

## RESOURCE OVERUSE AND RESOURCE UNDERUSE PROBLEMS SYSTEMIC INSIGHTS ON TWO SIDES OF THE SAME COIN

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### ABSTRACT

This workshop will survey and overview a range of problems that can be conceptualised as tragedies of the commons or anti-commons. To date, no common systemic structure or systems archetype has been articulated for the tragedy of the anti-commons. The workshop will not only demonstrate the common systemic structure for the tragedy of the commons set out by Senge, but also articulate a systemic structure and systems archetype for the tragedy of the anti-commons. The workshop will also provide opportunity to consider a range of intervention strategies suited to addressing such tragedies taking account of different forms of ownership; and also suggest an evaluation process for assessing the effectiveness of such interventions.

As such, the workshop will provide opportunities for attendees to develop skills in recognising tragedies of the commons and anti-commons; develop skills in building systems representations of those underuse and overuse situations as tragedies of the commons and anti-commons; develop skill in recognising and representing common systemic structure as systems archetypes; and develop skill in identifying points of intervention and relevant intervention strategies from such communality and from systemic structure.

In a world of finite and scarce resources, issues of overuse, often unwitting overuse, can lead to unwanted and unanticipated consequences associated with the phenomenon first labelled as the tragedy of the commons by Garrett Hardin, catalogued by Elinor Ostrom and her colleagues, and later conceptualised as the tragedy of the commons systems archetype by Peter Senge. Whilst such phenomena have often been associated with environmental and ecological sustainability, they have been increasingly recognised as existing in the social, scientific, technological and economic domains as familiarity with Garrett Hardin's and Peter Senge's conceptualisations has grown. As a consequence, it has also been possible to identify how to address such problems with a variety of interventions spanning regulation, privatisation, co-operation, collaboration etc.

In a world of scarce resources, issues of underuse are of similar concern. However, the erstwhile lack of recognition of any common systemic structure underlying such underuse situations, allied with lack of conceptualisation has meant that not only do many such problems remain undetected, but also unaddressed. The work of Michael Heller in labelling, detailing and cataloguing such underuse problems as tragedies of the anti-commons, how they arise, how they relate to different forms of ownership structures, and how they may be addressed, has catalysed the recognition of further problems in a variety of domains relating to land use and land rights - indigenous people's land use, in particular; telecommunications; transportation; science, medicine and the pharmaceutical industry; and matters as particular as property and patent rights, organ donation, creativity in the arts etc. Indeed, Heller's labelling and description of situations as tragedies of the anti-commons has engendered greater attention and recognition of such matters and their relationship to different forms of ownership.

The finiteness of resources, the scarcity of resources, the overuse of resources leading to depletion or extinction, the underuse of resources leading to lost opportunities for wider benefit, all impact on the sustainability of ecological, environmental, science, business and commercial environments.

Addressing these matters has immediate and inter-generational value. Developing the conceptual frameworks to recognise the common systemic structures embedded in such underuse and overuse situations is a precursor to how they may be effectively addressed. This workshop will provide practical opportunities for assessing and using such frameworks.

**Keywords:** tragedies of the commons, resource overuse, tragedies of the anti-commons, resource underuse, systemic structure, systems thinking.