

Incentive System, Human Agency, and Sustainability

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Hello, scientists!



Donald J. Trump

@realDonaldTrump

Following

The concept of global warming was created by and for the Chinese in order to make U.S. manufacturing non-competitive.

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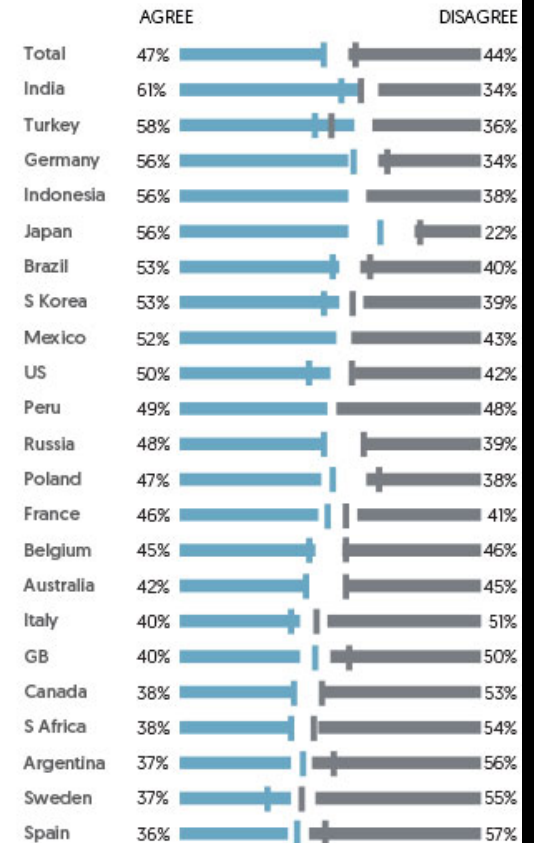
THE DEATH OF EXPERTISE

The Campaign Against Established Knowledge and Why it Matters

TOM NICHOLS

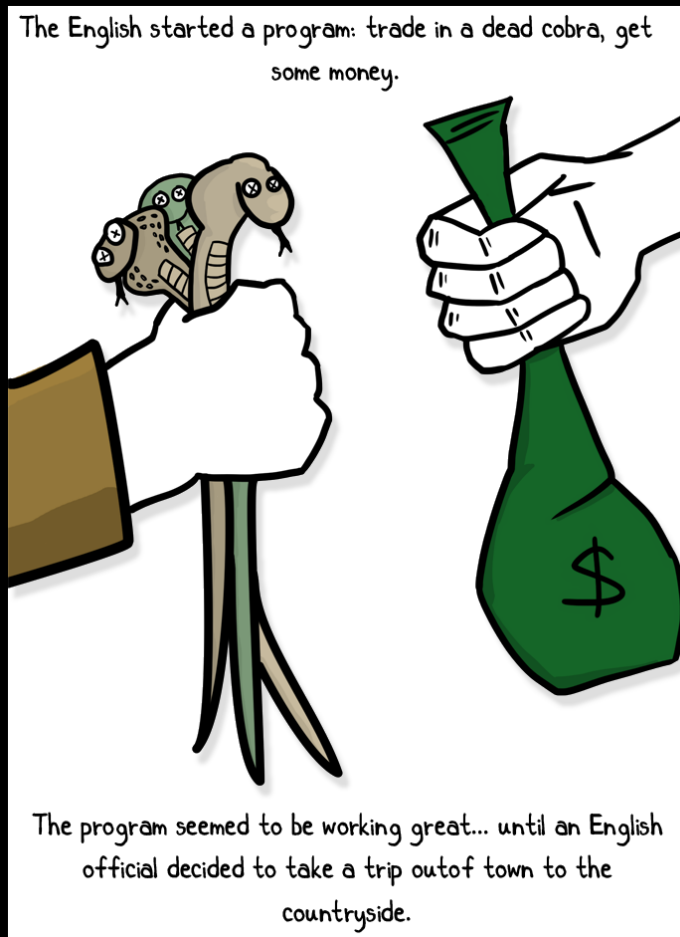
TRUST IN SCIENTISTS IS SPLIT

Even the scientists don't really know what they are talking about on environmental issues



Ipsos Global Trends Survey, 17,180 adults across 22 countries, online, 12 Sep – 11 Oct 2016

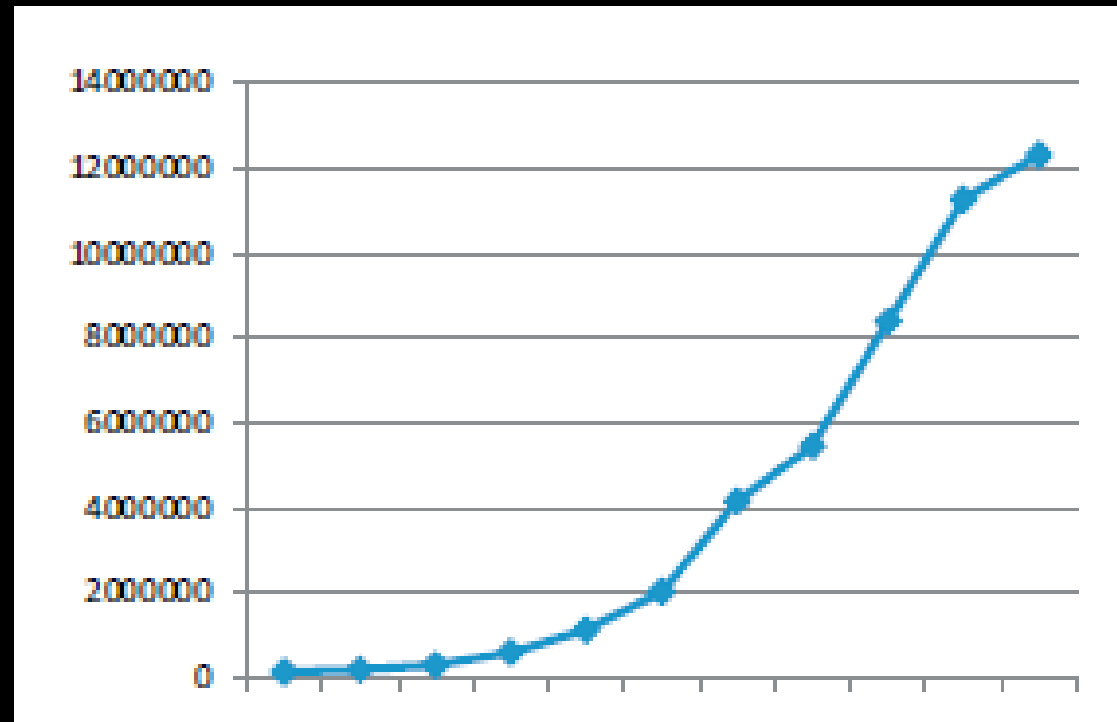
Incentives and Unintended Consequences



- The Cobra Effect
- Jevon's Paradox
 - when technological progress increases the efficiency with which a resource is used (reducing the amount necessary for any one use), but the rate of consumption of that resource rises due to increasing demand
- "CO2-lonialism"
 - the pursuit for sustainability in developed countries lead to the exploitation of human and nonhuman life in the Global South

Expansion and Haze

- Satellite imagery has constantly shown that haze incidents are mostly related to agricultural expansion and land clearing for commodities such as oil palm and acacia plantations.



Efficiency Comparisons between Malaysia and Indonesia – most recent available figures (Arulandoo, 2016; Hoffmann et al., 2015; indexMundi, 2018; Ministry of Agriculture, 2017; MPOB, 2017; Rachmat, 2017; Saieed and Adnan, 2017; Stevenson, 2014)

Parameters	Malaysia	Indonesia
Planted area	5.2 mil hectares (See Chart 1)	12.3 mil hectares (See Chart 2)
National Annual Yield	21 tonnes per hectare of fresh fruit bunches (FFB)	17 tonnes per hectare of FFB
Oil Extraction Rate	20%	
Mature/Immature	86%/14%	75%/25%
Share of World Market	41%	46%
Types of Production	61.2% on private estates, 22.5% on organised smallholder land (including FELDA, FELCRA, RISDA and state agencies), 16.3% on independent smallholder land	53% of on private estates, 6% on state-owned company land, 8.6% on plasma smallholder land, 32.4% on independent smallholder land

Varkkey, Tyson, Choiruzzad (2018)

Different trajectory

Factors	Definition/Details	Short-Term	Long-Term
Technology-driven	Technical change and advancement in a crop	More output on land per unit of input	land saving/intensification (Alcott, 2005)
Market-driven	Shift in product mix to higher value crops due to new market opportunities, like the high prices of certain commodities	Raises economic productivity and profit on land, providing incentives to expand the area of land available for cultivation or exploitation	land expansion - Jevons paradox (Alcott, 2005)
Human-driven political and social incentives (Malaysia)	Forest cover pledge, intensification policies to work within pledge limitations	capital mobility to Indonesia (driving expansion there)	land saving/intensification in Malaysia
Human-driven political and social disincentives (Indonesia)	No forest commitments, expansionist policies focused on market creation and production goals	limited incentives for technology-driven intensification	land expansion in Indonesia

Market Incentives + (Mis)Governance

- market incentives and governance matters in shaping the behaviour of those involved in the palm oil industry
- Increasing demand for palm oil, coupled with the declining price of rubber, has led many farmers in 2000s shifted to oil palm.
- In many cases, smallholders are following the behaviour of major companies, which started to aggressively expanding their oil palm plantation in that period following the palm oil boom.
- However, market incentives alone is not enough to explain the opposite trajectories of land use in Indonesia and Malaysia. Socio-political factors, embodied in the governance (or mis-governance) of palm oil industry in both countries, have created a situation where Indonesia became the site for agricultural expansion, which is connected to the incidents of haze and biomass burning.

In Search for Comprehensive Solution

- While macro, structural level explanation is powerful in explaining general trends, it is unable to explain variations of actors behaviour despite the structural condition that incentivizes or dis-incentivizes particular actions.
- For example, despite the general tendency in Indonesia for expansionist policies, some villagers are re-converting their oil palm plantation back into forest or mangrove conservation area. Some also shifted to other, more environmentally-friendly plantation. Interviews with farmers in several districts in Riau had shown that different, sometimes unique, factors had influenced the decision of the farmers, such as simply following the village head, advocacy from NGOs or government agencies, or for cultural reasons.
- The need for agency-level explanations

Traditions in Social Sciences in explaining human actions

- Logic of consequences
- Logic of appropriateness
- Logic of practice

Incomplete...

- existing incentive system(s) to prevent biomass burning and to promote a more sustainable agricultural practice are based on an incomplete understanding of agency-level explanation for the agricultural expansion and the biomass burning that often follows it.

Temporary Observation

- Incentives matter
 - Incentive matter because when people decide to move to or from palm oil, or to participate in the RSPO certification, they generally calculate the cost and benefit. Thus, the lack of sustainable economic alternatives which are more environmentally friendly than palm oil is an important obstacle to control biomass burning in Indonesia. Some farmers in Riau already attempted to move to some alternatives such as *Jernang* (Dragon's Blood), *Kembang semangkuk*, or *Pasak Bumi*, but they have difficulties to survive economically. According to the farmers, Jernang was not even listed as a commodity by the Ministry of Trade and thus they sell it in illegal market via *tauke* in Jambi.
- But only partial. On the issue of governance, ineffective and overlapping governance creates different expectation of incentives and disincentives and conflicting norms expectation.
 - It creates problem of credibility of the governing institution and at the same time creates trade-offs between incentives.
- Role of social networks between individuals is also an important factor.

Way Forward

- **Governance reform.**
 - Without good governance, incentive system will be broken and ineffective, role expectations are unclear, institutions are not credible, and ‘practice of unsustainability’ will be the habitus.
- **Beyond visible governance.**
 - Practice of sustainability with more inclusive interaction with the people.
- **Comprehensive research to understand the drivers of individual actions.**
 - A national, or even cross-national, surveys accompanied by FGDs of smallholders and business leaders in the agricultural industry (such as palm oil) might be an important starting point.