

# A VOCABULARY FOR LUNAR COORDINATION

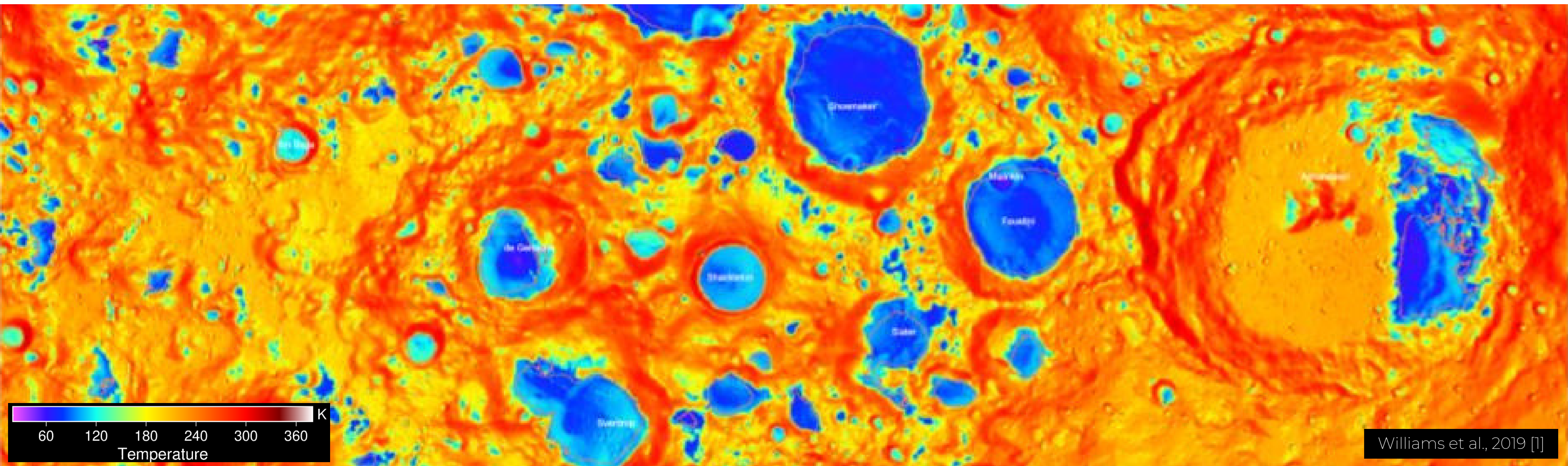
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## WHY CARE ...and why now

- || ACCELERATE
- || SUSTAIN
- || ECOSYSTEM
- || PEACEFUL

One-off landers to a sustainable ecosystem... How?

- 1.Ecosystems require interdependence. Ability to provide a service requires coordination design.
- 2.Waiting for the need vs. Designing mechanisms: distribute the cost of infrastructure and reduce the cost of access.
- 3.Like with ISRU engineering: high level concepts aren't enough. Need implementation details.
- 4."Doing things differently this time"... takes time.

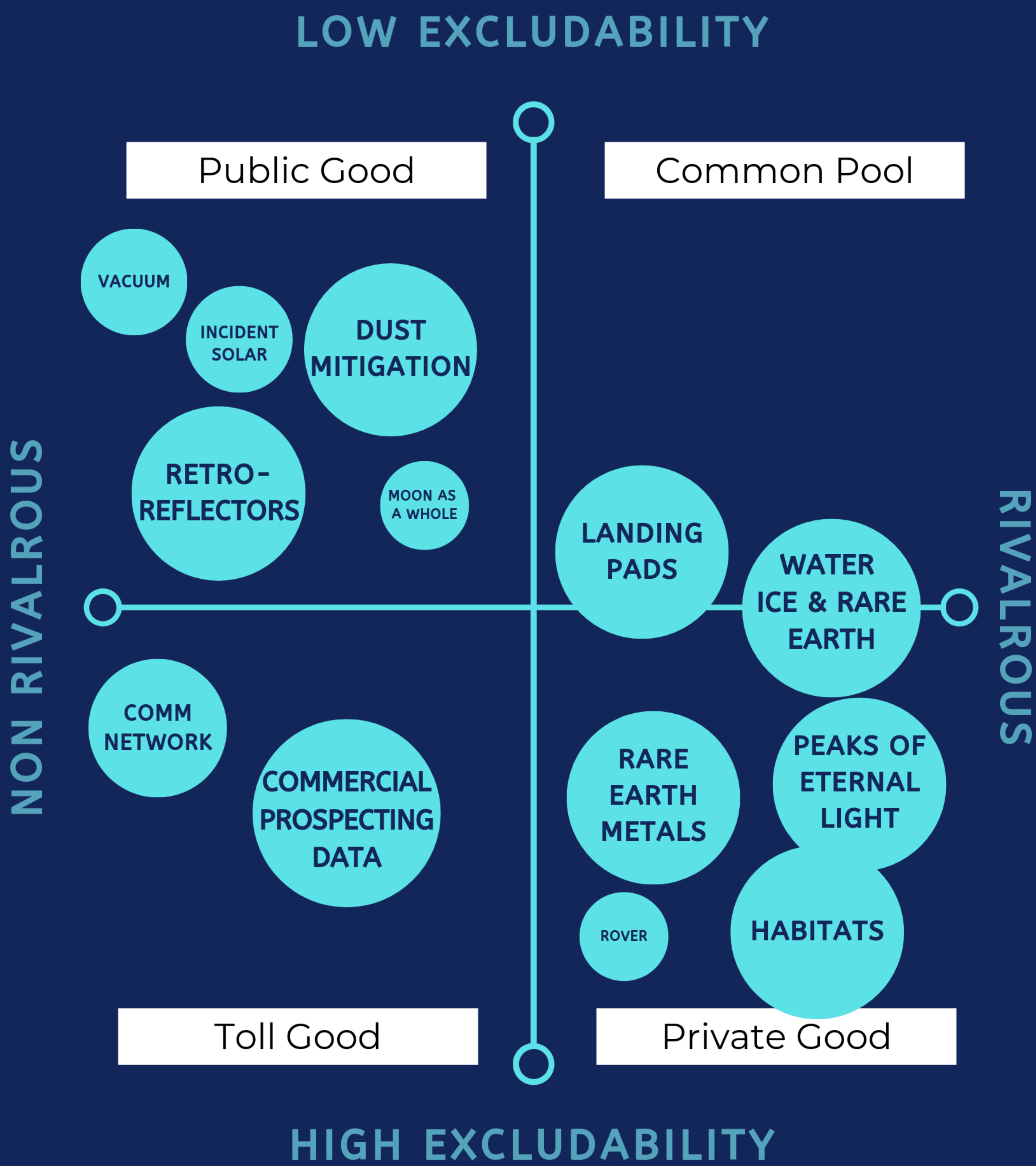


## SCENARIOS

- 1.A government invests a great deal to identify a minable ice deposit. Do they get priority access rights? For how long? What size? Are they compelled to share access? Allowed to sell products? What standards or interfaces?
- 2.Several small private actors wish to invest in a power station together and charge for access to others. Can they limit access? With what authority?

See Also: Hague Space Resources Working Group [4]

## THE GOODS MATRIX IN ECONOMICS APPLIED TO LUNAR RESOURCES



## VOCABULARY

### GOOD TYPES IN ECONOMICS [3]

**"Excludable"**: the degree to which it is possible to prevent others from accessing the resource.

**"Rivalrous"**: the degree to which one actor's use of the resource competes with another's.

	Excludable	Non-excludable
Rival	<b>Private Goods</b> e.g. car, house, cheese, flowers, cars	<b>Common Resources</b> e.g. fresh water, fish, timber, pasture
Non-rival	<b>Club Goods</b> e.g. radio, television, cinema, wifi, library	<b>Public Goods</b> e.g. fresh air, knowledge, national defense

### BUNDLES OF RIGHTS [2]

PROPERTY REGIMES != PRIVATE PROPERTY

**Step 1: Constitutional Action:** Designing the decision making process.

**Step 2: Collective Choice rights:** Using the decision making process.

- Decisions about (a) Exclusion, (b) Management and (c) Alienation

**Step 3: Operational rights:** the results of the decision making process

- (a) Access and (b) Withdrawal

## Credits & References

[1] Produced in Quickmap. <https://quickmap.lroc.asu.edu>. NASA/GSFC/Arizona State University. Map layer: Williams et al. (2019) Seasonal variations in south polar temperatures on the Moon, LPSC 50th, #2852. [2] Ostrom, E. and E. Schlager. (1992). Land Economics. 68(3):249-262. [3] Ostrom E. (1990) Governing the Commons: The Evolution of Institutions for Collective Action. [4] Hague Space Resources Working Group, 2016-2019, <https://bit.ly/2F6XeSY>. Design acknowledgement: Brittany Ferrero.