

Professor Cyril Ponnampereuma: Multidisciplinary Institution Builder

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Abstract

Based on the speaker’s first-hand experiences at the inception of the National Institute of Fundamental Studies, the presentation examines the challenges faced by Professor Cyril Ponnampereuma in establishing a pioneering multidisciplinary research institute in an inhospitable environment. Core issues of multidisciplinary research such as reward systems that are capable of transcending disciplinary frames, challenges of maintaining focus and priorities, and communication within the organization and to external stakeholders are discussed. The tension between the appeal to political authority to overcome bureaucratic inertia in the short term and the resultant resistance generated among the stakeholders whose cooperation is essential in the long term is described, with some thoughts from the speaker’s later experiences in institution building within and without government.

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Multidisciplinarity is the theme of the conference. It is being organized by the National Institute of Fundamental Studies (NIFS), an institution Professor Ponnampereuma built. At the time, he was also Science Advisor to the President of Sri Lanka¹ and Director of the Arthur C. Clarke Centre for Modern Technologies (ACCMT). I was privileged to work under him at the NIFS and ACCMT, and to observe his work as science advisor in 1985-1986. I learned much in those 11 months which influenced many things I did subsequently. My intention today is to distil some of what I learned from him to shed light on the challenges we face today in Sri Lanka and elsewhere.

Multidisciplinarity

Professor Ponnampereuma was not involved in the original design of the NIFS. Others were responsible for its enabling statute and name. But he was truly the founder of the institution, bringing it from a converted house in Colombo to the present location in Kandy, scaling it up, and setting its core values and direction through his leadership and early recruitments. He envisioned an institution that would not only do good science, but would do science that would have an impact on the economy and society.² I recall asking him why we had “fundamental” in our name and about the mismatch between what we were actually doing and what is commonly understood as fundamental science. He said we have to do what needs to be done and not worry about labels. If one looks at the early days of NIFS, one will find work on gemology, hydrogeology, mathematics, natural products chemistry and theoretical physics among others. He created an environment where different disciplines co-existed and there was no privileging of basic science over applied or vice versa. It depended on the available resources, human and financial.

It is clear that the major problems of the world require solutions that transcend traditional disciplinary silos.³ The question is whether this is best done through interdisciplinary approaches where the theory and methods are novel or through teams that bring to bear multiple traditional approaches to common problems. The answers differ depending on the nature of the problem and circumstance. But unless

¹ As he described in an interview in 1987: “I’m science adviser to the president of Sri Lanka. It is a one-to-one relationship. There is no office and organization. When the president has a problem, I give him advice. Or I can bring things to his attention—say, in science policy. It is nothing like the kind of organization that you have here, or that India has now. That is a bureaucratic apparatus, whereas in Sri Lanka it is simply that he wants somebody to turn to when things have to be done.” <https://www.the-scientist.com/news/ponnamperuma-on-promoting-third-world-science-63669>

² As he said in the 1987 interview: “If primitive people did not think in terms of trying to answer questions, they would still be polishing stone tools. On the other hand, there is also a great misconception that fundamental studies is up in the clouds somewhere, that it has no relationship to life today. So whatever is done at the Institute of Fundamental Studies must affect the quality of life.” <https://www.the-scientist.com/news/ponnamperuma-on-promoting-third-world-science-63669>

³ See for example, Samarajiva, R. (2018 December 21). Contributions from research to solve Sri Lanka’s problems, *Daily FT*. <http://www.ft.lk/opinion/Contributions-from-research-to-solve-Sri-Lanka-s-problems/14-669293> ; සමරජීව, රොහන් (2017 ජනවාරි 1). ජනතාව සවිබල ගැන්වීමට දායක විය හැක්කේ කෙසේද? රාචය, <https://www.facebook.com/notes/rohan-samarajiva/%E0%B6%A2%E0%B6%B1%E0%B6%AD%E0%B7%8F%E0%B7%80-%E0%B7%83%E0%B7%80%E0%B7%92%E0%B6%B6%E0%B6%BD-%E0%B6%9C%E0%B7%90%E0%B6%B1%E0%B7%8A%E0%B7%80%E0%B7%93%E0%B6%B8%E0%B6%A7-%E0%B6%AF%E0%B7%8F%E0%B6%BA%E0%B6%9A-%E0%B7%80%E0%B7%92%E0%B6%BA-%E0%B7%84%E0%B7%90%E0%B6%9A%E0%B7%8A%E0%B6%9A%E0%B7%9A-%E0%B6%9A%E0%B7%99%E0%B7%83%E0%B7%9A%E0%B6%AF/1168867473190291/>

the conditions exist for those from different disciplines to have these conversations, the question will not even come up. In the way many universities are organized and the reward systems are structured, the conditions do not exist; everything happens within silos. With his knowledge of the conduct of cutting-edge research, Professor Ponnampereuma set about creating those conditions in the green-field setting of the IFS. Even in the seating and eating arrangements, he tried not to allow for too much segregation.

I had come to NIFS from a Faculty of Interdisciplinary Studies at Simon Fraser University and went on to earn tenure in a College of Social and Behavioral Sciences at Ohio State University. My own work has never neatly fit within disciplinary boundaries. LIRNEasia, the regional research organization that I set up in 2004, started off at the intersection of law and economics, but has now brought in ethnomethodology, data analytics, and even design thinking. What I learned at NIFS influenced the new organization, including even in things like seating arrangements.⁴ We are multidisciplinary for sure, and in some cases, we are interdisciplinary as well. Even 30 years ago, I was comfortable with what was being attempted at NIFS.

The real test of multidisciplinary is the reward system. Usually, we reward researchers based on publications. There are high-impact publications and those that are not. Especially with the proliferation of predatory journals, the quality of the journal in which a researcher publishes has become important. It is easier to get through peer review in disciplinary journals which also tend to have better reputations. Novel methods and findings that draw from outside the discipline's established knowledge have a hard time.⁵ Having co-founded a multidisciplinary journal with a high impact factor⁶ and currently serving as editorial board member and referee on several others, I am well aware of the challenges of ensuring fairness and quality in multidisciplinary journals. I cannot speak to the reward structure set up by Professor Ponnampereuma because I left before my first one-year contract expired. If you wish to see if today's NIFS is truly a multidisciplinary research organization the first place to look is its reward system.

Keeping focus

Pursuing multidisciplinary carries with it the danger of losing focus. It is a truism that one cannot do everything well. There is always the hope that the subset of research programs that are undertaken will generate synergies, that two plus two will be greater than four. Just taking on research because money is attached to it is never a good idea. What an organization does not undertake defines it even more than what it does. If one wanders too far afield from one's core competencies, the safeguards that are used almost unthinkingly to assess quality cease to be very effective. LIRNEasia does multidisciplinary research but it extends the scope of its activities with care. I have turned down very large amounts of money because they did not fit our priorities.

The usual method of maintaining focus and managing priorities is strategic planning. My recollection is that Professor Ponnampereuma did not engage in formal planning processes in those early days in

⁴ I once ordered fresh flowers for the common spaces in the office. When I was asked why, I said that's what Professor Ponnampereuma did. Money was tight, so we did not continue for too long.

⁵ For an example of difficulties with peer review, see Arthur, W. Brian (1994). *Increasing returns and path dependence in the economy*, Ann Arbor MI: University of Michigan Press, pp. xvii-xviii.

⁶ On the impact factor, see: <https://clarivate.com/webofsciencegroup/essays/impact-factor/>. In 1999, I with three others co-founded *New Media and Society*, a Sage journal.

Hantana. He had more than enough experience and knowledge to set the priorities for the nascent organization. It is better to engage in these processes after the principal positions have been filled and there is a greater understanding of the external factors at work, both in terms of supply of resources and demand for research output. I assume NIFS did put in place the relevant mechanisms as it matured.⁷ Strategic priorities must determine what research is undertaken and who is recruited.

People who know of my interests and expertise must by now be asking what I was doing at NIFS if Professor Ponnampereuma had a coherent strategic plan in his head. Based on what Dr Sarath Amunugama who was then at UNESCO in Paris told me about a new technology center they had established, I applied to the Clarke Centre from Canada. The response under Professor Ponnampereuma's signature came on ACCMT letterhead. I had no interest in the NIFS and did not even know about it. I returned to Sri Lanka within a week of my PhD defense, hoping to build a policy-relevant research program in ICT applications at the Clarke Centre. Even working part time at ACCMT, I initiated several projects such as the potential of ICTs in disaster risk reduction.

Professor Ponnampereuma wanted my primary affiliation to be NIFS and insisted that I move to Kandy within a short time of assuming duties. This did not mean that he intended to make social and economic aspects of ICTs a focus area at NIFS. My first assignment was to connect Sri Lankan researchers at NIFS and hopefully others to the scientific databases then available to US researchers through the precursors of the Internet, such as the National Science Foundation Network (NSFNET) that had just come online. I thought of it as a bounded project, which when completed, would allow me to switch my primary affiliation back to the Clarke Centre. When he found that I was good in communication, he wanted me to stay on at NIFS to lead the communication work. So basically, I was seen in terms of support for the mainline researchers, rather than as a researcher per se. Of which more will be said below.

But there was one attempt, which did not fully take hold, to include a research stream outside the hard sciences which had few obvious synergies with the other research. This was represented by the bringing in of Professor Ralph Buultjens, an internationally well-connected (to the Nehru family, among others) American academic of Sri Lankan origin, as a Senior Research Fellow (or some such title) in mid-1986. As I was departing in August 1986, Rohan Gunaratne who had done some not-fully-explained work at the National Aquatic Research Agency (NARA), took over my desk. He later went on to earn a Master's degree from Notre Dame University in the US and a PhD from St Andrews University in the UK. The understanding among the research professionals at NIFS was that this was the beginning of a work-stream on the ethnic conflict that had taken center stage since the unfortunate events of July 1983.

The fact that the above development was not explained to the staff led to speculation, and possibly contributed to the problems of the work stream. Professor Buultjens' unfortunate interactions with the Sri Lankan media, including an alleged kidnapping incident in 1988, may have contributed. It appears that two books were produced by Gunaratne as part of his work at NIFS, with effusive forewords by Buultjens.⁸ It appears that this work stream continued outside the mainstream of the Institute, until Professor Ponnampereuma's departure. This aberration illustrates the value of maintaining

⁷ At LIRNEasia, the research organization I established in 2004, we set priorities at a high level through intense debates on values and vision and mission statements in the early years. Formal strategic planning began after about seven years and is now a regular annual activity.

⁸ Gunaratne, R. (1987). *War & Peace in Sri Lanka*. Kandy: Institute of Fundamental Studies; Gunaratne, R. (1990). *Sri Lanka. A Lost Revolution? – The Inside Story of the JVP*. Kandy: Institute of Fundamental Studies.

organizational focus. It is also possible that the Director was constrained by his distance from the methods and measures by which quality in research in contemporary history should be assessed.

Communication

One reason disciplines persist, despite their known weaknesses, is that they are proven mechanisms for effective communication among the members of the disciplinary community. Each discipline has its own language and common frames. Not only can those within the community communicate to each other effectively, they can communicate their work to the outside world better using those frames and language. In a multidisciplinary research organization, the senior leadership must deal with the challenges of speaking multiple disciplinary languages to the outside world, especially to funders of research and to decision makers who can utilize the findings of the research. In large universities, still structured in disciplinary form, these tasks are delegated to heads of disciplinary units such as faculties and colleges or departments and institutes. In a small organization such as NIFS, which is explicitly designed as a multidisciplinary institution, this is not always possible. Especially when it comes to sensitive negotiations about funding or in speaking to the media about the organization, it is necessary for the head of the organization to speak.

Professor Ponnampereuma was a great communicator. He strongly believed in taking science to the people. He excelled in the entire range of relevant skills, from effective interpersonal communication with potential donors and partners to devising communication plans to speaking on television.

I recall participating in an early morning briefing for the Director on an esoteric subject (possibly on some mineral deposits) that had funding potential. The Japanese funders were due in one hour or less. I sat in on the meeting with the potential funders and was stunned by the fluency with which he communicated material he had been briefed on just that morning. He had perfect command of the subject. Whenever I am briefed prior to an important meeting, I think of that sunny morning in Hantana. That has always been my benchmark.

He well understood the value of news events. Haley's Comet did one of its once-in-seventy-five-years visitations to our solar system in 1986, a few months after NIFS moved to Kandy. Due to the sudden departure of the communications lead, Sunil Govinnage, I stepped in to organize the comet-viewing event at Hotel Topaz, high above the city. Professor Nalin de Silva, who was technically in charge of the astronomy program at IFS, not yet having abandoned "Western" science, was present as were many other invitees. All went well, except for the clouds which did not fully cooperate. I was happy to see our hard work pay off.

My project to connect Sri Lanka to the proto-Internet was being ground to a stalemate by the then Director of the Department of Telecommunications. I began making plans to return to the Clarke Centre. But my perceived talent for managing communication caused a problem. Instead of replacing the communication person he had lost, Professor Ponnampereuma sought to make me his communication lead. "I'll make you the Walter Sullivan of Sri Lanka," he said, indicating the scope of the communication tasks he had in mind.⁹ I was flattered, knowing who Sullivan was, but declined.

⁹ Sullivan wrote Professor Ponnampereuma's obituary: Sullivan, W. (1994 December 24). "Cyril Ponnampereuma, Scholar of Life's Origins, is Dead at 71," *New York Times*, p. 10. It had the most inches on the obituary page that day. It only mentioned his role as Science Advisor to the President of Sri Lanka.

I was not willing to deviate from my planned career path to perform a support function for others.¹⁰ I was already getting invitations to speak on and write about topics within my areas of expertise. The Clarke Centre was the right kind of platform for me. Professor Ponnampereuma was stepping down from his role there to devote his attention fully to NIFS and wanted me in Kandy. There was no middle ground to be found. My resulting departure from NIFS (and concomitantly from ACCMT, to my great regret) did not allow me to observe initiatives such as the Science for Youth program that can be better described by others present here.

The key point is that Professor Ponnampereuma placed great weight on the need to communicate science and rational thinking in general, and the work of NIFS in particular. Even in the United States, he would have been seen as unusual in the weight he gave to outreach, but in the rather hidebound Sri Lankan environment, he was a complete outlier. He wanted to communicate, but in fact he was not very impactful in Sri Lanka. The main reasons were language and the still-state-controlled electronic media. He may have realized these limitations, so he focused on the long term by educating and nurturing a new generation of science journalists. The success of those efforts may be assessed by the level of scientific discourse in the popular media today.

Institution building

The NIFS was the first of its kind, more or less. The colonial-era research institutions funded by “cesses” on exports of tea, rubber and coconut existed.

In 1981 two statutes were enacted, one for NIFS and the other for the National Aquatic Research Agency (NARA). NARA had several advantages. It was the successor to a going concern called the Fisheries Research Division of the Ministry of Fisheries which had land, buildings and people. Its founder was Dr Hiran Jayewardena, an international law expert who also happened to be the nephew of President J.R. Jayewardene. NARA was created to lay claim to the maritime zone Sri Lanka was entitled to under the Law of the Sea Treaty, in addition to the tasks of its predecessor organization as well. When Professor Ponnampereuma was invited to take over NIFS, it had been spinning its wheels for three years. It had a converted government house off Baudhdhaloka Mavatha, a skeleton staff, two luggable computers (the famous Kaypros) and not much else.

The scaling up started with the relocation to a former hotel in Hantana in late 1985. New staff were recruited from Kandy; a few who were not from Kandy, including myself and Mr Dayaratne, a retired senior administrative officer tasked to help the Director navigate government procedures, were given temporary accommodation in the unconverted part of the hotel. Plans were being made for a designed-for-purpose building in upper Hantana. The foremost architect in the country, Geoffrey Bawa, had been given the commission.¹¹

The key relationships that had to be managed were with government for resources (capital costs to purchase the hotel as well as operational costs that kept increasing as recruitment increased) and with the universities. It seemed that the first aspect had been brought under control by the placement of a

¹⁰ I did, however, leverage the work I did at NIFS into a funded research project through NARESA, as the National Science Foundation was then known, and a peer-reviewed academic article: Samarajiva, R. (1989). Appropriate high tech: Scientific communication options for small third world countries, *The Information Society*, 6(1/2): 29-46.

¹¹ I recall visiting the Bawa firm’s office in Colombo to discuss the preliminary drawings.

clutches of the Salaries and Cadre Commission in 2003. But the last few years has seen a continuous struggle to maintain that status. When some of my predecessors used political muscle to get things done, the bureaucratic reprisals were slow but merciless. The financial and reputational damage that was caused to ICTA could not be fully repaired, despite the best efforts of the Board I headed.

One cannot get anything new and significant done in this country without the assistance of political authority; but when one does that, the long-term consequences are severe. During my 20 months as Chairman of the ICTA in 2018-2019, I tried to steer the Agency between these two dangers. We achieved some results, but we would have achieved more if not for the considerable effort expended to placate the do-nothing officials at the Ministry and at Treasury. In 1985-1986, NIFS did not appear to have cash-flow problems. But nowadays, much of the energies of senior management and of Boards of entities like NIFS are eaten up by matters such as obtaining legitimate operating expense allocations from Treasury in order to pay salaries on time and providing explanations to, and seeking approvals from, various Ministry officials.¹⁴

Professor Ponnampereuma did not flaunt his connections. Even when I was being stalemated by the state-owned telecom monopoly, he never mobilized the political heavy artillery on my side. He dealt with people as people and always used reason rather than authority. But as I found when I tried to get employment after leaving IFS, perceptions of his power and fears about getting on his wrong side by giving a young man who had dared to cross him were exaggerated in the minds of government decision makers. They may have hated him, but they were scared to give me a chance. He had nothing against me, as evidenced by the invitation I received after I had left to give a colloquium at NIFS.¹⁵ I had no alternative but to leave the country. That turned out well. In addition to all the other lessons, I am grateful for that.

¹⁴ Samarajiva, R. (2019 December 15). Ensuring good performance by boards of SOEs. *Sunday Times*. <http://www.sundaytimes.lk/191215/business-times/ensuring-good-performance-by-boards-of-soes-382642.html>

¹⁵ Unfortunately, he could not be present when I spoke. The last time I saw him was when I left NIFS in August 1986.