The Effect of \$10/Gallon Gas on Public Health

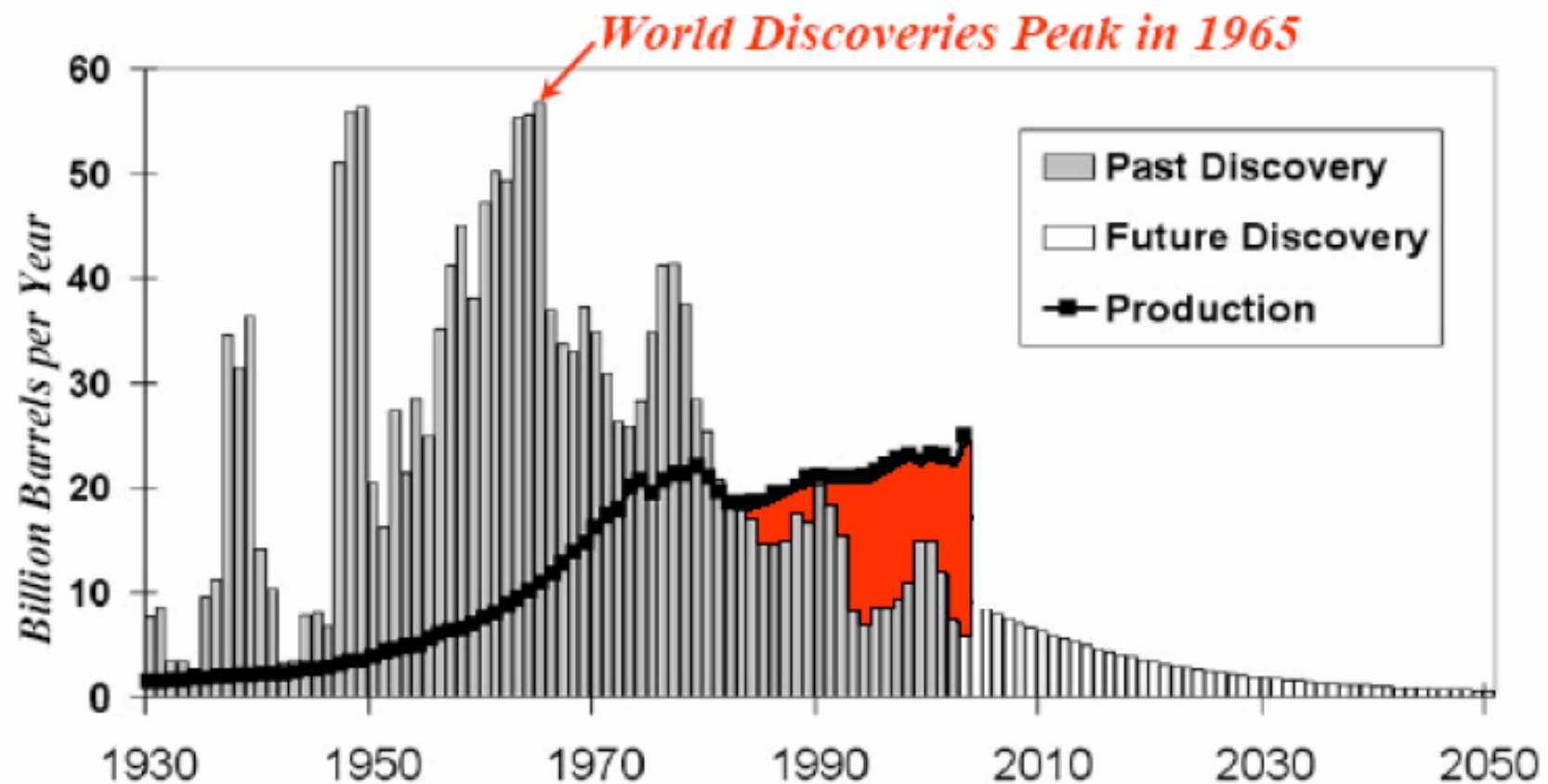


**Lesla Dixon-Gray, MSW, MPH
Portland Peak Oil Task Force**

Supply Peaks, Can't Meet Demand

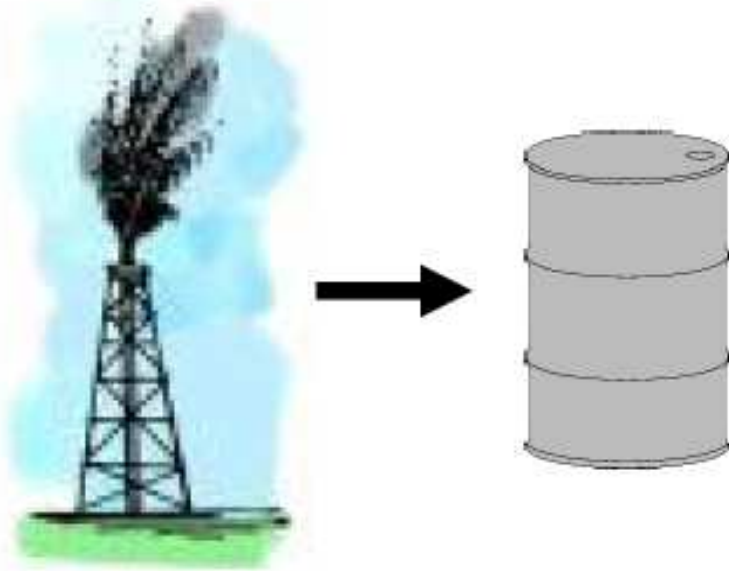


Production Exceeds Discoveries Since 1983



David Hughes, Geological Survey of Canada
From Campbell, 2004

For Every Barrel We Find ...



We use ~3 barrels



Hirsch Report

- Peak inevitable
- Timing uncertain; possible in 5-10 years
- Consequences will be serious
- Massive mitigation effort needed
 - 20 years lead time
 - \$1 TRILLION
- Costs of preparing *too late* will far exceed the costs of preparing *too soon*.

Task Force Findings about Vulnerable Populations

- Vulnerable Populations are affected in:
 - Transportation
 - Food / Agriculture
 - Economy
 - ✓ Unemployment
 - Public Health
 - Social Services
 - Health Care
 - Education
 - Police and Fire
 - Housing



Impacts

- Transportation
 - Auto use will decline and people will seek out alternative transportation.
 - Population will likely shift to city centers, density and mixed-use development will increase

Food and Agriculture Impacts

- Decrease in the amount and variety of food produced.
- Food will cost more
 - Low Income Households could see a decline in diet and nutrition
- Households will experience pressure to grow, process, and handle their own food

Impacts on Business, Economy, and Jobs

- Increased unemployment and “New Vulnerables”
- Loss of health care support for the unemployed

Impacts of Public and Social Services

- Vulnerable and marginalized populations will grow and be hit first and hardest
- Reduction in health care coverage
- Protection of public's health will be at an increased risk
- Demand for social services will increase, but the ability to provide services will decline

Environment & health

Problems can be structured



Policy drivers

Incorporated in society

Economy

Population growth/ composition

Cultural issues



problems



Four types of policy problems

Far from
certainty on
required and
available
knowledge

unstructured
problems

moderately
structured problems
(agreement on goals)

moderately
structured problems
(agreement on means)

structured
problems

Close to agreement on
norms and values at stake

Multi-level governance: who owns the problem?

- Organizations operating in a market environment (from MNC's to SME's);
- Organizations operating in a government or public sector environment (departments, Quango's, inspectorates)
- Organizations operating in a civil society environment (Real-NGO's, charities, religious organizations, non-public schools, non-commercial hospitals, etc.)
- Citizens

Multi-**level** governance: who affects who, on what regional/functional scale?

- EU
- National state governments
- National regional governments
- Cross-border regional governance bodies
- Local governments
- Functional governments (water boards, harbor authorities, etc.)

Governance is about networks

governance agencies

supply chain firms

political parties

media people

interest/lobby organizations

real estate developers

NGO's

construction/building industry

healthy/at-risk/patient citizens

air/soil cleaning industry

chemists

branch associations

industrial hygienists

architects

engineers

GP's

radiation specialists

geologists

Policy

- What is the position of policy?

Politics and analysis -- Problem types

Far from certainty on required and available knowledge

Unstructured problem

Discussing means

Policy domain

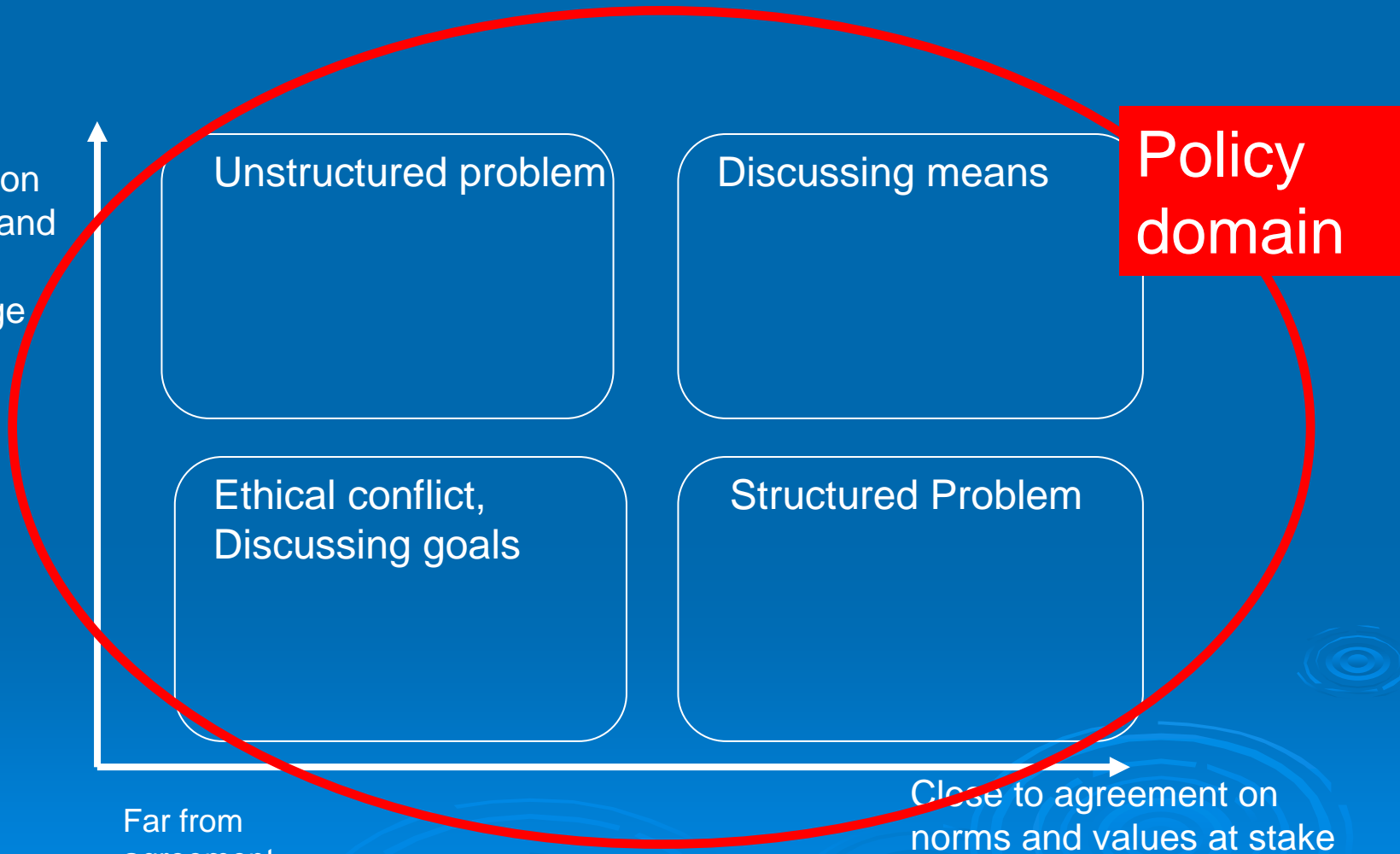
Ethical conflict,
Discussing goals

Structured Problem

Close to certainty

Far from agreement

Close to agreement on norms and values at stake



Political Information Frames Policy Information! (a)

➤ Political information.

- Information about public opinion, party competition, coalition strategy, consequences of alternative decisions on these;
- “Whether or not it is true, how many people believe it to be true? Who are they? How strong is their belief?”



Political Information Frames Policy Information (b)

➤ Policy information.

- Technical, focused, systematic analysis of policy inputs and outputs of government and its effects on society.
- Strategic, future-oriented analysis and criticism of vital mega- and meta-policy assumptions underlying government policies and programs.

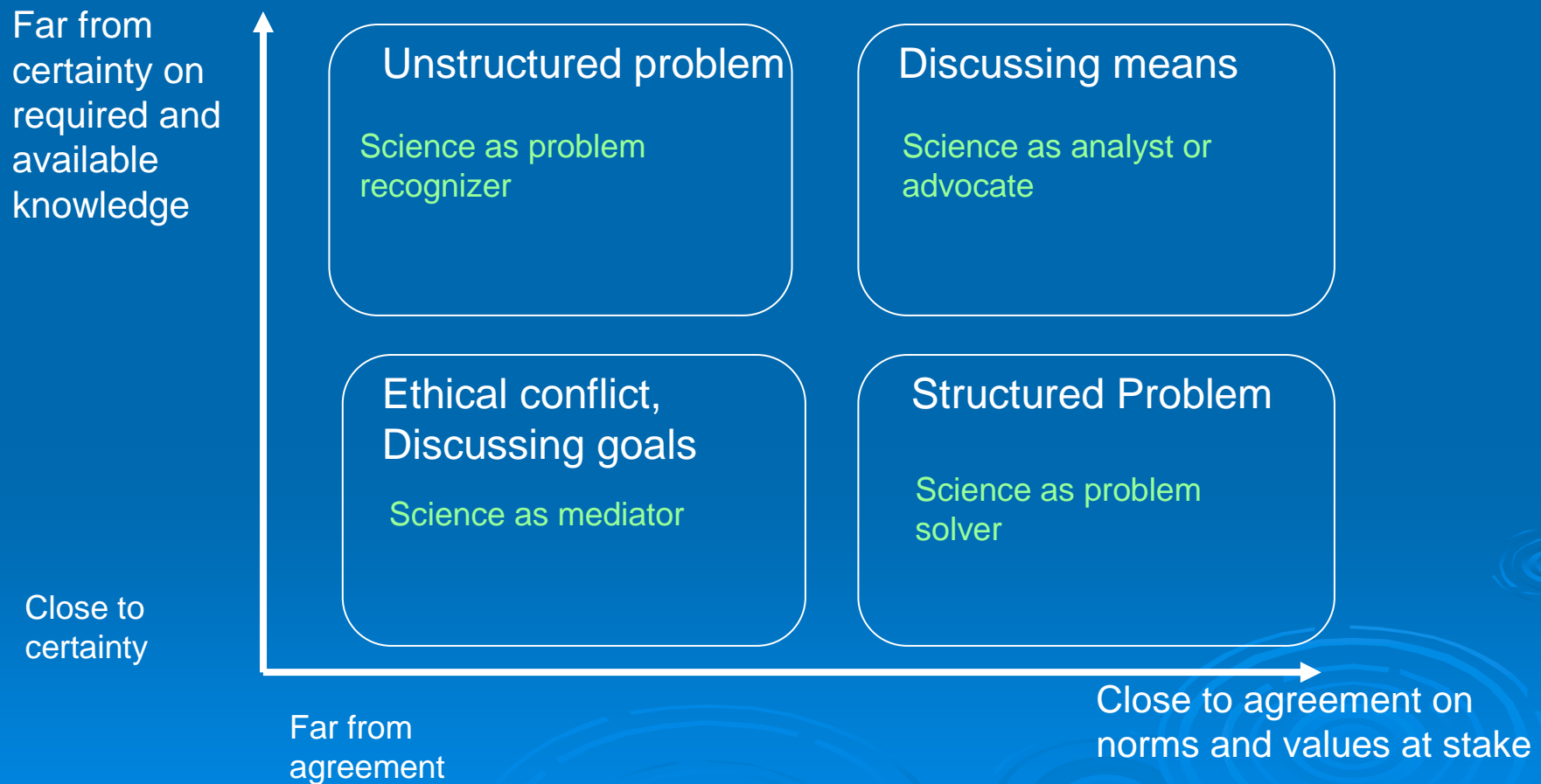


Science

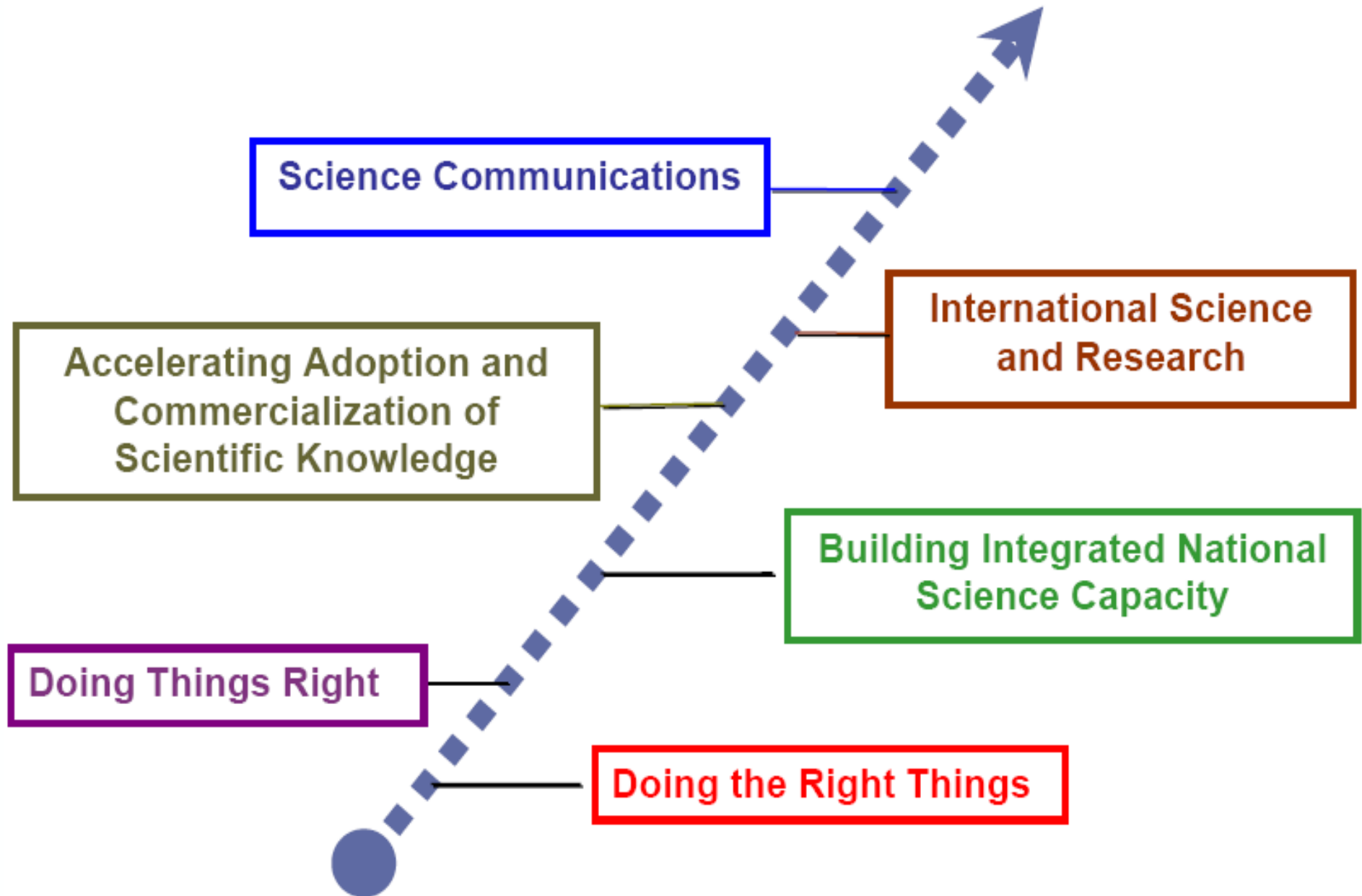
- What is the role of science?



Politics and analysis -- Problem types and allowed/ascribed roles for science



Road Map to Deliver the Best Science



Conclusions

Environment and health field is driven by science and policy in an interactive way:
see chemicals and health

But policy is driven mainly by society and partly by science

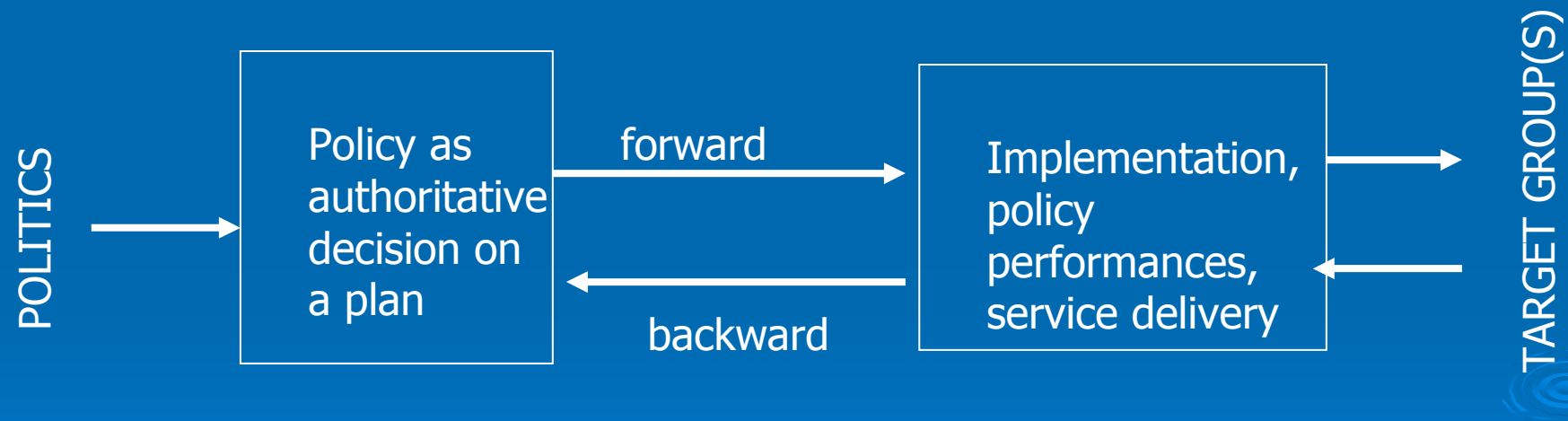
Suggestions

- Environmental health field will benefit from an integrative approach

.....but we can also think about a more
bottom up approach!



Policy design as:
Top-down = forward mapping
Bottom-up = backward mapping



Backward mapping from the self-management tasks of a chronically ill patient

- 1. Engage in activities that promote health and build physiological reserve, such as exercise, proper nutrition, social activation, and sleep.
- 2. Interact with health care providers and systems and adhere to recommended treatment protocols.
- 3. Monitor their own physical and emotional status and make appropriate management decisions on the basis of symptoms and signs.
- 4. Manage the impact of the illness on their ability to function in important roles, on emotions and self-esteem, and on relations with others.

Backward mapping from implementing organization = general practitioner or medical specialist

- No time/inclination for consultation and cooperation; thus, no/suboptimal organization of care that requires some advance planning.
- Other health professionals too busy managing patient visits and flow; so –"by default"– g.p. responsible for planning, counseling and follow-up of care.
- Needed information inaccessibly organized in medical records.

Backward mapping from implementing organization = environmental health practitioner or specialist

- Time for consultation and cooperation; but, no/suboptimal organization of taking care that requires some health system support.
- Busy managing ad hoc patient visits and getting information. Time consuming. Fit and responsible for planning, counseling and follow-up of care on population level.
- Needed personal information inaccessibly organized in medical records. Other information available about exposure.
- Needs structure to function.

Bottom-up approach in environmental health

- Structure for professionals
- Scientific support to make problems structured
- Scientific support to increase knowledge/ identify new problems
- Policy support to increase visibility
- Policy support to build infrastructure

What is your aspiration level?

Climbing the Ladder of Utilization (1)

➤ Step 1. **Transmission.**

- Inputs transmitted to policymakers and relevant social stakeholders/citizens.

➤ Step 2. **Cognition.**

- Inputs read, seen, and understood.

➤ Step 3. **Reference.**

- Inputs cited or referred to in public debate and policy deliberations.



What is your aspiration level?

Climbing the Ladder of Utilization (2)

- Step 4. **Effort.**
 - Policymakers have made an effort to adopt your recommendations.
- Step 5. **Adoption.**
 - Your results have somehow influenced authoritative policy choice and decision.
- Step 6. **Application.**
 - Your results gave rise to implementation and/or elaboration in policy practice.

