

Environmental and Social Impacts of Thermal Treatment Facilities

LAM Kin-che

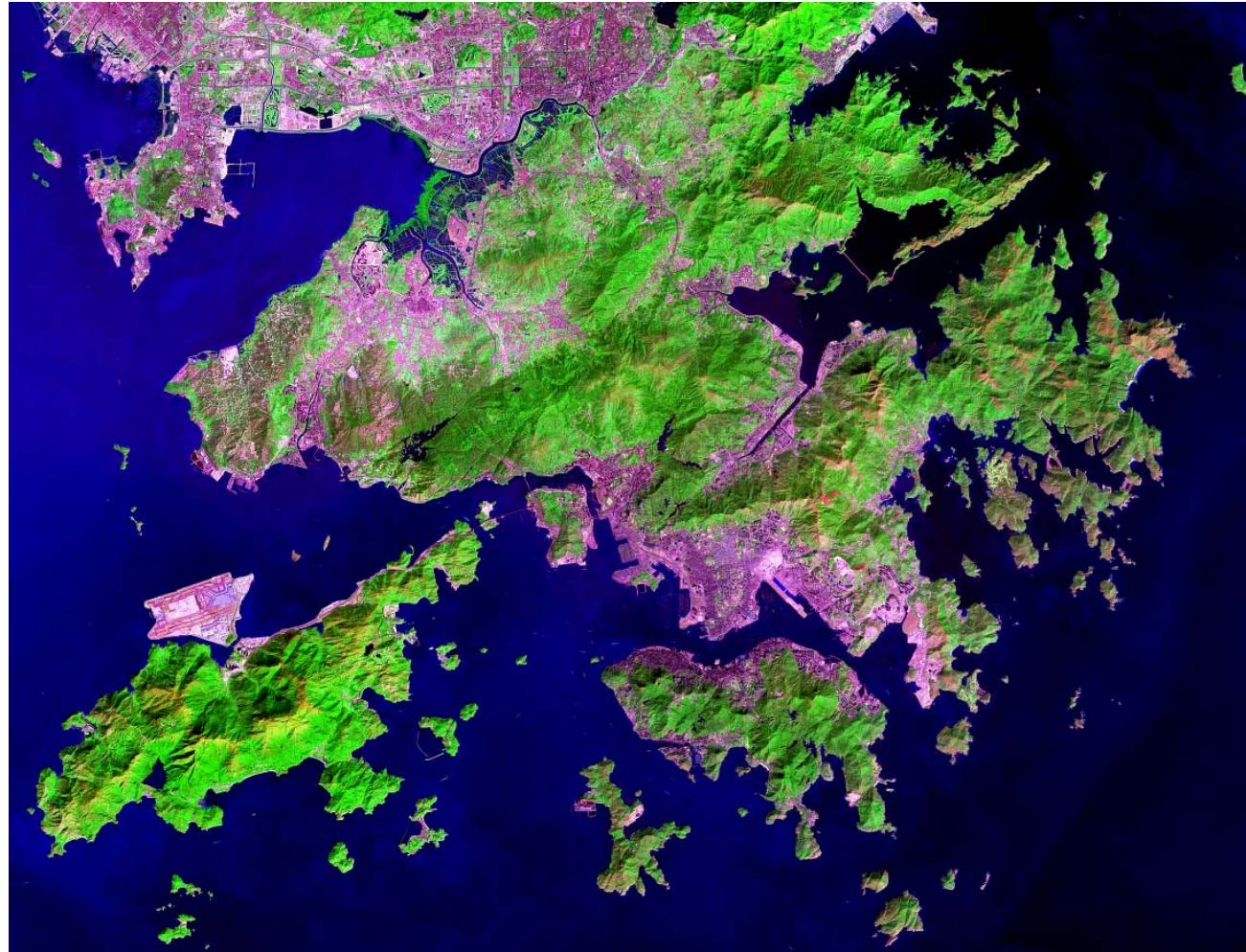
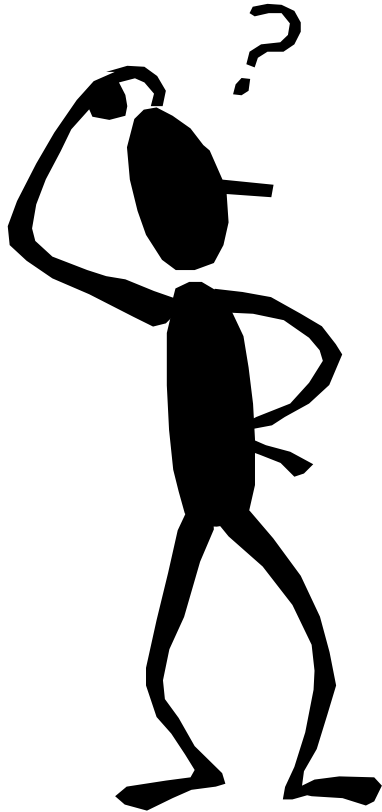
Chairman, Advisory Council on the Environment, HKSAR
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The Issues

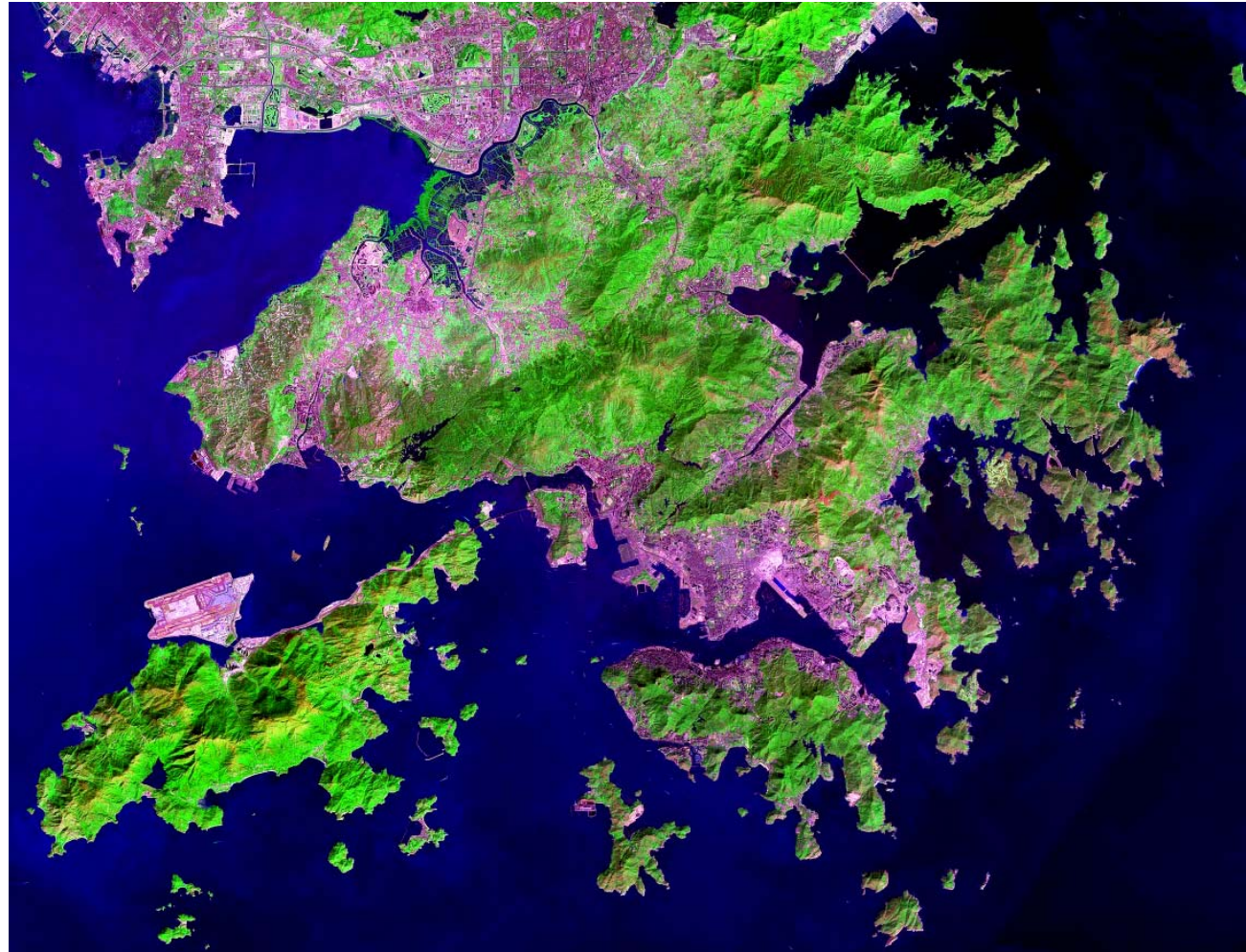
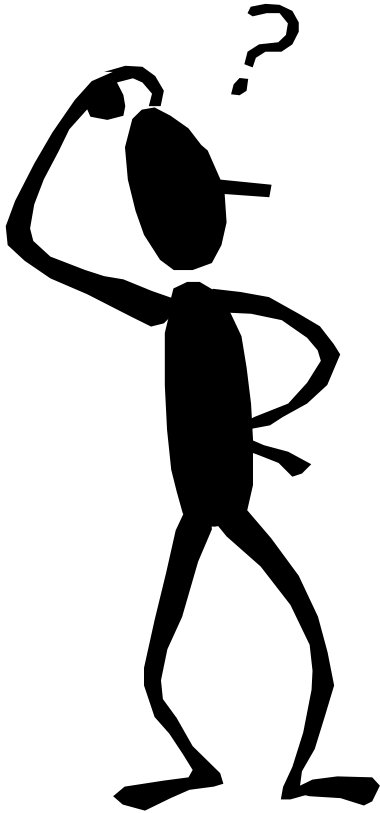
- **Environmental Impacts**
 - Is it the most appropriate technology?

- **Social Impacts?**
 - Site specific – where?
 - Who are affected?
 - How are they affected?

**Is this the most appropriate technology?
Where should it be located?**



How should Hong Kong manage the waste problem?

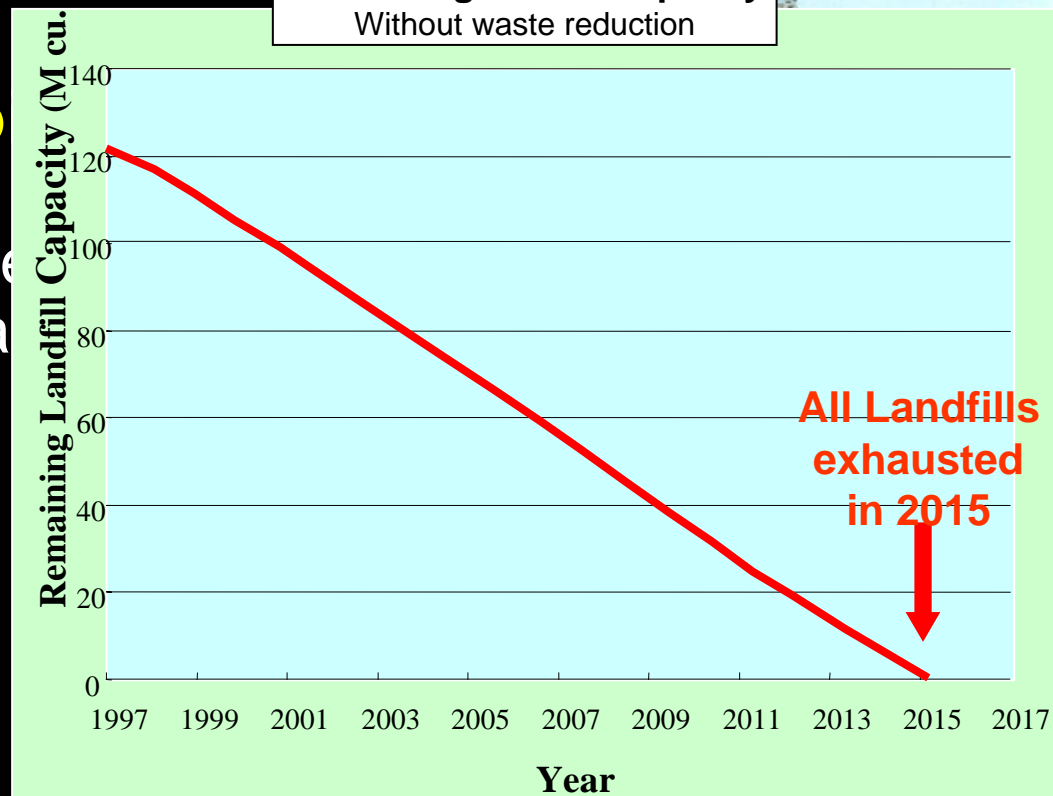


Problems

- Escalating waste generation
- Dwindling landfill capacity
- Increasing public asp
 - Environmental quality
 - Environmental & proced
 - Participatory democra



Remaining landfill capacity
Without waste reduction



The Issues Re-framed

- **Not just a choice of**
 - Technology
 - Site
- **How to articulate an integrative approach**
 - Durable and sustainable
 - Meet demands of the society
 - Manage waste – source reduction, treatment & disposal
 - Manage aspirations of host community & general public
- **The Goal**
 - Enhancing the quality of life
 - Sustainability

Putting The Issues in the Framework of Sustainability

- **Technology**

- Not just an issue of whether the impacts are acceptable
- But a matter of
 - Waste avoidance & minimization
 - Comparative advantage
 - Being a good global citizen

- **Site**

- Not an issue of whether or not society at-large
- But a matter of
 - Environmental justice
 - Benefit sharing



Environmental Considerations

Key Environmental Issues

- **Air Quality Impacts**
 - SO₂, particulates, HCl, NOx
 - Hazardous compounds – benzene, dioxin
- **Residue**
 - Fly ash, bottom ash, bottom slag
- **Visual Impacts**
 - Visual intrusion
 - Iconic meaning





DANGER: CHEMICAL WASTE
危險勿近: 化學廢物

MAN

KZ 5291

646 646

642



Key Environmental Issues

- **En-route**
 - Nuisances, traffic, dripping
 - Mode of refuse transfer
- **Odour**



Risks

- **Risk**
 - Assessment of frequency and magnitude is **science**
 - Acceptability of risk is **politics**
- **Public and experts see risks differently**
 - Experts see risks as “numbers”
 - Public dread risks that are unfamiliar, uncontrollable, fatal, catastrophic, not equitable
 - Risks can be amplified in the society resulting in stigmatization and labelling

Is EIA an adequate Safeguard?

- **EIA Process**
 - Alternative sites
 - Compliance with environmental criteria
 - Limits and bounds of the statutory framework
- **In Hong Kong**
 - Technological / environmental focus
 - Social impacts are not covered by existing framework

Putting the Environmental Impacts in Context

- As a component of an “integrated” strategy
 - Indispensable?
 - Core?
 - How does it integrate with source reduction, recycling, sorting, other technologies & ultimate disposal
- Comparative advantage with other technologies
 - Vis-a-viz Landfilling
- Sustainability
 - Green house gas emission
 - Waste to energy

Social Considerations

Key Social Impacts

- Property Value
- Community Label
 - Stigmatization
 - Self-reinforcing
- Benefits to the host community
 - Benefits to the society are diffuse
 - To the host community not noticeable (hi-tech => less job opportunity for locals)

Key Stakeholders

- **The proponent** who is interested in constructing the facility.
- **The affected public** who are affected by the risk and benefit from the facility.
- **Public interest groups** who have their own value and agenda regarding future development of the society.

LULUs, NIMBYs AND ENVIRONMENTAL JUSTICE

- ‘Locally unwanted land uses’ (LULUs) and ‘Not in my backyard’ (NIMBYs):
- Facilities or services that **society** collectively requires, but usually does not view as desirable to have **close to where people live**, work or play.
- **Examples**: landfill sites, incinerators, hazardous waste disposal sites, sewage treatment plants, nuclear power plants, airports.

The NIMBY Squeeze

- **Features of NIMBY projects**
 - Diffuse net benefits at national/city level
 - Concentrated net costs at local level
- **Increased demand for projects**
 - Economic growth and infrastructural needs
 - Waste generation with increasing affluence
- **Increased difficulties to supply projects**
 - Trust, environmental quality, equity/justice, participatory democracy
- **Siting as contentious politics**

EQUITY

- Focuses attention on *fairness* in terms of the social and spatial distribution of environmental risks.
- *Distributive equity* relates to distribution of benefits and costs upon and among different groups in a host community.
- Normal approach is to compensate host communities, usually through financial *incentives* (tax relief, new or enhanced community facilities).
- *Procedural equity* involves modifying processes used for risk prevention, control and mitigation.

CUHK Study on the Siting of LULUs in Hong Kong

RGC Public Policy Research

Objectives of CUHK LULU Study

- Elucidate how NIMBYism has arisen in the unique political, social, economic and geographical context of Hong Kong
- Explore how conflicts arising from LULUs might possibly be resolved

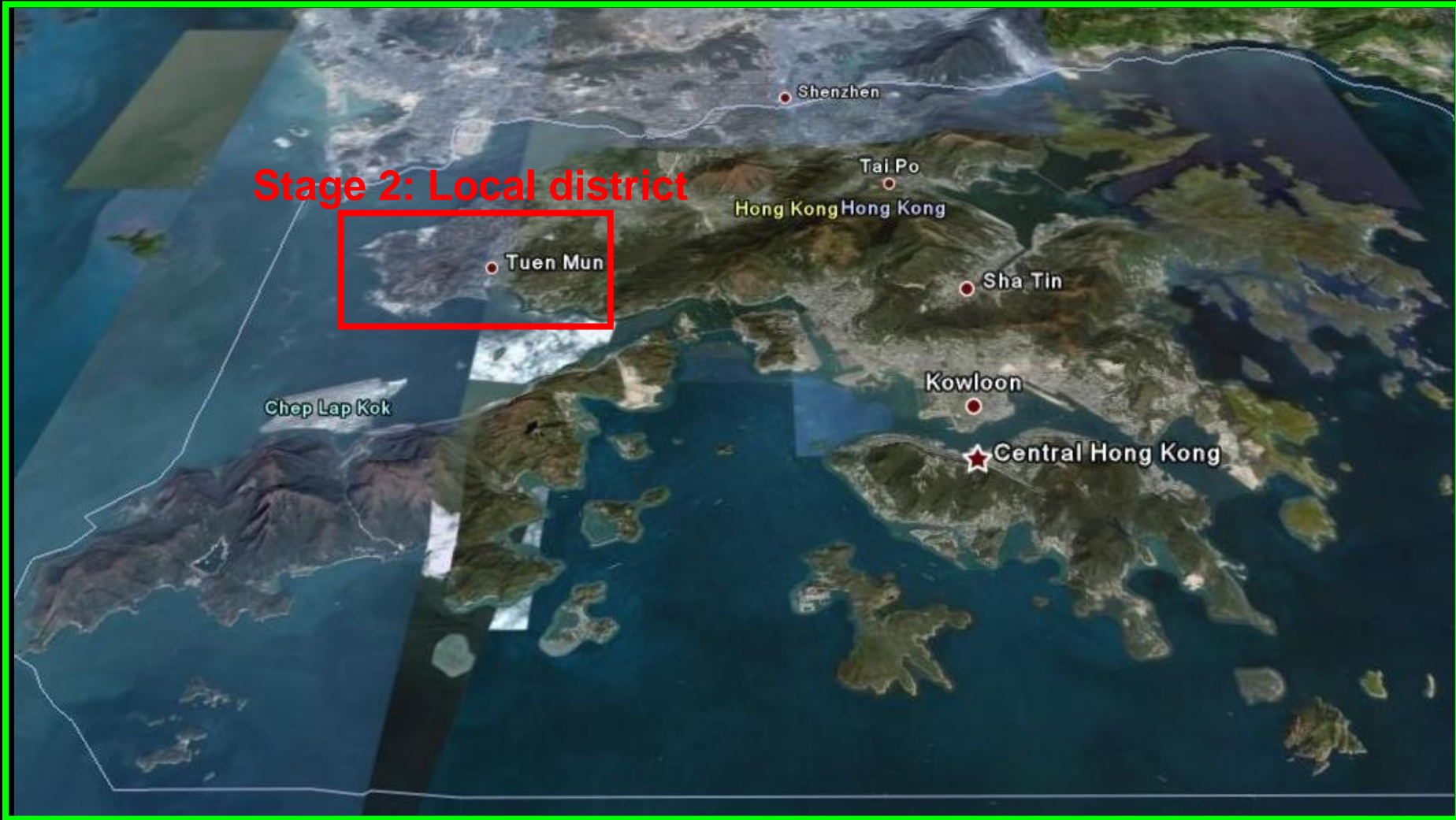
Questionnaire Survey

- **Stage 1: Territory-wide survey**
 - May 2007
 - Telephone survey
 - 1002 interviews completed
- **Stage 2: Local district (Tuen Mun) survey**
 - Oct - Nov 2007
 - Face-to-face interview in Tuen Mun, a district with disproportionate share of LULU
 - 752 residents successfully interviewed

Survey Areas

Stage 1: Territory-wide

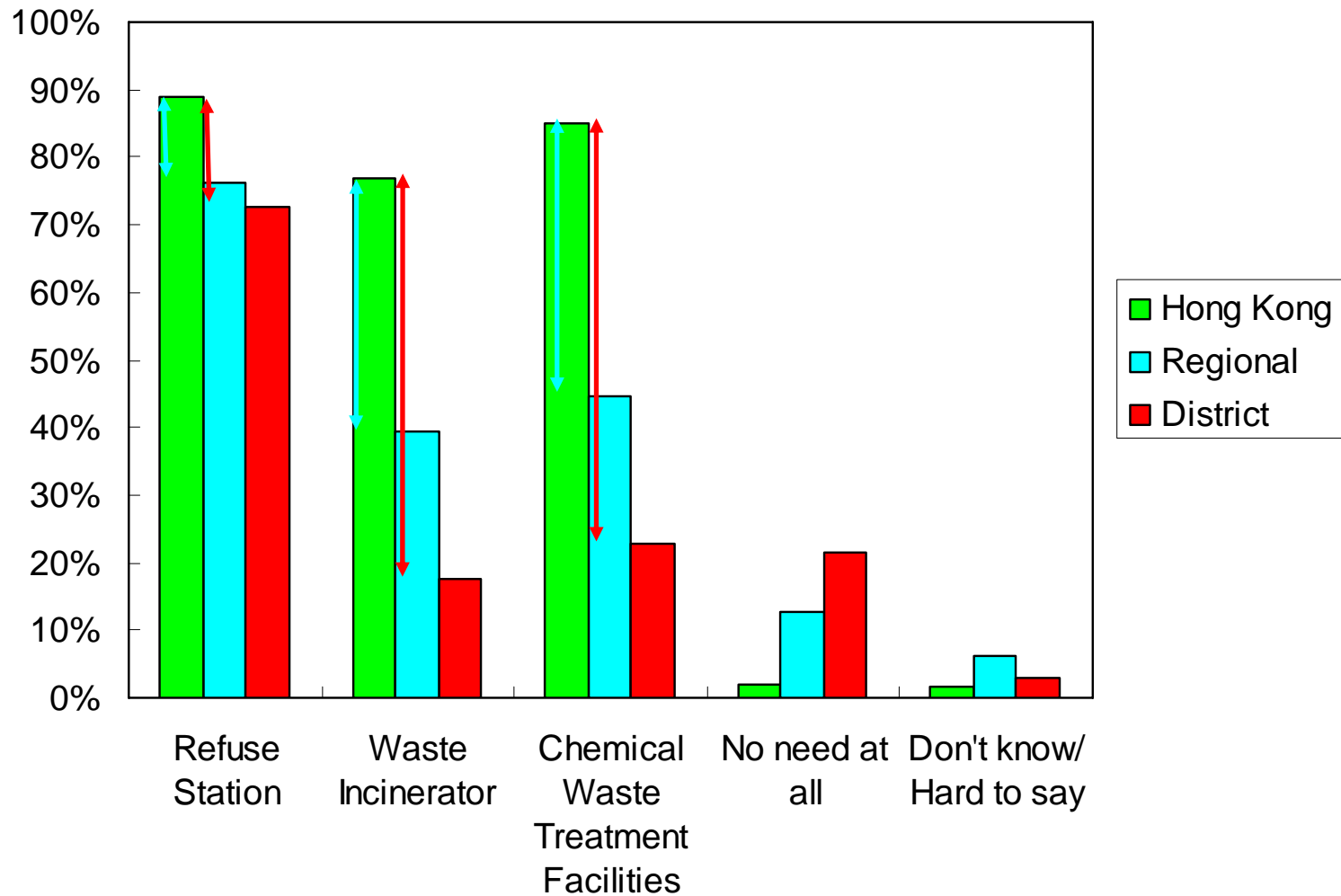
Stage 2: Local district



Source: Google Earth

Findings of the Territory-wide Survey

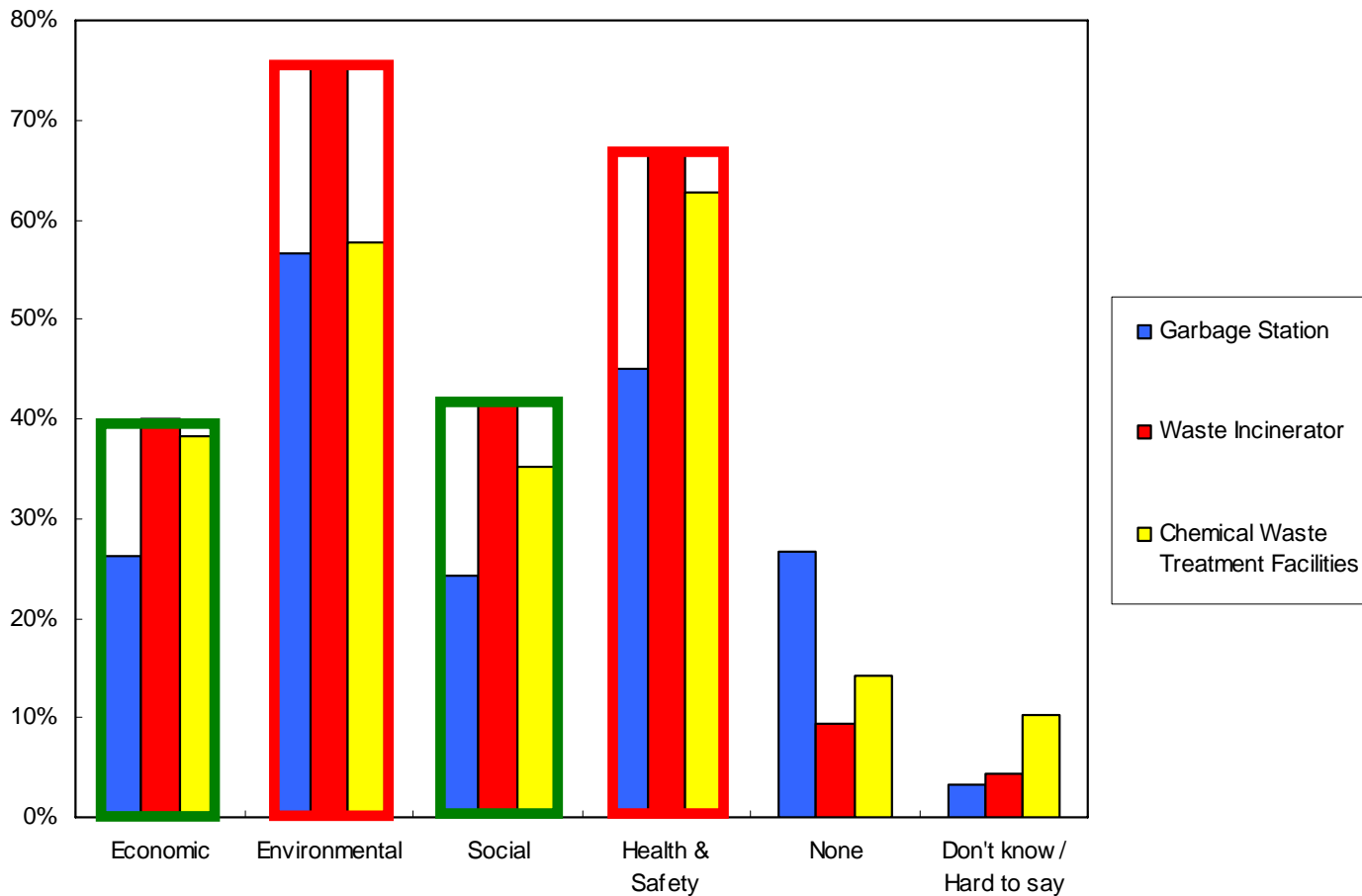
Perceived Need for Different Types of LULUs



NIMBYism as Observed in Territory-wide Survey

- Significantly more people envisage the need for a particular LULU for the **whole** of HK than for their region or local **district**
- Perceived **need** is greater for facilities that most people use (e.g. refuse transfer station) than those that people do not readily associate with
- Some opine that it is only fair to **site** LULUs according to district's need or to evenly distribute them over space

Perceived Risks Associated with Different Types of LULUs in the Territory-wide Survey

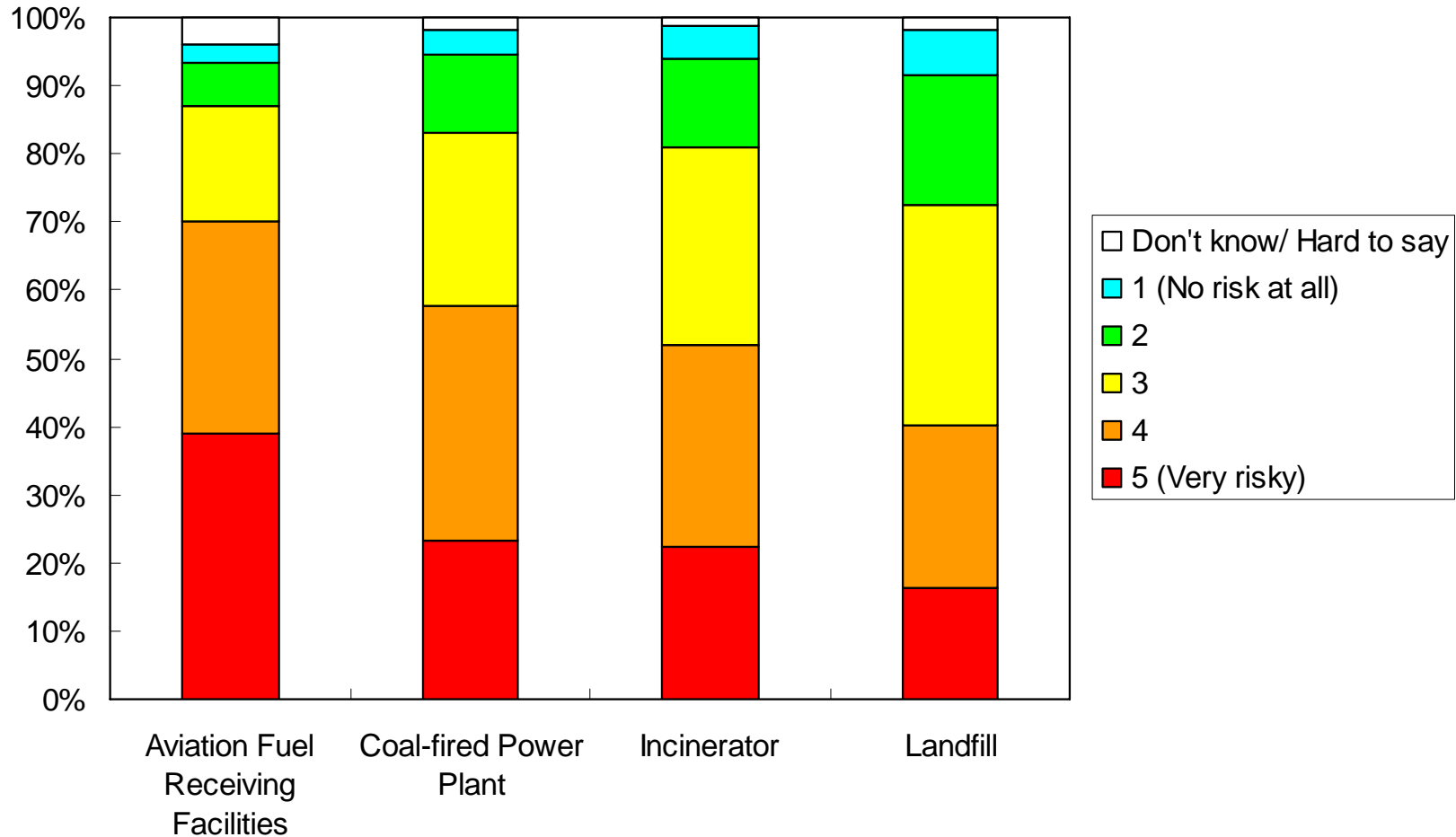


Concerns of residents as revealed in Territory-wide Survey

- Public concern in the following descending order:
 - environmental
 - health impacts and associated risks
 - social and economic losses

Findings of Tuen Mun Survey

Perceived Risks Associated with Different LULUs



Perceived Risks of Different LULUs

- **LULUs unwelcome by Tuen Mun residents**
 - Majority oppose to LULUs although they acknowledge the benefits to they society
 - Oppose to all kinds of LULUs
- **Perceived risks of different LULUs**
 - Greater fear and opposition to hazardous installations with low frequency and high consequence risks

LULUs as Seen by the Proponent

- Such facilities are necessary and in the **interest of the society**
- The **due** planning and EIA processes have been followed
- **Local residents** object to the land use/facility because of
 - Selfishness
 - Ignorant and irrational
 - Hidden motives
 - Unfounded fear or misunderstanding of the technical reports

TRUST

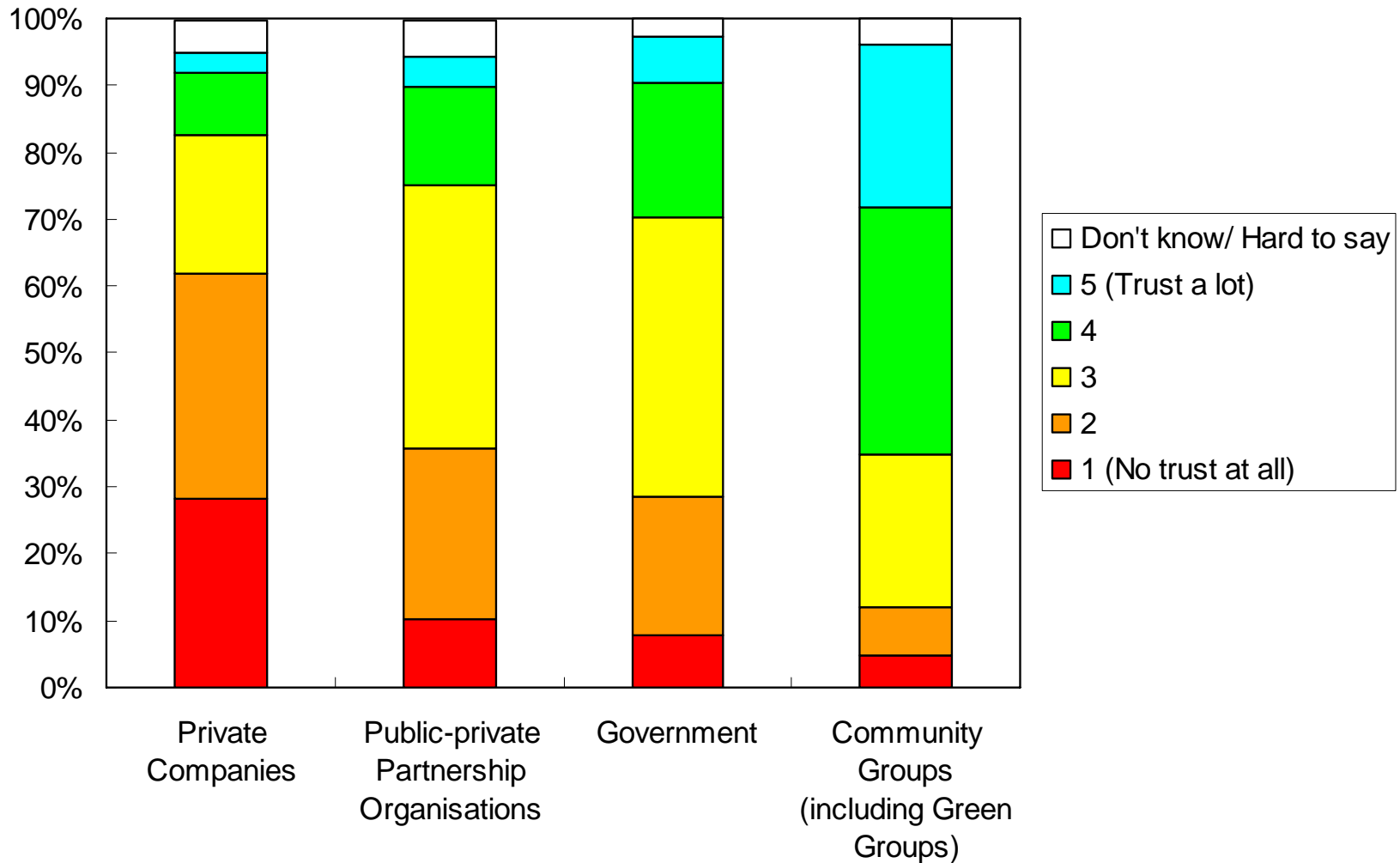
Key for relationships among stakeholders, especially:

- Government regulatory agencies,
- Siting agencies (public or private), and
- Host community.

Conflict and opposition often emerge because people in a proposed host community:

- Do not trust one or both of the regulatory agency or facility proponent, or
- Proposed technology.

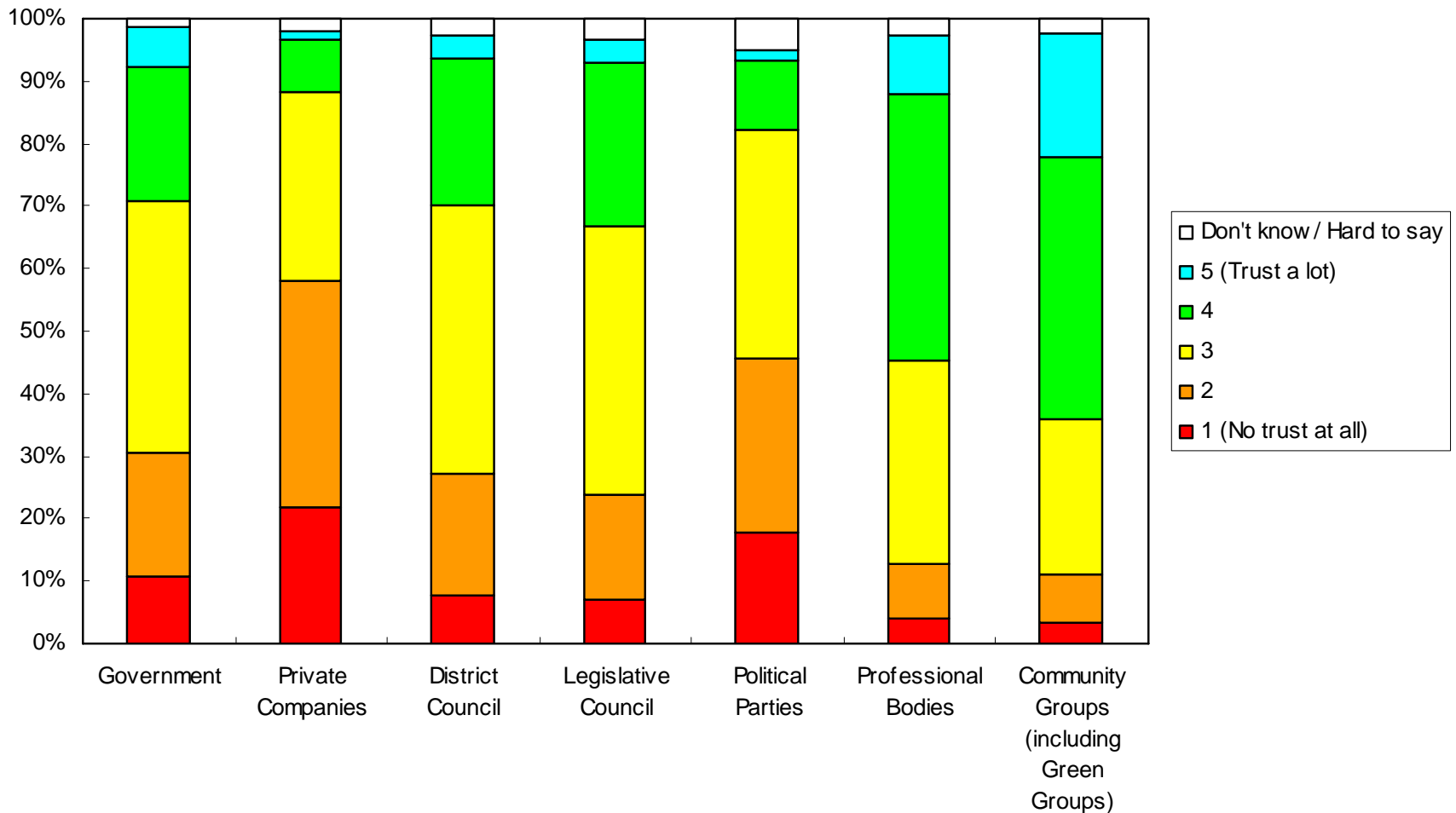
Degree of Trust as Revealed in the Territory-wide Survey



Lack of Trust as Revealed in the Territory-wide Survey

- The public has more trust in civil societies and environmental NGOs than in the government and private sector
- Only 13.3% of the respondents agreed with the statement that the consultation undertaken by the government is adequate

Level of Trust among Tuen Mun Residents



Lack of Trust among Tuen Mun Residents

- Lack of **trust** in the government
 - 31% do not trust government
 - 79% and 68% of respondents feel that the consultation undertaken was inadequate or ineffective respectively
 - 27% reported that they had no faith in the local District Council in handling LULU related matters

Managing the Squeeze

- The DAD approach
 - Government intervention & policy instruments
 - Eminent domain & forced expropriation
 - Softer tools to alter attitudes
 - Inducements
 - Persuasion
 - Agenda setting
- Obviate need for use of coercive force

Inducements

- **Benefit sharing**
- **Compensation as inducement**
 - Increase benefits &/or reduce costs (risks)
- **Redistributive incentive schemes**
 - Legitimacy, distributional issues, rules
- **Risk mitigation**
 - Design/locational changes, monitoring, rights
- **Scheduling of incentives & mitigation**
- **Beware of:** inducement seen as “blood money”, reinforcing the stigma

CONCLUDING REMARKS

- Sustainability
- Ownership
- Integrative approach
- Legislation

GOOD PRINCIPLES

- LULUs normally surrounded by emotion and conflict.
- Highly desirable to agree on transparent principles upon which analysis, discussion and decisions will be based.
- Almost inevitable that not every stakeholder will get everything wanted or expected.
- Greater likelihood of success if the strategy embraces the value of sustainability
- There will be less local opposition if the host community believe:
 - The process is open and transparent;
 - They are heard; and
 - Final decisions include actions to mitigate or compensate for the risks

Acknowledgement

- The Social Survey was supported by the Hong Kong Research Grants Council Public Policy Grant (4008-PPR20051)

Thank You

