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# Non-timber forest products, common pool resources and the role of the state: an intervention model...?

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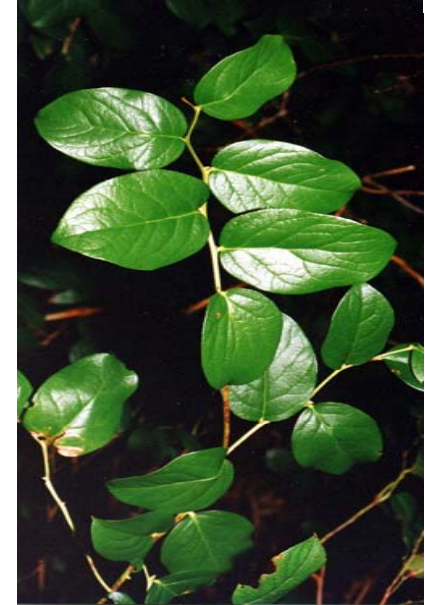
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# Outline

- Overview: Why am I doing this research?
- Problem definition: what am I trying to overcome?
- Sources of social-ecological stress.
- Assessing the need for intervention.

# Overview – Why am I doing this research?

- Non-timber forest products
- History of regulatory effort
- Focused on regulation not forest resource management
- NTFP pilot project
- Selling the concept to ministry executive
- Window of opportunity closes
- Current research focus:
  - Why and when should a state intervene in a CPR market?
  - How does a state intervene in a CPR market?



# Problem definition

- NTFP characteristics
- Broader resource category: common pool resources
- Examples: NTFPs, fisheries, groundwater...
- Open access to resources
- Resulting incentives  
Lack of incentives
- Tragedy of the Commons outcome?
- Institutional failure
- Collective action



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# Overcoming problem

- Property rights
  - Private property rights – market mechanisms
  - State property – regulatory mechanisms
  - Common property – norms and customs/strategies
  
- Governance
  - Decentralization
  - Co-management
  - Corporatization
  - Centralization
  - Multi-level, nested units
  
- ...but what do all these concepts mean when trying to design an appropriate response to the problem?
- How do they relate to the problem, the user-community and existing systems of management?
- What is the problem and what is its source?
- What are state / user objectives?

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# The role of the state in managing common pool resources

- Why, when and how does the state intervene to manage open access common pool resources?
  - Why? Institutional failure – market, policy, collective action
  - When? Is there a single or set of indicators that suggests intervention is warranted?
  - How? There is no certainty in the success of institutional design, so how does the state approach the need for intervention?
  
- Focus on the why and when questions.

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# Why intervene...?

- Market failure:
  - Lack of property rights – open access/limited user open access, incomplete property rights
  - Appropriation externality – subtractable supply, increasing marginal costs, rent dissipation, resource degradation
  - Public goods related externality
  - Free riders
  - Imperfect information – resource use and values, and presence of informal institutions

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# Why intervene...?

- Government or policy failure
  - Lack of policy when there is a need for one
  - Inappropriate policy leading to inefficiency – subsidy, fiscal measures, un-enforced property rights
  - Negative or non-decisions
  - Inequitable / inefficient transfers of income, property rights, power
  - Path dependent policy
  - Corruption, power dynamics
  - Implementation failures
  - Uncommitted elected/public sector



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# Why intervene...?

- **Collective action failure**
  - Individual incentive overrides collective good
  - Resource salience
  - Costs of cooperation - 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> order dilemmas
  - Heterogeneity and group size
  - Trust and social capital
  - Information
  - External influences

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# Why intervene...?

## ■ Result

- ❑ Individual incentive to over-harvest
- ❑ Lack of incentive to invest
- ❑ Individual interests over collective
- ❑ High transaction costs
- ❑ Dissipation of rents
- ❑ Resource degradation
- ❑ “Tragedy of the Commons”?

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# When to intervene...?

- Response – structured or spontaneous?
  - Will property rights necessarily evolve?
  - Who initiates this evolution?
  - How is the problem defined...is there a problem?
  
- Structuring an argument for or against intervention.
  - Model assumes CPR is in open access, limited user open access, or under-managed.
  - Model focuses on public land.

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# When to intervene...?

- Dissipation of rent – but what if sufficient information is not available?
- What causal factors underlie this inefficiency, or socially sub-optimal outcome?
  
- Indicators of risk
  - Increasing or high value
  - Exclusiveness
  - Historical and current use

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# When to intervene...?

- Outcome: resource congestion?
  - Based on contextual influences the outcome may range from ...
    - Resource over-exploitation – rent dissipation
    - Capacity constraint – rent capture/dissipation
    - Robust social-ecological system – rent capture

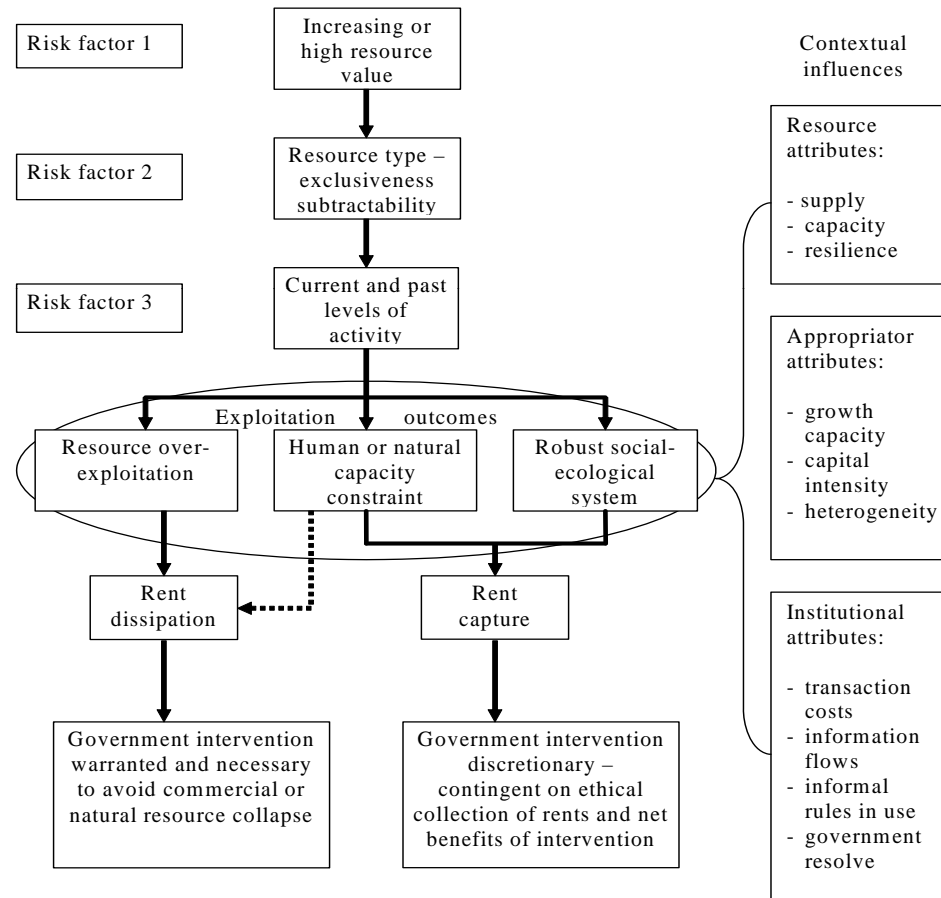
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# When to intervene...?

## ■ Contextual influences

- Resource attributes
  - Supply
  - Capacity
  - Resilience
- Appropriator attributes
  - Growth capacity
  - Capital intensity
  - Heterogeneity
- Institutional attributes
  - Transaction costs
  - Information flows
  - Informal rules-in-use
  - Government resolve

# Why and when – CPR open access intervention model



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# Model output - exploitation outcomes

- Based on interaction of three risk factors and contextual attributes...
  - Resource over-exploitation
    - the tragedy of the commons outcome
    - full rent dissipation, resource degradation
  - Human or natural capacity constraint
    - A resource or appropriator constraint limits extraction potential
    - Rent capture/dissipation
  - Robust social ecological system
    - Resource able to withstand significant annual harvest that does not affect long-term supply
    - Community able to withstand annual variations in supply



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# Model output – source of failure

- Indicates/highlights source of failure
- Indicates areas requiring further investigation
- Provides a basis for intervention based on resource, appropriator and institutional attributes
- Focuses the basis of intervention on the CPR social-ecological system, not an intervention paradigm

# Intervention model case study – commercial salal harvest.

- Salal used as a floral background, source of berries.
- Significant level of harvest, thousands employed.
- Based on series of interviews with harvesters, buyers and researchers.



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# Salal example

- Increasing or high value.
  - B.C. export value – \$50+ million, value fluctuates.
  - Daily wages – significant range, \$50/day - \$200/day.
- Costly exclusion
  - Open access to resource on roaded public land, some private.
- Current and past levels of use
  - Return of volumes to Europe expected, growth in demand expected from Asia.
  - Indications of over-harvest, significant competition among harvesters.
- Model indicates risk of degradation

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# Salal example – model outcome

- Model output: human or natural capacity constraint
  - Contextual factors – easing stress
    - Labour shortage, opportunity cost or other jobs suggest capacity constraint limits degradation.
    - Resource robust, able to regenerate, but commercial quality can decline.
  - Contextual factors – increasing stress
    - Demand may increase pushing prices higher, attracting additional labour, entry costs low.
  - Rent dissipation/capture
    - Rent capture likely, but tending toward dissipation, higher costs due to over-use, loss of commercial quality salal, need to travel further, harder to find, competition from too many users, timber industry.
    - Rent capture through knowledge differences, variable transportation costs.

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# Salal example – sources of failure

- Significant external demand
- Lack of trust among users, buyers.
- Information lacking, benefits of cooperation unclear to appropriators.
- No informal user-based rules-in-use.
- High transaction costs associated with cooperation and monitoring.
- Exclusion costs limit efficacy of tenure rights.
- Government and forest industry shows little interest in managing, places no pressure on sector to coordinate.
- Sector lacks incentive to act collectively.

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# State intervention

- Research part 2
  - How to intervene in a CPR market?
  - Focus on sources of institutional failure
  - Development of institutions based on level of intervention required/possible and the definition of rules guiding SES community
- Other concepts to consider
  - Indigenous knowledge
  - Situating indigenous rights in model



# CPRs and the role of the state

## ■ Comments – suggestions?

