

Will India's mega-census leave a mega-footprint?

Pachauri¹ has pointed out that India has been taking steps to curb its carbon emissions. On 1 April 2010, India launched its mega-census², which aims to document biometric details of every person aged above 15 years. This mega-census will be the largest registration exercise in human history and will consume 11.63 million tonnes (mt) of paper over the next eleven months. While we do not question its societal benefits, this endeavour undermines India's ostensible³ transition to high rates of decarbonization.

If India operates at its maximum paper manufacturing capacity of around 8 mt annually⁴, considerable amounts of paper must still be imported for this exercise. India recently acquired two of Malaysia's largest paper and pulp companies⁵ and these new 'paper conduits' could fuel the clearing of more natural forests for plantations. Some propose the expansion of tree plantations in India to generate carbon credits⁶ and satiate the shortfall of pulpable wood⁷, but these 'green investments' eventually release carbon when logged. Domestically or abroad, negative environmental impacts from this mega-census could be far-reaching.

We foresee the most amount of paper being utilized during the Census and National Population Register phases⁸. In some districts, we propose the merging of these phases to simultaneously capture demographic and biometric information

electronically (via mobile personal digital assistants and laptops with biometric features) in lieu of paper forms⁹. In areas with higher literacy, the authorities could create a portal for census questions to be answered online – a method successful in Spain and Switzerland¹⁰.

It is alarming that around 15.35 mt of CO₂ (ref. 11), and other detrimental organic compounds⁴, could be released to produce the amount of paper consumed by India's mega-census. We hope that India will adopt environmentally-friendly measures in this and other projects to reduce her carbon footprint and serve as an exemplar of environmental stewardship. The amount of paper to be consumed in future census of populous countries such as China is unfathomable if a precedent is not set now.

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4. Jain, R. K., Singh, K. and Kulkarni, K., *Pulp Pap. Int.*, 2005, **47**, 33–37.
5. *The Economic Times*, Ballarpur Makes \$200 mn Bid for Malaysian Paper Major, 16 February 2010.
6. Basu, P., *Nature*, 2009, **457**, 144–146.
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9. United Nations Statistics Division, UNSD–ESCWA Regional Workshop on Census Data Processing in the ESCWA region, Bangkok, Thailand, 2008; unstats.un.org/unsd/demographic/meetings/wshops/Thailand_15Sept08
10. Buscher, M. and Stamm, H., E-census: The 2000 Census on the Internet – Concept and Stock-taking, Second Swiss eGovernment Symposium, Zurich, Switzerland, 2001.
11. epayplus; <https://secure.actewagl.com.au/epayplus/learnaboutpaper.aspx>. This website estimates that around 1.36 tonnes of CO₂ is released for every tonne of paper produced.

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Is agriculture education in shambles?

The State Agriculture Universities (SAUs) were established on the basis of land grant pattern of USA, modified to suit Indian conditions and to facilitate integration of education, research and extension in agriculture. Today at the time of appointment, scientists accept extension jobs like in Krishi Vigyan Kendras (KVKs), but later they are keen on a transfer to the research/teaching side. Further in almost all the SAUs, the percentage allocation of budget is more for research than teaching; of course, extension gets the lowest budget. Further, most of the budget/expenditure in research and extension side is from the Indian Council

of Agricultural Research (ICAR) and other agencies, whereas teaching/education gets the least from ICAR, except funding development grants. The State Governments allow budget mostly for salary in the non-plan side, whereas there is hardly any budget for day-to-day teaching expenditure from the State Governments, ICAR or other agencies. Thus promising career-oriented persons do not want to stay in teaching for long. Further, the teaching posts are not filled up when vacant, on the pretext that there is fund crunch. To worsen the situation, posts under research, when vacant, are filled up in many cases by transferring

people from the teaching side. Thus the total strength of the faculty gets depleted each year. These negative factors are detrimental to the academic health of the SAUs.

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