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The budget document is an evidence-based policy proposal, oriented by a normative vision convergent with the Sustainable Development Goals. One of the strengths of such document, in my opinion, is that it is rooted in what Kerala has achieved so far, in its traditions: it is not one more of those wishful-thinking texts that pile goals without much contact with reality. Of course, another strength of the document is the clear identification of difficulties and constrains to go along the proposed road. This said, I would like to make five points.

1.- As is rightly put in the document, universities need to be part of the effort of transforming Kerala into a knowledge society. Of course, quality is of paramount importance here. However, assuring quality is weakly related to international rankings. These rankings fulfill a very precise role: they are the commercial showcase of higher education systems that have evolved towards business services. Quality is not always measured by the number of publications in high impact factor journals. There is an international effort going on to change the prevailing research evaluation system, DORA (Declaration on Research Assessment). In my opinion, such change is fundamental for what Kerala is aiming to achieve. International comparisons push researchers to work on problems that are of interest for international journals; this orients research agendas away from problems of local importance but with little visibility in the northern countries. The stress to achieve quantity of papers leads also to address short-term, little risky problems, and even to pursue inadequate conducts, like "salami papers". I would love to work with Kerala reserachers to help building a new global academic reward systems, convergent with open science, where no important problem is left aside and all research is carefully assessed in terms of quality.

2.- The document put the overcoming of the digital divide in a correct perspective, away of a sort of magical thinking by which digitalization by itself will solve all problems. Digitalization may bring more dignity to people if people already have it: housing, sanitation,

good nutrition, health, general education need to be there to allow digitalization to deploy all its potentialities. The recognition of social problems in Kerala, including inequality, and the impressive list of measures to address them pave the way to a digitalization process that adds to development instead of transforming it in a new sort of mirage.

3.- To help the revamped knowledge system of Kerala to address the whole gamut of problems that require new knowledge to be solved, some problems and demands need to be unearthed. This is so for various reasons, including that people may not know that knowledge can be of help for solving some problems, or that they do not know how to phrase a problem in knowledge terms. Unearthing knowledge demand beyond "strong knowledge actors" is not an easy task. But when knowledge demand is clearly stated, research and particularly local research, answers. An Uruguayan anecdote illustrates the point: a team of young researchers at the University of the Republic started developing a new clinical test for COVID-19, combining different pieces of evidence in an innovative manner. They did that for two reasons: rich countries would overbuy tests kits; they also wanted to provide a cheaper solution that is available in the market. Their success was impressive. They provided a key piece in the strategy pursued by Uruguay in the six firsts months of the Pandemic. When Nature, in the issue of December 24, 2020, included Gonzalo Moratorio, the young scientific team leader, as one of the 10 scientific personalities of the year, the whole country was thrilled. This reaffirms the conviction that when demand is clearly stated, it may deliver innovative solutions. My group at the University Research Council has developed a methodology for unearthing knowledge demand related to social inclusion problems: we would love to put our modest advances at your service.

4.- Innovation and development scholars have learned from India the concept of frugal innovation. This leads to pay attention to the heuristics followed to solve problems, to the need for creativity, to the acknowledgement that never ever there is a single solution to a problem, even if this is what we are told. The mantra of "do not reinvent the wheel; if someone have already solved a problem just buy the solution", etc., is misleading. Re-inventing by following different heuristics is simple good common sense. Developing frugal heuristics to problem-solving, that is, to innovation, is something in which we can be of service to humankind. I am sure that Kerala could excel on that.

5.- Governments have always urgencies of all kinds; they need to show results in the short term of politics. However, these urgencies need not to take all their efforts. A small protected

space, a sort of niche, where pursuing demand unearthing, where heterodox heuristics to solve problems are followed and tested, may always be allowed. Perhaps, among the wide array of Centers of Excellence that are envisaged, a Center for Heterodoxy in Innovation (or something like that) may be included, centered around problems defined differently and solved differently. You have been so audacious in your document that a proposal like that can perfectly fit in.